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

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

CASE NO. 11297
(DE NOVO)

APPLICATION OF EXXON CORPORATION FOR A WATERFLOOD PROJECT, QUALIFICATION FOR THE RECOVERED OIL TAX RATE PURSUANT TO THE "NEW MEXICO ENHANCED OIL RECOVERY ACT" FOR SAID PROJECT, AND FOR 18 NON-STANDARD OIL WELL LOCATIONS, EDDY COUNTY, NEW MEXICO.

CASE NO. 11298

APPLICATION OF EXXON CORPORATION FOR STATUTORY UNITIZATION, EDDY COUNTY, NEW MEXICO.

ORDER NO. R-10460-B

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9:00 a.m. on December 14, 1995 at Santa Fe, New Mexico, before the Oil Conservation Commission of the State of New Mexico, hereinafter referred to as the "Commission".

NOW, on this 12th day of March, 1996, the Commission, a quorum being present, having considered the testimony and the record, and being fully advised in the premises,

FINDS THAT:

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

(2) Case Nos. 11297 and 11298 were consolidated at the time of the hearing, and the record from the Examiner hearing held on June 29 and 30, 1995 was incorporated into the record without objection by any party.

(3) The applicant in Case No. 11298, Exxon Corporation ("Exxon"), seeks the statutory unitization, pursuant to the "Statutory Unitization Act," Sections 70-7-1 through 70-7-21 NMSA (1978), for the purpose of establishing a secondary recovery project, of all mineral interests in the designated and Undesignated Avalon-Delaware Pool, underlying its proposed Avalon (Delaware) Unit Area, comprising 2118.78 acres, more or less, of State, Federal, and fee lands in Eddy County, New Mexico, said unit to henceforth be known as the Avalon (Delaware) Unit Area; the applicant further seeks approval of the Unit Agreement and the Unit Operating Agreement which were submitted in evidence at the time of the hearing as applicant's Exhibit Nos. 2 and 3.

(4) In Case No. 11297, Exxon seeks authority to:

(a) institute a waterflood project in its proposed Avalon (Delaware) Unit Area by the injection of water into the designated and Undesignated Avalon-Delaware Pool through 18 new wells to be drilled as injection wells and one well to be converted from a producing oil well to an injection well;

(b) qualify the project for the recovered oil tax rate pursuant to the "New Mexico Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5); and

(c) drill 18 new producing wells throughout the project area at locations considered to be unorthodox.

(5) The applicant proposes that the unit comprise the following described area in Eddy County, New Mexico:

Township 20 South, Range 27 East, NMPM
Section 25: E½E½
Section 26: E½E½

Township 20 South, Range 28 East, NMPM
Section 29: SW¼SW¼
Section 30: Lots 1-4, E½W½, SW¼NE¼, SE¼
Section 31: Lots 1-4, E½W½, E½ (All)
Section 32: SW¼NE¼, W½, W½SE¼

Township 21 South, Range 27 East, NMPM

Section 4: Lot 4
Section 5: Lots 1 and 2
Section 6: Lots 1 and 2

(6) The proposed Unit Area includes portions of the designated and Undesignated Avalon-Delaware Pool. The pool was discovered in 1983, and no development wells have been drilled in the pool since 1985. The horizontal and vertical limits of the Unit Area have been reasonably defined by development.

(7) The proposed "unitized formation" is that interval underlying the Unit Area described as the Delaware Mountain Group, extending from 100 feet above the base of the Goat Seep Reef to the top of the Bone Spring formation and including, but not limited to, the Cherry Canyon and Brushy Canyon Formations, as identified by the Compensated Neutron/Lithodensity/Gamma Ray Log dated September 14, 1990 run in the Exxon Corporation Yates "C" Federal Well No. 36, located 1305 feet from the North and East lines of Section 31, Township 20 South, Range 28 East, NMPM, Eddy County, New Mexico, with the top of the unitized formation being found in said well at a depth of 2,378 feet below the surface (869 feet above sea level) and the base of the unitized formation being found at a depth of 4,880 feet below the surface (1,633 feet below sea level), or stratigraphic equivalents thereof.

(8) The proposed Unit Area contains twelve separate tracts of land, the working interests in which are owned by forty-three different persons. Prior to October 1, 1995, Exxon operated five of the twelve tracts, five tracts were operated by Yates Petroleum Corporation ("Yates"), one tract was operated by Premier Oil & Gas, Inc. ("Premier"), and one tract was operated by MWJ Producing Company. There are twenty-four royalty and overriding royalty interest owners in the Unit Area.

(9) At the time of the hearing, the owners of 98.66% of the working interest, and the owners of over 98% of the royalty and overriding interest, had voluntarily joined the Unit. The 98% royalty owner approval includes the U.S. Bureau of Land Management and the Commissioner of Public Lands, who are the two largest royalty owners in the unit. The participation formula, proposed by Exxon and Yates and approved by all parties except Premier, is as follows:

25% remaining primary reserves as of 1/1/93;
50% waterflood reserves; and
25% tertiary reserves.

(10) The applicant has conducted negotiations with interest owners within the Unit Area for over four years. Therefore, the applicant has made a good faith effort to secure voluntary unitization within the above-described Unit Area.

(11) All interested parties who have not agreed to unitization were notified of the hearing by applicant. At the hearing on these matters, Yates entered its appearance and presented evidence in support of the applications. Unit Petroleum Company made a statement in support of the applications. At the examiner hearing on these matters, MWJ Producing Company made a statement in support of the applications.

(12) Premier, the working interest owner of Tract 6 of the unit, comprising the E/2 E/2 of Section 25, Township 20 South, Range 27 East, NMPM, entered an appearance and presented evidence in opposition to the application, and requested that Tract 6 be deleted from the Unit Area. In the alternative, Premier requested that the following participation formula be adopted by the Commission:

50% original oil in place;
10% 1/1/93 producing rate;
20% remaining primary; and
20% future production.

Premier did not propose the above formula until December 13, 1995, the day before the hearing. No interest owner has approved this formula.

(13) Exxon is the largest working interest owner in the proposed Unit Area with 61 percent of the unit acreage and approximately 80% of current production. A substantial majority of working interest acreage owners, excluding Exxon, requested that Exxon prepare a technical report of the Avalon-Delaware Pool. Exxon prepared the "Report of the Technical Committee for the Working Interest Owners" (Exxon Exhibit 10, Volumes I and II; hereafter, the "Technical Report") at its own expense which according to testimony, cost Exxon approximately $500,000.

(14) The applicant proposes to institute a waterflood project at an expected initial cost of $14,400,000 for the secondary recovery of oil and associated gas, condensate, and all associated liquefiable hydrocarbons within and to be produced from the proposed Unit Area (being the subject of Case No. 11297). The estimated reserves recoverable from the waterflood project are 8.2 million barrels of oil.

(15) The Unit also has potential as a tertiary (CO_2 injection) project. Evidence presented at the hearing shows that:

(a) estimated recoverable tertiary reserves are 39.9 million barrels of oil;

(b) if such a CO_2 flood is instituted in the proposed Unit Area, it will likely be the first CO_2 project in the area and could facilitate other CO_2 floods;

(c) this project will provide valuable data which could justify additional waterflood projects and tertiary projects in other Delaware pools in New Mexico;

(d) institution of the CO_2 flood depends upon waterflood performance, results of future CO_2 injectivity tests, and perception of future oil prices. A minimum of 3 years of water injection would probably be required to repressure the reservoir prior to commencing a CO_2 injection project;

(e) the risk associated with a successful CO_2 flood in the Avalon Delaware Field is significantly higher than risk associated with the proposed waterflood because CO_2 technology is relatively new to Delaware Sand Fields and there is less data available; and

(f) CO_2 injection in the Delaware is of major importance to the State because primary and secondary recovery in the Delaware amounts to less than 10% of the original oil-in-place. CO_2 could greatly increase the recovery factor. A successful CO_2 project would serve as a catalyst for others in New Mexico.

(16) At issue are the various factors which form the basis for the participation formula which in turn governs the relative ownership of future oil and gas produced from the unit.

(17) Exxon presented evidence that:

(a) the pay in the Avalon Field is Upper Cherry Canyon and Upper Brushy Canyon Sands. There is no Bell Canyon Sand present;

(b) Exxon's geologic model was calibrated by actual production and verified by a reservoir simulation program;

(c) Exxon's geological pick of the base of the Upper Cherry reservoir is consistent with regional geologic markers found throughout the Avalon-Delaware Pool (Exxon Exhibits 16, 19a, and 19b);

(d) the waterflood project area includes 1088.50 acres in the center of the Unit Area. The outer or "fringe" tracts were included in the Unit Area based upon their CO_2 flood potential and not their waterflood potential. The "fringe" tracts will participate in production from inception of the Unit due to their CO_2 potential and the agreement to a single stage formula;

(e) a well critical to both sides' interpretation is the Premier's FV3 Well which produced 5100 barrels of oil prior to ceasing production. The nearest geologically analogous well to the FV3 Well, the Yates Citadel ZG1 Well, located in the NE/4 NE/4 of Section 36, Township 20 South, Range 27 East (Unit Tract 7), immediately to the South of the FV3 Well, produces from an interval similar to the FV3 Well, and is expected to produce equivalent amounts of oil (6000 barrels of primary oil);

(f) Premier claimed that the FV3 Well suffered completion problems, but Exxon claimed that completion problems were highly unlikely and that production is in line with Gulf's initial expectations;

(g) the Technical Report and the Unit Agreement attribute no remaining primary or waterflood reserves to Tract 6, operated by Premier. Primary production data from the Yates Citadel ZG1 Well, and other offset wells, support the Technical Report's estimate of primary and waterflood reserves in Unit Tract 6;

(h) Premier's engineering consultant stated that Tract 6 was not given credit for waterflood target "reserves" (referencing Technical Report Exhibit E-6). However, Technical Report Exhibit E-6 does not set forth "reserves," but rather "waterflood target oil-in-place." "Target oil-in-place" is a volumetric value used as a starting point in calculating recoverable reserves, on which equity is based. In order to obtain recoverable reserves, the "target oil-in-place" must be adjusted by factors such as well-to-well continuity, sweep efficiency, floodable oil, pattern effects, and development costs. This was done on all tracts, including Premier's Tract 6;

(i) The inclusion of Tract 6 in the Unit will enhance CO_2 flood sweep efficiency. Conversely, omitting Tract 6 from the Unit, as Premier advocated will diminish CO_2 flood sweep efficiency in that area of the Unit resulting in waste.

(j) the unit boundary has not changed since 1991.

(18) Yates presented evidence that:

(a) deleting Tract 6 from the Unit would substantially reduce recoverable tertiary reserves under Tracts 3, 5, and 7, which are adjacent to Tract 6;

(b) deletion of Tract 6 from the Unit will decrease the amount of oil produced from the Unit by approximately 2,000,000 barrels, thus causing loss of royalties and severance taxes to the State;

(c) Yates' geologist had done independent work which confirmed Exxon's geologic interpretation in the area contested by Premier;

(d) in June 1994 the working interest owners considered excluding Tract 6 from the Unit, but never agreed to do so. However, Premier thought that they were excluded;

(e) moving the proposed western CO_2 injection wells further west, as advocated by Premier, will diminish the CO_2 sweep efficiency on Unit Tracts 3 and 5; and

(f) negotiations over the equity formula in the Unit Agreement lasted approximately one year. Deleting Tract 6 from the Unit Area would require additional negotiations among working interest owners, revision of unit documents, and other delays. Yates' witness testified that if Tract 6 is deleted, unitization may never occur.

(19) Premier presented evidence that:

(a) Tract 6 has substantial primary and waterflood reserves which were not properly evaluated when participation percentages were formulated. Premier's claim is based upon "oil-in-place" log calculations which excludes recovery efficiency. The only Delaware completion on Tract 6, the FV3 Well, produced only 5100 barrels of oil (the analogous offset well, the Yates Citadel ZG1 Well, will produce an estimated 6000 barrels of oil);

(b) Premier's FV3 Well was drilled and completed by Gulf in 1984, and purchased by Premier in 1990. The interval below the Exxon pick of the base of the Upper Cherry Canyon reservoir is claimed by Premier to be productive in the FV3 Well. Premier's geologist utilizing detailed mapping techniques has made different "picks" in the FV3 Well resulting in an additional 82 feet of net pay which, based upon log analysis, would increase Premier's Unit participation percentage;

(c) Gulf improperly drilled and completed the FV3 Well. They used a fresh water mud which tends to swell clays within the Delaware Sand, thus creating damage and reduced productivity. The acid job channeled 50 feet above the top of their perforations and the frac job further extended the channel behind pipe because of its high pumping rate;

(d) Exxon proposes to include a column of 40-acre tracts including four 40-acre tracts (Tract 6) operated by Premier within the western boundary of the Avalon Unit but does not intend to attempt to recover from those tracts any remaining primary oil, any workover oil or any secondary oil by waterflooding;

(e) Premier's's hydrocarbon pore volume map shows that there is substantial recoverable oil remaining under Premier's Tract 6.

(f) the Exxon - Yates participation formula is flawed because it failed to allocate total unit waterflood and CO_2 reserves equitably among the tracts;

(g) the best formula is Premier's proposed participation formula which distributes equity based upon the following:

50% original oil in place;
10% 1/93 rate;
20% remaining primary and
20% future production

(h) the Premier geology is correct and their participation formula is fair because:

(i) it uses more traditional parameters like those adopted for Parkway Delaware Unit while the Exxon proposal does not;

(ii) it allocates the total unit future oil production equitably among the tracts while the Exxon participation formula is flawed because it fails to do so.

(20) Based upon the foregoing, the Commission concludes that:

(a) Premier's claim of an additional 82 feet of "pay" is refuted by their own workover attempt in October, 1995. Their workover of the FV3 Well in what they considered to be "pay not accounted for in the Unit participation formula", resulted in 6 to 7 barrels of oil and 300 barrels of water per day, which is uneconomic. This section overlies the disputed 82 feet of additional pay, but both zones correlate with uneconomic production from the Yates Citdel ZG "Stat" No. 1, the south offset to this well;

(b) Premier's arguments and proposed participation formula is limited to oil-in-place calculations. The oil-in-place is a log calculation which may or may not be producible. Equal value was given to potential CO_2 reserves compared to primary and secondary recoveries which are far less risky operations.

(c) the geological interpretation of Premier's was a more believable and scientifically sound interpretation. Unfortunately, for Premier, the production results show the additional potential pay to be uneconomic;

(d) Premier has had five years to test the Delaware potential on their marginally economic lease. They have failed to prove additional recoverable reserves, leaving only the risky potential of CO_2 flooding;

(e) Premier did not present their proposal to Exxon in a timely manner, although they were afforded the opportunity from the beginning to do so. Premier did not carry out their responsibilities, by delaying involvement in negotiations. They benefited from Yates' efforts at negotiation, but did not contribute to the process. An estimated six to twenty-four months would be required to re-negotiate a new unitization formula. Such a delay constitutes waste;

(f) the correlative rights of all interest owners are protected by the Exxon Unit participation formula. It is not the Commission's responsibility to change a formula which was the product of negotiation if that formula is "fair". That is not to say that other formulas, derived as a result of negotiations would not be "fair" because there is no one perfect formula. Premier will benefit by receiving income from the start even though their tract is uneconomic today. However, CO_2 "potential" earns Premier the right according to Exxon's formula to receive income from the start of unit operation;

(g) Premier protests the division of its property for the formation of the unit, but no convincing alternative was presented to demonstrate that the ultimate recovery of reserves would result from such proposed division. Excluding Premier's tract would in fact delay unitization and disrupt the orderly development of a CO_2 flood.

(21) The proposed unitized method of operation as applied to the Avalon (Delaware) Unit is feasible and will result with reasonable probability in the recovery of substantially more oil and gas from the unitized portion of the Avalon-Delaware Pool than would otherwise be recovered without unitization.

(22) Such unitization and adoption of applicant's proposed unitized method of operation will benefit the working interest owners and royalty owners of the oil and gas rights within the Avalon (Delaware) Unit Area.

(23) The granting of the applications in these cases will have no adverse effect upon the interest owners in the Avalon-Delaware Pool.

(24) The estimated additional costs of such operations will not exceed the estimated value of the additional oil so recovered.

(25) The applicant's Exhibit Nos. 2 and 3 in this case, being the Unit Agreement and the Unit Operating Agreement, should be incorporated by reference into this order.

(26) The unitized management, operation and further development of the Avalon (Delaware) Unit Area, as proposed, is necessary to effectively increase the ultimate recovery of oil and gas from the unitized portion of the Avalon-Delaware Pool.

(27) The Avalon (Delaware) Unit Agreement and the Avalon (Delaware) Unit Operating Agreement provide for unitization and unit operation of the Avalon (Delaware) Unit Area upon terms and conditions that are fair, reasonable and equitable, and include:

(a) a participation formula which will result in fair, reasonable and equitable allocation to the separately owned tracts of the Unit Area of all oil and gas that is produced from the Unit Area and which is saved, being the production that is (i) not used in the conduct of unit operations, or (ii) unavoidably lost;

(b) a provision for the credits and charges to be made in the adjustment among the owners in the Unit Area for their respective investments in wells, tanks, pumps, machinery, materials and equipment contributed to unit operations;

(c) a provision governing how the costs of unit operations including capital investments shall be determined and charged to the separately-owned tracts and how said costs shall be paid, including a provision providing when, how and by whom such costs shall be charged to each owner, or the interest of such owner, and how his interest may be sold and the proceeds applied to the payment of his costs;

(d) a provision for carrying any working interest owner on a limited or carried basis payable out of production, upon terms and conditions which are just and reasonable, and which allow an appropriate charge for interest for such service payable out of production, upon such terms and conditions determined by the Commission to be just and reasonable;

(e) a provision designating the Unit Operator and providing for supervision and conduct of the unit operations, including the selection, removal and substitution of an operator from among the working interest owners to conduct the unit operations;

(f) a provision for a voting procedure for decisions on matters to be decided by the working interest owners in respect to which each working interest owner shall have a voting interest equal to his unit participation; and

(g) a provision specifying the time when unit operations shall commence and the manner in which, and the circumstances under which, the operations shall terminate and for the settlement of accounts upon such termination.

(28) The applicant requested that a 200 percent penalty of cost incurred be assessed against those working interest owners who do not voluntarily agree to join the proposed unit.

(29) Section 70-7-7.F NMSA (1978) provides that the unit plan of operation shall include a provision for carrying any working interest owner subject to limitations set forth in the statute, and any non-consenting working interest owner so carried shall be deemed to have relinquished to the unit operator all of his operating rights and working interest in and to the unit until his share of the costs has been repaid plus an amount not to exceed 200 percent thereof as a non-consent penalty.

(30) The Unit Operating Agreement contains a provision whereby any working interest owner who elects not to pay his share of unit expense shall be liable for his share of such unit expense plus an additional 200 percent thereof as a non-consent penalty, and that such costs and non-consent penalty may be recovered from each non-consenting working interest owner's share of unit production.

(31) A non-consent penalty of 200 percent should be adopted in this case. The applicant should be authorized to recover from unit production each non-consenting working interest owner's share of unit expense plus 200 percent thereof as provided in the Unit Operating Agreement.

(32) The statutory unitization of the Avalon (Delaware) Unit Area is in conformity with the above findings, and will prevent waste and protect the correlative rights of all interest owners within the proposed Unit Area, and should be approved.

(33) The proposed Avalon (Delaware) Unit Area contains undeveloped acreage and acreage that will not be part of the initial waterflood project. Therefore, in compliance with Division General Rule 701.G(3), the initial waterflood project area for allowable and tax credit purposes should be reduced to include the following described 1088.50 acres in Eddy County, New Mexico:

Township 20 South, Range 28 East, NMPM
Section 30: Lots 1 through 4, SE¼NW¼, E½SW¼, and S½SE¼
Section 31: Lots 1 through 3, NE¼, E½NW¼, NE¼SW¼, N½SE¼, and SE¼SE¼
Section 32: W½NW¼, N½SW¼, and SW¼SW¼

(34) Exhibit "A", attached hereto and made a part hereof, lists the 19 proposed injection wells (18 of which are to be new drills and one of which is to be a conversion) for the initial waterflood project. It is the applicant's intent to drill the 18 new wells and initially complete them first as oil producing wells and eventually convert them to water injectors. Approval of the unorthodox locations is necessary for "start-up" of said waterflood project.

(35) The waterflood pattern to be utilized initially is to be a 40-acre inverted five-spot comprising the 19 aforementioned water injection wells and 27 producing wells.

(36) The present Delaware oil producing wells within the subject project area and interval are in an advanced state of depletion and should therefore be properly classified as "stripper wells."

(37) The operator of the proposed Avalon (Delaware) Unit Waterflood Project should take all steps necessary to ensure that the injected water enters and remains confined to only the proposed injection interval and is not permitted to escape from that interval and migrate into other formations, producing intervals, pools, or onto the surface from injection, production, or plugged and abandoned wells.

(38) Injection should be accomplished through lined or otherwise corrosion-resistant tubing installed in a packer set within 500 feet of the uppermost injection perforation; the casing-tubing annulus in each well should be filled with an inert fluid and equipped with an approved gauge or leak-detection device. The supervisor of the Artesia District Office of the Division may authorize the setting of the casing-tubing isolation device at a shallower depth if appropriate.

(39) Prior to commencing injection operations, each injection well should be pressure tested throughout the interval from the surface down to the proposed upper-most perforation to assure mechanical integrity of each well.

(40) The injection wells or pressurization system for each well should be so equipped as to limit injection pressure at the wellhead to no more than 490 psi; however, the Division Director should have the authority to administratively authorize a pressure increase upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(41) The operator should give advance notification to the supervisor of the Artesia District Office of the Division of the date and time of the installation of injection equipment and of the mechanical integrity pressure-tests in order that the same may be witnessed.

(42) The proposed waterflood project 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.

(43) The applicant further requests that the subject waterflood project be approved by the Division as a qualified Enhanced Oil Recovery Project ("EOR") pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Section 1 through 5).

(44) The evidence presented indicates that the subject waterflood project meets all the criteria for approval.

(45) The approved "project area" should initially comprise that area described in Finding Paragraph No. (33) above.

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

(47) 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 a positive production response, which application shall identify the area actually benefitting from enhanced recovery operations, and identifying the specific wells which 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 which are eligible for the credit.

(48) The injection authority granted herein for the proposed injection wells should terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject wells, provided, however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

(49) Division Order No. R-10460, entered September 18, 1995, approved statutory unitization, and unitization became effective October 1, 1995.

IT IS THEREFORE ORDERED THAT:

(1) The application of Exxon Corporation for the Avalon (Delaware) Unit, covering 2118.78 acres, more or less, of State, Federal, and fee lands in the Avalon-Delaware Pool, Eddy County, New Mexico, is hereby approved for statutory unitization pursuant to the "Statutory Unitization Act," Section 70-7-1 through 70-7-21 NMSA (1978).

(2) The Avalon (Delaware) Unit Agreement and the Avalon (Delaware) Unit Operating Agreement, which were submitted to the Commission at the time of the hearing as Exhibits 2 and 3, are hereby incorporated by reference into this order.

(3) The lands herein designated the Avalon (Delaware) Unit Area shall comprise the following described acreage in Eddy County, New Mexico:

Township 20 South, Range 27 East, NMPM
Section 25: E½E½
Section 36: E½E½

Township 20 South, Range 28 East, NMPM
Section 29: SW¼SW¼
Section 30: Lots 1-4, E½W½, SW¼NE¼, SE¼
Section 31: Lots 1-4, E½W½, E½ (All)
Section 32: SW¼NE¼, W½, W½SE¼

Township 21 South, Range 27 East, NMPM
Section 4: Lot 4
Section 5: Lots 1 and 2
Section 6: Lots 1 and 2

(4) The vertical limits or "unitized formation" of the unitized area shall include that interval underlying the Unit Area described as the Delaware Mountain Group, extending from 100 feet above the base of the Goat Seep Reef to the top of the Bone Spring formation and including, but not limited to, the Cherry Canyon and Brushy Canyon Formations, as identified on the Compensated Neutron/Lithodensity/Gamma Ray Log dated September 14, 1990 run in the Exxon Corporation Yates "C" Federal Well No. 36, located 1305 feet from the North and East lines of Section 31, Township 20 South, Range 28 East, NMPM, Eddy County, New Mexico, with the top of the unitized formation being found in said well at a depth of 2,378 feet below the surface (869 feet above sea level) and the base of the unitized formation being found at a depth of 4,880 feet below the surface (1,633 feet below sea level), or stratigraphic equivalents thereof.

(5) Since the persons owning the required statutory minimum percentage of interest in the Unit Area have approved, ratified, or indicated their preliminary approval of the Unit Agreement and the Unit Operating Agreement, the interests of all persons within the Unit Area are hereby unitized whether or not such persons have approved the Unit Agreement or the Unit Operating Agreement in writing.

(6) The applicant, hereby designated as Unit Operator, shall notify in writing the Division Director of any removal or substitution of said Unit Operator by any other working interest owner within the Unit Area.

(7) A non-consent penalty of 200 percent is hereby adopted in this case. The unit operator shall be authorized to recover from unit production each non-consenting working interest owner's share of unit expense plus 200 percent thereof as provided in the Unit Operating Agreement.

IT IS FURTHER ORDERED THAT:

(8) Exxon is hereby authorized to institute a waterflood project in its Avalon (Delaware) Unit Area by the injection of water into the designated and Undesignated Avalon-Delaware pool, as found in that stratigraphic interval between 2378 feet to 4880 feet and identified by the Compensated Neutron/Lithodensity/Gamma Ray Log dated September 14, 1990 run in the Exxon Corporation Yates "C" Federal Well No. 36, located 1305 feet from the North and East lines (Unit A) of Section 31, Township 20 South, Range 28 East, NMPM, Eddy County, New Mexico. Injection will be through nineteen wells described in Exhibit "A" attached hereto and made a part hereof.

(9) In compliance with Division General Rule 701.G(3), the initial waterflood project area, for allowable and tax credit purposes, shall comprise the following described 1088.50 acres in Eddy County, New Mexico:

Township 20 South, Range 28 East, NMPM

Section 30: Lots 1 through 4, SE¼NW¼, E½SW¼, and S½SE¼
Section 31: Lots 1 through 3, NE¼, E½NW¼, NE¼SW¼, N½SE¼, and SE¼SE¼
Section 32: W½NW¼, N½SW¼, and SW¼SW¼

(10) The applicant must take all steps necessary to ensure that the injected water only enters and remains confined to 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.

IT IS FURTHER ORDERED THAT:

(11) Injection shall be accomplished through lined or otherwise corrosion-resistant tubing installed in a packer set within 500 feet of the uppermost injection perforation; the casing-tubing annulus in each well shall be filed with an inert fluid and equipped with an approved gauge or leak-detection device. The supervisor of the Artesia District Office of the Division can authorize the setting of the casing-tubing isolation device at a shallower depth if appropriate.

(12) The 19 water injection wells or pressurization system shall be initially equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than 490 psi.

(13) The Division Director shall have the authority to administratively authorize a pressure limitation in excess of the 490 psi herein authorized upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(14) Prior to commencing injection operations, each injection well shall be pressure tested throughout the interval from the surface down to the proposed upper most perforation to assure mechanical integrity of each well.

(15) The operator shall give advance notification to the supervisor of the Artesia District Office of the Division of the date and time of the installation of injection equipment and of the mechanical integrity pressure-test in order that the same may be witnessed.

(16) The applicant shall immediately notify the supervisor of the Artesia District Office of the Division of the failure of the tubing, casing or seal bore assembly in any of the injection wells, the leakage of water or oil from or around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area, and shall take such steps as may be timely and necessary to correct such failure or leakage.

(17) The applicant 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.

FURTHERMORE:

(18) The subject waterflood project is hereby approved as an Enhanced Oil Recovery Project ("EOR") pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(19) The approved "project area" shall initially comprise that area described in Decretory Paragraph No. (9) above.

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

(21) 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 a positive production response, which application shall identify the area actually benefitting from enhanced recovery operations, and identifying the specific wells which 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 which are eligible for the credit.

(22) The injection authority granted herein for the proposed injection wells shall terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject wells, provided, however, the Division, upon written request by the operator, may grant an extension thereof for good cause shown.

FURTHERMORE:

(23) The applicant is authorized to drill the first eighteen wells listed on Exhibit "A" attached thereto. The applicant may complete the wells as producers and later convert them to injection.

(24) Division Order No. R-10460 is hereby affirmed.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JAMI BAILEY, Member

WILLIAM W. WEISS, Member

WILLIAM J. LEMAY, Chairman

S E A L

EXHIBIT "A"

CASE NO. 11297
ORDER NO. R-10460-B

EXXON CORPORATION
PROPOSED WATER INJECTION WELLS/UNORTHODOX OIL WELL LOCATIONS
AVALON (DELAWARE) UNIT WATERFLOOD PROJECT AREA

TOWNSHIP 20 SOUTH, RANGE 28 EAST, NMPM,
EDDY COUNTY, NEW MEXICO

WELL NO.	ORIGINALLY PROPOSED LOCATION	SECTION	ACTUAL STAKED LOCATION	PROPOSED PERFORATED INTERVAL FEET
1212	1668' FNL & 1455' FWL	30	1665' FNL & 1452' FWL	2486 - 4817
1412	2310' FSL & 1485' FWL	30	2301' FSL &1485' FWL	2509 - 4832
1612	992' FSL & 1489' FWL	30	1152' FSL & 1489' FWL	2492 - 4798
1614	1046' FSL & 2677' FWL	30	NO CHANGE	2498 - 4853
1812	183' FNL & 1397' FWL	31	101' FNL & 1355' FWL	2467 - 4774
1814	123' FNL & 2673' FEL	31	NO CHANGE	2496 - 4844
1816	46' FNL & 1402' FEL	31	43' FNL & 1458' FEL	2520 - 4902
2012	1386' FNL & 1314' FWL	31	NO CHANGE	2481 - 4800
2014	1335' FNL & 2681' FWL	31	1388' FNL & 2750' FWL	2495 - 4843
2018	1317' FNL & 97' FEL	31	1310' FNL & 97' FEL	2501 - 4924
2212	2600' FSL & 1322' FWL	31	NO CHANGE	2496 - 4817
2214	2699' FSL & 2549' FWL	31	2610' FSL & 2549' FWL	2509 - 4841

EXHIBIT "A"
PAGE TWO

WELL NO.	ORIGINALLY PROPOSED LOCATION	SECTION	ACTUAL STAKED LOCATION	PROPOSED PERFORATED INTERVAL FEET
2216	2566' FNL & 1377' FEL	31	2564' FNL & 1377' FEL	2505 - 4885
2218	2423' FSL & 78' FEL	31	2517' FSL & 78' FEL	2477 - 4918
2220	2648' FSL & 1127' FWL	32	2658' FSL & 1127' FWL	2489 - 4945
2412	1337' FSL & 1324' FWL	31	NO CHANGE	2535 - 4826
2418	1356' FSL & 99' FEL	31	NO CHANGE	2478 - 4911
2420	1323' FSL & 1107' FWL	32	1333' FSL & 1107' FWL	2479 - 4935
2016*	1305' FNL & 1305' FEL	31	NO CHANGE	2478 - 4880

*Already drilled under prior Division Order (previously designated the Exxon Corporation Yates "C" Federal No. 36).

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

CASE NO. 11297
(DE NOVO)

APPLICATION OF EXXON CORPORATION FOR A WATERFLOOD PROJECT, QUALIFICATION FOR THE RECOVERED OIL TAX RATE PURSUANT TO THE "NEW MEXICO ENHANCED OIL RECOVERY ACT" FOR SAID PROJECT, AND FOR 18 NON-STANDARD OIL WELL LOCATIONS, EDDY COUNTY, NEW MEXICO.

CASE NO. 11298
(DE NOVO)

APPLICATION OF EXXON CORPORATION FOR STATUTORY UNITIZATION, EDDY COUNTY, NEW MEXICO.

Order No. R-10460-B-1

NUNC PRO TUNC ORDER

BY THE COMMISSION:

It appearing to the Oil Conservation Commission that Order No. R-10460-B dated March 12, 1996, does not correctly state the intended order of the Commission,

IT IS THEREFORE ORDERED THAT:

(1) The reference to the footage location for Well No. 2012 in Exhibit A of said Commission Order No. R-10460-B be and the same is hereby amended to read "1336' FNL & 1314' FWL."

(2) The corrections set forth in this order be entered nunc pro tunc as of March 12, 1996.

DONE at Santa Fe, New Mexico, on this 11th day of April, 1996.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

JAMI BAILEY, Member

WILLIAM W. WEISS, Member

WILLIAM J. LEMAY, Chairman

SEAL