

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION**

**IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
DIVISION FOR THE PURPOSE OF
CONSIDERING:**

**Case No. 11368 (Reopened)
Order No. R-10474-A**

**APPLICATION OF PLAINS PETROLEUM
OPERATING COMPANY FOR EXPANSION
OF A PREVIOUSLY APPROVED PRESSURE
MAINTENANCE PROJECT, AND TO
QUALIFY SAID EXPANSION FOR THE
RECOVERED OIL TAX RATE PURSUANT
TO THE "NEW MEXICO ENHANCED OIL
RECOVERY ACT", LEA COUNTY, NEW
MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on April 2, 1998, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 7th day of May, 1998, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised,

FINDS THAT:

(1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.

(2) By Order No. R-10474 issued in Case No. 11368 on October 3, 1995, the Division authorized Plains Petroleum Company to institute a cooperative pressure maintenance project on portions of its E. C. Hill "B" Federal and Baylus Cade Federal Leases comprising the SE/4 of Section 34 and the SW/4 of Section 35, both in Township 23 South, Range 37 East, NMPM, Lea County, New Mexico, by the injection of water into the McKee formation of the Teague (Simpson) Pool in its Baylus Cade Federal Well No. 5, located 985 feet from the South line and 1650 feet from the West line (Unit N) of Section 35, and its E. C. Hill "B" Federal Well No. 13, located at a surface location 947 feet from the South line and 1361 feet from the East line (Unit O), and a bottomhole location 1120 feet from the South line and 1380 feet from the East line (Unit O) of Section 34.

(3) The applicant, Plains Petroleum Operating Company (Plains), seeks to expand its Hill-Cayless McKee Pressure Maintenance Project to include the NE/4 of Section 34 and the NW/4 of Section 35, both in Township 23 South, Range 37 East, NMPM, Lea County, New Mexico, and to qualify this expansion area for the recovered oil tax rate pursuant to the "New Mexico Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(4) The applicant further seeks authority to convert to injection its E. C. Hill "B" Federal Well No. 6, located 1980 feet from the North line and 810 feet from the West line (Unit E) of Section 35, and its E. C. Hill "D" Federal Well No. 1, located 2131 feet from the North line and 660 feet from the East line (Unit H) of Section 34, injection to occur into the McKee formation through the perforated intervals from 9,158 feet to 9,332 feet and 9,114 feet to 9,264 feet, respectively.

(5) The applicant presented land testimony in this case which indicates that:

- a) the Baylus Cade Federal Lease (NM LC-034711) comprises the E/2 SW/4 and the NW/4 SW/4 of Section 35;
- b) the E. C. Hill Federal Lease (NM LC-064118) comprises the E/2 of Section 34, and the NW/4 and SW/4 SW/4 of Section 35;
- c) the applicant owns 100% of the working interest in both the Baylus Cade and E. C. Hill Federal Leases; and,
- d) the applicant has discussed the proposed pressure maintenance project expansion with the United States Bureau of Land Management (USBLM), representing the only additional royalty interest, and has obtained its verbal approval to proceed with such expansion.

(6) The applicant presented geologic evidence and testimony which indicates that:

- a) injection within the Hill-Cayless McKee Pressure Maintenance Project commenced in December, 1995;
- b) a response to injection occurred within its producing wells in April, 1996;

- c) the Hill-Cayless McKee Pressure Maintenance Project was initially limited to that area in Sections 34 and 35 located on the downthrust side of a fault which traversed the N/2 SW/4 of Section 35 and the N/2 SE/4 of Section 34 in a northeast-southwest direction;
- d) as a result of additional reservoir studies, the applicant directionally drilled its Bayless Cade Well No. 7 across the northeast-southwest trending fault in the NW/4 SW/4 of Section 35. The well was successfully completed as a McKee producing well which proved the presence of "banked" oil on the upthrust side of the fault;
- e) in late 1997, the applicant drilled its E. C. Hill "B" Well No. 24 in the NE/4 SE/4 of Section 34. The well, which is located on the upthrust side of the fault, was also successfully completed as a McKee producer; and,
- f) bottomhole pressure data indicates that the lower McKee sand on the upthrust side of the fault is in pressure communication with the upper McKee sand on the downthrust side of the fault;

(7) The geologic and engineering evidence presented indicates that the McKee reservoir is continuous and in communication across the fault, and that the applicant's proposed expansion of the Hill-Cayless McKee Pressure Maintenance Project is logical and geologically justified.

(8) The applicant estimates that expansion of the Hill-Cayless McKee Pressure Maintenance Project should result in the recovery of an additional 145,000 barrels of oil from the expansion area which may otherwise not be recovered, thereby preventing waste.

(9) Costs to implement the proposed expansion are estimated to be approximately \$250,000.

(10) The expansion of the Hill-Cayless McKee Pressure Maintenance Project should result in the recovery of additional secondary oil, thereby preventing waste, will not violate correlative rights, and should therefore be approved.

(11) The applicant testified that only the S/2 NE/4 of Section 34 and the S/2 NW/4 of Section 35 within the proposed expansion area will actually be affected by pressure maintenance operations, and that no additional development of the McKee reservoir is planned for the N/2 NE/4 of Section 34 and the N/2 NW/4 of Section 35.

(12) The expansion area should be limited to the S/2 NE/4 of Section 34 and the S/2 NW/4 of Section 35.

(13) The injection of water into the proposed injection wells should be accomplished through 2 3/8 inch internally plastic-lined tubing installed in a packer set within 100 feet of the uppermost injection perforations; the casing-tubing annulus in each well should be filled with an inert fluid and a gauge or approved leak-detection device should be attached to the annulus in order to determine leakage in the casing, tubing or packer.

(14) Prior to the commencement of injection operations into the E. C. Hill "B" Federal Well No. 6, the Blinbry perforated interval from 5,316 feet to 5,781 feet should be effectively isolated by cement squeeze.

(15) Prior to the commencement of injection operations into the E. C. Hill "D" Federal Well No. 1, the Abo perforated interval from 6,638 feet to 6,714 feet and 6,958 feet to 7,014 feet, and the Devonian perforated interval from 7,184 feet to 7,256 feet should be effectively isolated by cement squeeze.

(16) Subsequent to the performance of remedial cement operations on the E. C. Hill "B" Federal Well No. 6 and the E. C. Hill "D" Federal Well No. 1, and prior to the commencement of injection operations into these wells, the casing in each well should be pressure tested throughout the interval from the surface down to the proposed packer setting depth, to assure the integrity of such casing.

(17) The injection wells or pressurization system should be equipped with a pressure control device or acceptable substitute that will limit the surface injection pressure to no more than 1823 psi.

(18) The Division Director should have the authority to administratively authorize a pressure limitation in excess of the pressure limitation described above upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(19) The operator should give advance notification to the supervisor of the Hobbs District Office of the Division of the date and time of the performance of remedial cement operations, installation of injection equipment, and performance of mechanical integrity pressure tests in order that the same may be witnessed.

(20) The proposed pressure maintenance project expansion should be approved and the project should be governed by the provisions of Rule Nos. 701 through 708 of the Oil Conservation Division Rules and Regulations.

(21) The project allowable should be equal to the top unit allowable for the Teague (Simpson) Pool (275 barrels of oil per day) times the number of developed (production or injection) proration units within the project area. Unless additional producing or injection wells are drilled within the project area, the allowable should be established at 2,475 barrels of oil per day.

(22) The transfer of allowable between wells within the project area should be permitted.

(23) The injection authority granted herein for the wells described in Finding No. (4) above should terminate one year after the effective date of this order if the operator has not commenced injection operations into these wells, provided however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

(24) The applicant further requested that the pressure maintenance project expansion area be approved by the Division as a qualified "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(25) The evidence presented indicates that the pressure maintenance expansion area meets all the criteria for approval.

(26) The approved expansion area should initially comprise the S/2 NE/4 of Section 34 and the S/2 NW/4 of Section 35.

(27) To be eligible for the EOR credit, the operator must request from the Division a Certificate of Qualification prior to commencing injection operations, which certificate will specify the expansion area as described above.

(28) At such time as a positive production response occurs and within five years from the date of the Certificate of Qualification, the applicant must apply to the Division for certification of positive production response, which application shall identify the area actually benefitting from enhanced recovery operations and the specific wells operator believes are eligible for the credit. The Division may review the application administratively or set it for hearing. Based upon evidence presented, the Division will certify to the Department of Taxation and Revenue those lands and wells that are eligible for the credit.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Plains Petroleum Operating Company, is hereby authorized to expand its Hill-Caylus McKee Pressure Maintenance Project to include the S/2 NE/4 of Section 34 and the S/2 NW/4 of Section 35, both in Township 23 South, Range 37 East, NMPM, Lea County, New Mexico.

(2) The applicant is further authorized to inject into the McKee formation through the following described wells:

<u>Well Name & Number</u>	<u>Well Location</u>	<u>Injection Interval</u>	<u>Packer Depth</u>
E. C. Hill "B" Federal Well No. 6	1980' FNL & 810' FWL Unit E, Section 35	9,158'-9,332'	9,070'
E. C. Hill "D" Federal Well No. 1	2131' FNL & 660' FEL Unit H, Section 34	9,114'-9,264'	9,015'

(3) The operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

(4) The injection of water into the above-described injection wells shall be accomplished through 2 3/8 inch internally plastic-lined tubing installed in a packer set within 100 feet of the uppermost injection perforations; the casing-tubing annulus in each well shall be filled with an inert fluid and a gauge or approved leak-detection device shall be attached to the annulus in order to determine leakage in the casing, tubing or packer.

(5) Prior to the commencement of injection operations into the E. C. Hill "B" Federal Well No. 6, the Blinbry perforated interval from 5,316 feet to 5,781 feet shall be effectively isolated by cement squeeze.

(6) Prior to the commencement of injection operations into the E. C. Hill "D" Federal Well No. 1, the Abo perforated interval from 6,638 feet to 6,714 feet and 6,958 feet to 7,014 feet, and the Devonian perforated interval from 7,184 feet to 7,256 feet shall be effectively isolated by cement squeeze.

(7) Subsequent to the performance of remedial cement operations on the E. C. Hill "B" Federal Well No. 6 and the E. C. Hill "D" Federal Well No. 1, and prior to the commencement of injection operations into these wells, the casing in each well shall be pressure tested throughout the interval from the surface down to the proposed packer setting depth, to assure the integrity of such casing.

(8) The injection wells or pressurization system shall be equipped with a pressure control device or acceptable substitute that will limit the surface injection pressure to no more than 1823 psi.

(9) The Division Director shall have the authority to administratively authorize a pressure limitation in excess of the pressure limitation described above upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(10) The operator shall give advance notification to the supervisor of the Hobbs District Office of the Division of the date and time of the performance of remedial cement operations, installation of injection equipment, and performance of the mechanical integrity pressure tests in order that the same may be witnessed.

(11) The operator shall immediately notify the supervisor of the Hobbs District Office of the Division of the failure of the tubing, casing or packer in any of the injection wells, the leakage of water, oil or gas from or around any producing well, or the leakage of water, oil or gas from any plugged and abandoned well within the expansion area, and shall take such steps as may be timely and necessary to correct such failure or leakage.

(12) The operator shall conduct injection operations in accordance with Division Rule Nos. 701 through 708 and shall submit monthly progress reports in accordance with Division Rule Nos. 706 and 1115.

(13) The project allowable shall be equal to the top unit allowable for the Teague (Simpson) Pool (275 barrels of oil per day) times the number of developed (production or injection) proration units within the project area. Unless additional producing or injection wells are drilled within the project area, the allowable shall be established at 2,475 barrels of oil per day.

(14) The transfer of allowable between wells within the project area shall be permitted.

(15) The pressure maintenance project expansion area is hereby approved as an "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(16) The approved "project area" shall initially comprise the S/2 NE/4 of Section 34 and the S/2 NW/4 of Section 35, Township 23 South, Range 37 East.

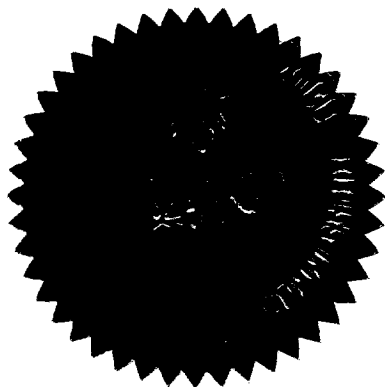
(17) To be eligible for the EOR credit, the operator must request from the Division a Certificate of Qualification prior to commencing injection operations, which certificate will specify the expansion area as described above.

(18) At such time as a positive production response occurs and within five years from the date of the Certificate of Qualification, the operator must apply to the Division for certification of positive production response, which application shall identify the area actually benefitting from enhanced recovery operations and the specific wells the operator believes are eligible for the credit. The Division may review the application administratively or set it for hearing. Based upon evidence presented, the Division will certify to the Department of Taxation and Revenue those lands and wells that are eligible for the credit.

(19) The injection authority granted herein for the injection wells described in Finding No. (4) shall terminate one year after the effective date of this order if the operator has not commenced injection operations into these wells, provided however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

(20) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



S E A L

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

Lori Wrotenbery
LORI WROTENBERY
Director