Texaco Exploration and Production Inc.
Permian Business Unit

500 North Loraine
Midland TX 79701

P O Box 3109
Midland TX 79702

December 22, 1999

State of New Mexico
Energy, Minerals, and Natural Resources Department
Oil Conservation Division
Attn: Mr. David Catanach
P.O. Box 2088
Santa Fe, New Mexico 87505

RE: POSTIVE PRODUCTION RESPONSE CERTIFICATION
Central Vacuum Unit
Lea County, New Mexico

Gentlemen:

Texaco Exploration and Production Inc. requests the Division's certification of a Positive Production Response at the Central Vacuum Unit (CVU). The approved project area was Certified as a Tertiary Recovery Project by Order No. R-5530-E, dated April 30, 1997, and subsequently received Certification of Enhanced Oil Recovery Project for the Recovered Oil Tax Rate on December 14, 1999 (effective July 7, 1997).

Attached is the required information associated with the application of Positive Production Response:

- Copies of Division's Approval & Certification of the Enhanced Recovery Project
- Detailed Plat of the CVU with Effected Area Highlighted
- Table of All Wells in Effected Area with Completion Dates
- Production Graphs Supporting the Positive Production Response Claim
- Table of Effected Area Monthly Production and Injection Volumes

A brief discussion in support of the request is provided. If you need additional information regarding this matter, please contact Mr. Scott C. Wehner at 915.688.2954 or e-mail to wehnesc@texaco.com.

Thank you for your timely consideration of this matter.

Sincerely,

Scott C. Wehner

SCW

Attachments

VACUUM-GRAYBURG-SAN ANDRES POOL
(Central Vacuum Unit Area Tertiary Recovery)
Lea County, New Mexico

Order No. R-5530-E, Authorizing Texaco Exploration and Production Inc. to Institute a Tertiary Recovery Project on the Central Vacuum Unit Area, Vacuum-Grayburg-San Andres Pool, Lea County, New Mexico, April 30, 1997.

Application of Texaco Exploration and Production Inc. for Amendment of Division Order No. R-5530, as Amended, to Increase Injection Pressures in its Central Vacuum Unit Pressure Maintenance Project Area, Authorize a Tertiary Recovery Project by the Injection of Carbon Dioxide and to Qualify this Project for the Recovered Oil Tax Rate Pursuant to the "Enhanced Oil Recovery Act", Lea County, New Mexico.

Case No. 11650
Order No. R-5530-E

ORDER OF THE DIVISION

BY THE DIVISION: This cause came on for hearing at 8:15 a.m. on December 19, 1996, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 30th day of April, 1997, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

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 Division Order R-5496, entered in Case No. 5970 on August 9, 1977, the Division, upon application of Texaco Inc., approved the Central Vacuum Unit, said unit comprising some 3,046 acres, more or less, of State and fee lands described as follows:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
Section 25: S/2, SE/4 NE/4
Section 36: All

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM
Section 30: All
Section 31: N/2, SW/4, SW/4 SE/4

TOWNSHIP 18 SOUTH, RANGE 34 EAST, NMPM
Section 12: N/2 NE/4

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM
Section 6: All
Section 7: NW/4, NW/4 NE/4

Exhibit No.1

(VACUUM-GRAYBURG-SAN ANDRES (CENTRAL VACUUM UNIT AREA TERTIARY RECOVERY) POOL - Cont'd.)

(3) By Order No. R-5530 entered in Case No. 6008 on September 20, 1977, the Division authorized Texaco Inc. to institute a pressure maintenance project within the aforesaid Central Vacuum Unit by the injection of water into the Grayburg and San Andre formations, Vacuum Grayburg-San Andres Pool, through fifty-five initial injection wells.

(4) The "Unitized Formation" for the Central Vacuum Unit includes the stratigraphic interval underlying the Unit Area in the Vacuum-Grayburg-San Andres Pool between the depths of 3,858 feet (plus 144 feet sub-sea) and 4,858 feet (minus 856 feet subsea) on the Welex Acoustic Velocity Log, run on November 15, 1963, in the Texaco Inc. State of New Mexico "O" (NCT-1) Well No. 23, located in Unit O of Section 36, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico (now Vacuum Glorieta West Unit Well No. 101).

(5) The applicant, Texaco Exploration and Production Inc. (Texaco) seeks:

a) to amend Division Order No. R-5530, as amended, to authorize the implementation of tertiary recovery operations within the Central Vacuum Unit Pressure Maintenance Project by the alternate injection of water and carbon dioxide and produced gases (WAG) into the Grayburg and San Andres formations;

b) authorization to increase the surface injection pressure for water in certain injection wells to 1500 psi, provided that step rate tests conducted on these wells do not indicate fracturing of the injection formation;

c) authorization to inject carbon dioxide gas at a maximum surface injection pressure of 350 psi above the maximum allowed surface water injection pressure, not to exceed 1850 psi; and,

d) to qualify the proposed tertiary recovery project for the recovered oil tax rate pursuant to the "New Mexico Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(6) The applicant proposed that the project area for the tertiary recovery project comprise some 1,550 acres, more or less, being a portion of the Central Vacuum Unit Area, described as follows:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
Section 25: S/2 S/2 SE/4, S/2 SE/4 SW/4, SE/4 SW/4 SW/4
Section 36: S/2, NE/4, E/2 NW/4, SW/4 NW/4, S/2 NW/4 NW/4, NE/4 NW/4 NW/4

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM
Section 30: S/2 S/2 SW/4, S/2 SW/4 SE/4, SW/4 SE/4 SE/4
Section 31: W/2, SW/4 SE/4, W/2 NE/4, SE/4 NE/4, S/2 NE/4 NE/4, NW/4 NE/4 NE/4

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM
Section 6: N/2 NW/4, NW/4 NE/4, SW/4 NW/4, N/2 NE/4 NE/4, SW/4 NE/4 NE/4, NW/4 SE/4 NE/4, N/2 SW/4 NE/4, N/2 SE/4 NW/4, SW/4 SE/4 NW/4, N/2 NW/4 SW/4, NW/4 NE/4 SW/4

(7) Current secondary recovery operations within the Central Vacuum Unit are summarized as follows:

Number of Producing Wells: 88
Number of Injection Wells: 86
Current Oil Production: 4,100 BOPD
Current Water Injection: 63,000 BWPD
Cumulative Oil Recovery: 77 MMSTBO
Cumulative Secondary
Oil Recovery (1977-Date): 42 MMSTBO
Current Average Water Cut: 96%

(8) According to evidence and testimony presented by the applicant, its plan of operation within the proposed tertiary recovery project includes:

a) implementing a change in the process used for the displacement of crude oil by initiating water-alternating-gas (WAG) injection (injecting water and carbon dioxide (CO_2) in alternating slugs of produced gas and CO_2 with slugs of water);

b) injecting an estimated 259 BCF of CO_2 and other produced gases and 148 million barrels of water over the life of the proposed tertiary project, which is estimated to be approximately 25 years;

c) utilizing a total of fifty-one (51) injection wells (all as shown on Exhibit "A" attached hereto) and seventy-one (71) producing wells (sixty-eight (68) existing wells and three (3) new wells proposed to be drilled) within the proposed tertiary recovery project; and,

d) injecting at sufficient pressure so as to maintain reservoir pressure at high enough levels to meet miscible pressure requirements in the reservoir.

(9) The proposed tertiary recovery project area (described in Finding No. 6 above) represents approximately 50 percent of the area contained within the Central Vacuum Unit. According to applicant's testimony, the proposed tertiary recovery project is being limited to only a portion of the Central Vacuum Unit for the following reasons:

a) the targeted area represents that portion of the Central Vacuum Unit which contains the best hydrocarbon pore volume within the Grayburg-San Andres reservoir; and,

b) the current economics of the proposed tertiary recovery project dictate that CO_2 injection should be initially limited to that portion of the Central Vacuum Unit containing sufficient hydrocarbon pore volume.

(VACUUM-GRAYBURG-SAN ANDRES (CENTRAL VACUUM UNIT AREA TERTIARY RECOVERY) POOL - Cont'd.)

(10) Applicant further testified that the proposed tertiary recovery project may be expanded in the future into other areas of the Central Vacuum Unit in the event economic considerations become more favorable.

(11) Further evidence and testimony presented by the applicant indicates that the amount of recoverable oil attributed to a positive production response from the expanded use of enhanced oil recovery technology for the proposed tertiary recovery project is an estimated 20.3 million stock tank barrels along with 23.2 BCF of hydrocarbon gas.

(12) Texaco testified that the initiation of tertiary recovery operations utilizing the methodology proposed should result in the additional recovery set forth in Finding Paragraph No. (11) above for a projected cost of approximately $345.7 million which includes field installations and upgrades, well remediation, separation and compression facilities, the purchase of CO2 and the costs associated with the recycling of injectant.

(13) The proposed tertiary recovery project is offset by the following described tertiary CO2 floods within the Vacuum Grayburg-San Andres Pool, approved respectively, by Division Order Nos. R-6856, as amended, and Order No. R-10599-B:

a) to the east is the Phillips Petroleum Company East Vacuum Grayburg-San Andres Unit Pressure Maintenance Project located in portions of Townships 17 and 18 South, Range 35 East, NMPM, East Vacuum Grayburg-San Andres Unit Area, Lea County, New Mexico. The current authorized bottomhole pressure in this project area equates to a surface injection pressure for CO2 of approximately 1850 psig; and,

b) to the west is the Phillips Petroleum Company State "35" Unit Pressure Maintenance Project which is also a CO2 tertiary recovery project underlying the N/2, E/2 SW/4, and SE/4 of Section 35, Township 17 South, Range 34 East, NMPM, State "35" Com Unit Area, Lea County, New Mexico. The authorized surface injection pressure for CO2 in this project area is 1850 psig.

(14) The evidence and testimony presented in this case indicates that it is prudent to implement the proposed tertiary recovery project within the Central Vacuum Unit at this time, and that such implementation will result in the recovery of additional oil and gas from the project area which may otherwise not be recovered, thereby preventing waste.

(15) The evidence further indicates that the oil and gas recovered as a result of implementing the proposed tertiary recovery project will be allocated to each tract within the Central Vacuum Unit on a fair and reasonable basis, thereby protecting correlative rights.

(16) The proposed tertiary recovery project should be approved.

(17) The evidence presented by Texaco indicates that the proposed tertiary recovery project meets all the criteria for certification 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).

(18) The certified "EOR Project Area" should initially comprise the area described in Finding Paragraph No. (6) above, provided however, the "EOR Project Area" eligible for the recovered oil tax rate may be contracted and reduced dependent upon the evidence presented by the applicant in its demonstration of the occurrence of a positive production response.

(19) To be eligible for the EOR tax credit, the applicant should advise the Division when CO2 (WAG) injection commences within the "EOR Project Area" and request the Division certify the subject tertiary recovery project to the New Mexico Taxation and Revenue Department.

(20) At such time as a positive production response occurs from CO2 (WAG) injection operations and within seven 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 benefiting from tertiary recovery operations. The Division may review the application administratively or set it for hearing. Based upon evidence presented, the Division will certify to the New Mexico Taxation and Revenue Department those lands and wells which are eligible for the tax credit.

(21) Division Order No. R-5530 established maximum surface injection pressures within the Central Vacuum Unit equal to 0.2 psi/ft. of depth to the uppermost injection perforation in each of the fifty-five initial injection wells, or approximately 800 psi.

(22) Throughout the course of secondary recovery operations, the maximum surface injection pressures for the injection wells within the Central Vacuum Unit have been increased upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata. Pressure increases such as described are usually based upon the results of step rate tests.

(23) The current maximum surface injection pressures within the proposed tertiary recovery project area range from approximately 872 psi to 2775 psi.

(24) With regards to the injection pressures within the proposed tertiary recovery project area, the applicant seeks:

a) authority to inject CO2 at a surface injection pressure 350 psi above the current maximum surface injection pressure for water for a given well (all as shown on applicant's Exhibit No. 12), said CO2 injection pressure not to exceed 1850 psi;

(VACUUM-GRAYBURG-SAN ANDRES (CENTRAL VACUUM UNIT AREA TERTIARY RECOVERY) POOL - Cont'd.)

b) authority to continue to conduct step rate tests and receive pressure increase authority on injection wells within the tertiary recovery project area whose current maximum surface injection pressure for water is less than 1500 psi; and,

c) authority to increase the surface injection pressure for water to 1500 psi on eight wells located within the tertiary recovery project area. which have shown no "break" or fracture on current step rate tests, (these wells having been identified on applicant's Exhibit No. 12).

(25) The evidence and testimony presented by Texaco indicates that the proposed maximum CO2 surface injection pressure of 1850 psi, or 350 psi above the current maximum surface injection pressure for water, is reasonable, necessary and should not result in the migration of injected fluid from the proposed injection interval.

(26) Texaco should be authorized to conduct step rate tests and obtain surface injection pressure increases for water within those injection wells in the tertiary recovery project area whose current maximum surface injection pressure for water is less than 1500 psi.

(27) Texaco should be required to submit current step rate tests on those eight wells described in Finding No. (24)(c) above prior to obtaining Division approval to increase the surface injection pressure for water on these wells to 1500 psi.

(28) All injection wells or the pressurization system should be initially equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than the individual well surface injection pressure authorized by this order.

(29) The applicant testified that there are no "problem wells" within the one-half mile "area of review" and further testified that all plugged and abandoned wells and all producing wells are cemented in a manner adequate to confine the injected fluid to the proposed injection interval.

(30) Texaco proposed that each of the injection wells shown on Exhibit "A" be equipped no different than previously equipped for waterflood operation.

(31) In support of this request, Texaco testified that it anticipates no additional corrosion problems within these wellbores as a result of CO2 injection.

(32) Texaco's request should be granted, provided however, the Division may require the installation of additional or upgraded wellbore tubulars and packers should it become apparent that the injection of CO2 is causing beyond normal corrosion problems.

(33) If not previously equipped, each of the injection wells shown on Exhibit "A" should be equipped with internally coated tubing installed in a packer set within 100 feet of the uppermost injection perforation or casing shoe; the casing-tubing annulus should be filled with an inert fluid; and a gauge or approved leak-detection device should be attached to the annulus in order to determined leakage in the casing, tubing or packer.

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

(35) The application 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.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Texaco Exploration and Production Inc., is hereby authorized to institute an EOR tertiary recovery project by means of combined water, carbon dioxide (CO2), and produced gas injection (WAG) in its Central Vacuum Unit Area located in portions of Townships 17 and 18 South, Ranges 34 and 35 East, NMPM, Lea County, New Mexico, by the injection of water, CO2, and produced gases into the Grayburg and San Andres formations, Vacuum-Grayburg-San Andres Pool, through the correlative gross perforated and/or open hole interval between the depths of 3,858 feet (plus 144 feet sub-sea) and 4,858 feet (minus 856 feet sub-sea) on the Welex Acoustic Velocity Log, run on November 15, 1963, in the Texaco Inc. State of New Mexico "O" (NCT-1) Well No. 23, located in Unit O of Section 36, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico (now Vacuum Glorieta West Unit Well No. 101), within each of the fifty-one injection wells shown on Exhibit "A" attached hereto.

IT IS FURTHER ORDERED THAT:

(2) Any previous injection authority not in conflict with the provisions set forth in this order shall remain in full force and effect.

(3) WAG injection operations shall be accomplished through internally coated tubing installed in a packer set within approximately 100 feet of the uppermost injection perforations or casing shoe; the casing-tubing annulus 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.

(4) For those injection wells within the "EOR Project Area" whose current maximum surface injection pressure for water is less than 1500 psi (as shown on applicant's Exhibit No. 12), the applicant is hereby authorized to inject water into each of these wells at the current maximum surface injection pressure, provided however, such pressure may be administratively increased by the Division upon a showing that such increase will not result in the fracturing of the injection formation or confining strata, and shall be further authorized to inject CO2 and produced gases at a maximum surface injection pressure of 350 psi above the current maximum surface injection pressure for water, provided however, such CO2 injection shall not occur at a surface injection pressure in excess of 1850 psi.

(5) For those injection wells within the "EOR Project Area" whose current maximum surface injection pressure for water exceeds 1500 psi (as shown on applicant's Exhibit No. 12), the applicant is hereby authorized to inject water into each of these wells at the current maximum surface injection pressure, and shall be further authorized to inject CO2 and produced gases at a maximum surface injection pressure of 1850 psi.

(VACUUM-GRAYBURG-SAN ANDRES (CENTRAL VACUUM UNIT AREA TERTIARY RECOVERY) POOL - Cont'd.)

(6) Texaco shall be required to submit current step rate tests on those eight wells described in Finding No. (24)(c) above prior to obtaining Division approval to increase the surface injection pressure for water on these wells to 1500 psi.

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

(8) The operator shall immediately notify the Supervisor of the Hobbs District Office of the Division of the failure of the casing in any of the injection wells, the leakage of water, natural gas, CO2, or oil from or around any producing well, or the leakage of water, natural gas, CO2, or oil from any plugged and abandoned well within the "EOR Project Area", and shall take such steps as may be necessary to correct such failure or leakage.

(9) The subject tertiary recovery project is hereby certified as a qualified "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(10) The certified and approved "EOR Project Area" shall include those lands described as follows, provided however, the "EOR Project Area" eligible for the recovered oil tax rate may be reduced dependent upon the evidence presented by the applicant in its demonstration of the occurrence of a positive production response.

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
Section 25: S/2 S/2 SE/4, S/2 SE/4 SW/4, SE/4 SW/4 SW/4
Section 36: S/2, NE/4, E/2 NW/4, SW/4 NW/4, S/2 NW/4 NW/4, NE/4 NW/4 NW/4

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM
Section 30: S/2 S/2 SW/4, S/2 SW/4 SE/4, SW/4 SE/4 SE/4
Section 31: W/2, SW/4 SE/4, W/2 NE/4, SE/4 NE/4, S/2 NE/4 NE/4, NW/4 NE/4 NE/4

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM
Section 6: N/2 NW/4, NW/4 NE/4, SW/4 NW/4, N/2 NE/4 N/4, SW/4, NE/4 NE/4, NW/4 SE/4 NE/4, N/2 SW/4 NE/4, N/2 SE/4 NW/4, SW/4 SE/4 NW/4, N/2 NW/4 SW/4, NW/4 NE/4 SW/4

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

(12) At such time as a positive production response occurs and within seven 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 benefiting from enhanced recovery operations. The Division may review the application administratively or set it for hearing. Based upon evidence presented, the Division will certify to the New Mexico Taxation and Revenue Department those lands and wells which are eligible for the credit.

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

(14) The subject tertiary recovery project is hereby designated the Central Vacuum Unit Tertiary Recovery Project and shall be governed by the provisions of Rules Nos. 701 through 708 of the Oil Conservation Division Rules and Regulations.

(15) Monthly progress reports of the tertiary recovery project herein authorized shall be submitted to the Division in accordance with Rules 706 and 1115 of the Division Rules and Regulations.

(16) Jurisdiction is hereby 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.

(VACUUM-GRAYBURG-SAN ANDRES (CENTRAL VACUUM UNIT AREA TERTIARY RECOVERY) POOL - Cont'd.)

EXHIBIT "A"
CASE NO. 11650
ORDER NO. R-5530-E
TEXACO EXPLORATION AND PRODUCTION INC.
CENTRAL VACUUM UNIT
TERTIARY PROJECT INJECTION WELLS

WELL NO	FOOTAGE	U	SECTION	TWNSHP	RANGE	API NUMBERS
CVU #40	42' FNL, 1247' FWL	D	36	17S	34E	30-025-25703
CVU #41	60' FNL, 2552' FWL	C	36	17S	34E	30-025-25704
CVU #42	32' FNL, 1286' FEL	A	36	17S	34E	30-025-25705
CVU #43	35' FNL, 127' FEL	A	36	17S	34E	30-025-25706
CVU #44	134' FNL, 1219' FWL	D	31	17S	35E	30-025-25719
CVU #45	121' FNL, 2475' FWL	C	31	17S	35E	30-025-25720
CVU #46	119' FNL, 1224' FEL	A	31	17S	35E	30-025-25818
CVU #55	1310' FNL, 1310' FWL	D	36	17S	34E	30-025-25721
CVU #56	1310' FNL, 2630' FWL	C	36	17S	34E	30-025-25722
CVU #57	1310' FNL, 1330' FEL	B	36	17S	34E	30-025-25723
CVU #58	1310' FNL, 132' FEL	A	36	17S	34E	30-025-25724
CVU #59	1403' FNL, 1200' FWL	E	31	17S	35E	30-025-25725
CVU #60	1310' FNL, 2535' FWL	C	31	17S	35E	30-025-25707
CVU #61	1310' FNL, 1230' FEL	A	31	17S	35E	30-025-25819
CVU #70	2630' FNL, 1310' FWL	E	36	17S	34E	30-025-25726
CVU #71	2630' FNL, 2623' FEL	G	36	17S	34E	30-025-25727
CVU #72	2630' FNL, 1330' FEL	G	36	17S	34E	30-025-25697
CVU #73	2630' FNL, 142' FEL	H	36	17S	34E	30-025-25728
CVU #74	2561' FSL, 1180' FWL	L	31	17S	35E	30-025-25729
CVU #81	1332' FSL, 1310' FWL	L	36	17S	34E	30-025-25708
CVU #82	1333' FSL, 2528' FWL	K	36	17S	34E	30-025-25730
CVU #83	1330' FSL, 1330' FEL	J	36	17S	34E	30-025-25731
CVU #84	1333' FSL, 151' FEL	I	36	17S	34E	30-025-25732
CVU #85	1336' FSL, 1201' FWL	L	31	17S	35E	30-025-25709
CVU #93	10' FSL, 1136 FWL	M	31	17S	35E	30-025-25733
CVU #94	50' FSL, 2549' FEL	O	31	17S	35E	30-025-25734
CVU #99	1408' FNL, 1211' FWL	E	6	18S	35E	30-025-25710
CVU #100	1372' FNL, 2544' FWL	F	6	18S	35E	30-025-25711
CVU #101	1410' FNL, 1336' FEL	G	6	18S	35E	30-025-25712
CVU #106	2520' FNL, 1040' FWL	E	6	18S	35E	30-025-25796
CVU #136	2450' FNL, 40' FWL	E	6	18S	35E	30-025-25997
CVU #137	1100' FNL, 40' FWL	D	6	18S	35E	30-025-25998
CVU #138	10' FSL, 70' FEL	P	36	17S	34E	30-025-25999
CVU #139	85' FSL, 958' FEL	P	36	17S	34E	30-025-26078
CVU #140	10' FSL, 2571' FWL	N	36	17S	34E	30-025-26000
CVU #141	10' FSL, 1310' FWL	M	36	17S	34E	30-025-26001
CVU #144	35' FNL, 1330' FEL	B	6	18S	35E	30-025-26788
CVU #145	1310' FSL, 2475' FWL	N	31	17S	35E	30-025-26789
CVU #146	2465' FNL, 1335' FEL	G	31	17S	35E	30-025-26790
CVU #147	1310' FNL, 200' FEL	A	31	17S	35E	30-025-26791
CVU #159	1310' FNL, 100' FWL	D	36	17S	34E	30-025-27969
CVU #160	2602' FNL, 35' FWL	E	36	17S	34E	30-025-27970
CVU #161	180' FSL 10' FWL	M	36	17S	34E	30-025-27971
CVU #193	101' FNL, 534' FWL	D	6	18S	35E	30-025-32800
CVU #194	14' FNL, 1917' FWL	C	6	18S	35E	30-025-38010
CVU #199	1372' FNL, 584' FWL	E	6	18S	35E	30-025-32804
CVU #200	1301' FNL, 1875' FWL	C	6	18S	35E	30-025-32805
CVU #201	1360' FNL, 1973' FEL	G	6	18S	35E	30-025-32806
CVU #206	2509' FNL, 536' FWL	E	6	18S	35E	30-025-32808
CVU #207	2500' FNL, 1825' FWL	F	6	18S	35E	30-025-32809
CVU #244	10' FNL, 1930' FEL	B	6	18S	35E	30-025-32810

DISCUSSION:

Following a hearing December 19, 1996 in Santa Fe, New Mexico on the matter, The Central Vacuum Unit (CVU) was Approved on April 30, 1997 as a qualified Enhanced Oil Recovery (EOR) Project pursuant to the EOR Act by Oil Conservation Division Order No. R-5530-E (**Exhibit No. 1**). Subsequent to that Order, Texaco Exploration and Production Inc. requested and received a Certificate of Qualification dated December 14, 1999 with an effective date of July 7, 1997 (**Exhibit No. 2**). As required by the Rules and Procedures set forth in Order No. R-9708, Qualifications of EOR Projects and Certification for the Recovered Oil Tax Rate, this current submittal is an Application for Certification to notify the Secretary of Taxation and Revenue Department of the Positive Production Response from the Project Area.

The detailed description of the Approved Project Area can be found in Division Order No. R-5530-E and has been graphically identified on **Exhibit No. 3**. A list of all wells within the Approved Project Area, along with completion dates is included in a Table identified as **Exhibit No. 4**. All wells in the Approved Project Area have been in existence prior to the commencement of CO_2 injection. Approximately $6.0 Million was spent on the injection and gathering systems necessary for CO_2 operations within the Approved Project Area. A completely new injection system was installed, consisting of: CO_2 lateral lines off the main delivery line; dual injectant skid-mounted headers/manifolds; dual injectant distribution lines; upgraded injection wellheads, plus downhole tubulars and packers trimmed for CO_2 service. Modifications were made at production wells as warranted to handle the increasing produced gas volumes. Production satellites required upgrading for the additional pressures and volumes expected as well an increased frequency of testing. The Approved Project Area effects 65% of the CVU wells.

Exhibit No. 5 presents a historical graph of oil production from the entire CVU since 1940—representing Primary, Secondary, and the responding Tertiary (EOR) operations. The positive production response from the Approved Project Area is even apparent at this qualitative review level of CVU. All of the Positive Production Response is a result of the introduction of CO_2 into the Approved Project Area. **Exhibit No. 6** is a graphical presentation of the production and injection since 1973 for only wells within the Approved Project Area. Although early in the project life for detailed analysis, it is apparent that the EOR response is exhibiting similar characteristics to the previous waterflooding operations (1980 vs 1999). A similar time delay in EOR response relative to the start of injection is also noted as consistent with the prior waterflood operation. **Exhibit No. 7** is a graphical subset of the most current three years of Oil and Gas production data found in the previous exhibit. This detail allows a more thorough evaluation. A best-fit trend-line through the declining waterflood production accentuates the Positive Production Response resulting from the EOR Project. The gas production is accelerating—reflecting the production of the CO_2 that is being introduced within the reservoir [Note that this dataset has a bad data point for Nov-98, which can be ignored]. This response is a classic fingerprint of CO_2 operations—gas increasing immediately ahead of the tertiary oil bank and accelerating exponentially. The EOR Project is performing extremely well. The Approved Project Area has already reached a 12% Hydrocarbon Pore Volume of CO_2 Injection resulting in the planned introduction of water cycles. This practice as approved in the original Order involves the alternating injection of water (H_2O) and CO_2—known as WAG operations. WAG operations control the volume/rate of CO_2 production and improve vertical sweep efficiency in the reservoir. This improves the

utilization of the costly CO_2 injectant. It can be seen that the current Positive Production Response will shortly be equivalent to twice the oil rate of the previous waterflooding operations within the Approved Project Area. Texaco's expectations are that the EOR production will go well beyond this level. **Exhibit No. 8** is a Table of the monthly production and injection volumes covering the same period represented in the previous exhibit. As documented here, the cumulative CO_2 injection through October 31, 1999 has been approximately 37.6 Bscf.

Central Vacuum Unit
Project Area

Well No.	API Well No.	Completion Date	Type
32	30025029440001	10/10/39	Producer
33	30025085450001	06/01/38	Producer
34	30025029410001	04/17/38	Producer
35	30025029450001	10/20/38	Producer
36	30025021110001	07/21/38	Producer
37	30025021120001	06/29/38	Producer
38	30025021070001	07/09/38	Producer
39	30025021090001	12/23/38	Producer
40	30025257030001	01/29/78	Injector
41	30025257040001	02/04/78	Injector
42	30025257050001	02/08/78	Injector
43	30025257060001	02/12/78	Injector
44	30025257190001	02/07/78	Injector
45	30025257190001	02/28/78	Injector
46	30025258180001	03/21/78	Injector
47	30025085320001	10/30/38	Producer
48	30025085340001	04/21/38	Producer
49	30025029580001	01/14/58	Producer
50	30025029590001	02/27/38	Producer
51	30025022300001	03/02/38	Producer
52	30025022310001	04/14/38	Producer
53	30025022330001	01/07/39	Producer
54	30025022320001	09/12/38	Producer
55	30025257210001	02/18/78	Injector
56	30025257220001	02/06/78	Injector
57	30025257230001	02/15/78	Injector
58	30025257240001	02/14/78	Injector
59	30025257250001	02/04/78	Injector
60	30025257070001	02/02/78	Injector
61	30025258190001	02/24/78	Injector
62	30025085310001	08/03/38	Producer
63	30025085330001	04/29/38	Producer
64	30025029530001	02/26/38	Producer
65	30025029550001	03/02/38	Producer
66	30025022360001	05/19/38	Producer
67	30025022370001	05/30/38	Producer
68	30025022390001	08/02/38	Producer
69	30025022350001	04/17/38	Producer
70	30025257260001	02/12/78	Injector
71	30025257270001	02/22/78	Injector
72	30025256970001	01/25/78	Injector
73	30025257280001	02/21/78	Injector
74	30025257290001	02/11/78	Injector
75	30025029540001	05/26/38	Producer
76	30025029570001	06/09/38	Producer
77	30025022380001	08/03/38	Producer
78	30025022400001	08/09/38	Producer
79	30025022290001	04/21/38	Producer
80	30025022340001	02/27/38	Producer
81	30025257080001	04/05/79	Injector
82	30025257300001	03/02/78	Injector
83	30025257310001	06/05/78	Injector
84	30025257320001	03/23/79	Injector
85	30025257090001	04/17/79	Injector
86	30025029560001	06/14/38	Producer
87	30025085360001	09/21/38	Producer
88	30025085350001	08/16/38	Producer
89	30025022410001	09/27/38	Producer
90	30025022440001	10/15/39	Producer
92	30025022420001	11/04/38	Producer
93	30025257330001	05/02/79	Injector
94	30025257340001	04/12/79	Injector
95	30025030880001	08/20/38	Producer
96	30025030890001	08/10/38	Producer
97	30025030760001	11/11/38	Producer
99	30025257100001	02/12/78	Injector
100	30025257110001	05/26/79	Injector
101	30025257120001	06/07/79	Injector
102	30025030900001	01/12/39	Producer
103	30025030910001	11/05/39	Producer
104	30025030780001	10/11/39	Producer
105	30025030770001	09/12/39	Producer
106	30025257960001	02/28/79	Injector
111	30025247540001	06/07/74	Producer
132	30025238010001	07/22/71	Producer
136	30025259970001	12/19/78	Injector
137	30025259980001	12/23/78	Injector
138	30025259990001	12/30/78	Injector
139	30025260780001	02/17/79	Injector
140	30025260000001	02/07/79	Injector
141	30025260010001	01/18/79	Injector
144	30025267880001	10/15/80	Injector
145	30025267890001	09/24/80	Injector
146	30025267900001	08/05/80	Injector
147	30025267900001	08/18/80	Injector
153	30025271940001	03/03/81	Producer
159	30025279690001	12/04/82	Injector
160	30025279700001	11/15/82	Injector
161	30025279710001	01/11/83	Injector
162	30025281820001	09/07/83	Producer

Exhibit No.4

Well No.	API Well No.	Completion Date	Type
167	30025337110000	01/21/97	Producer
168	30025333350001	05/23/96	Producer
169	30025297650001	12/10/86	Producer
175	30025337220000	02/12/97	Producer
176	30025333310001	05/29/96	Producer
177	30025337120000	01/11/97	Producer
178	30025333320001	04/26/96	Producer
179	30025333330001	04/04/96	Producer
186	30025327990001	03/10/95	Producer
187	30025333290001	06/17/96	Producer
188	30025333300001	06/17/96	Producer
189	30025333340001	05/28/96	Producer
193	30025328000001	03/24/95	Injector
194	30025328010001	03/18/95	Injector
195	30025328020001	03/15/95	Producer
196	30025328030001	03/09/95	Producer
197	30025327910001	02/28/95	Producer
199	30025328040001	03/24/95	Injector
200	30025328050001	04/10/95	Injector
201	30025328060001	03/30/95	Injector
203	30025328070001	03/04/95	Producer
204	30025327920001	02/19/95	Producer
206	30025328080001	04/10/95	Injector
207	30025328090001	04/25/95	Injector
242	30025301040001	03/24/88	Producer
244	30025328100001	03/19/95	Injector
253	30025301030001	03/13/88	Producer
266	30025300220001	09/28/87	Producer
290	30025311970001	07/29/91	Producer
291	30025311950001	07/30/91	Producer
302	30025300230001	11/01/87	Producer
345	30025312040001	08/03/91	Producer

Exhibit No.4

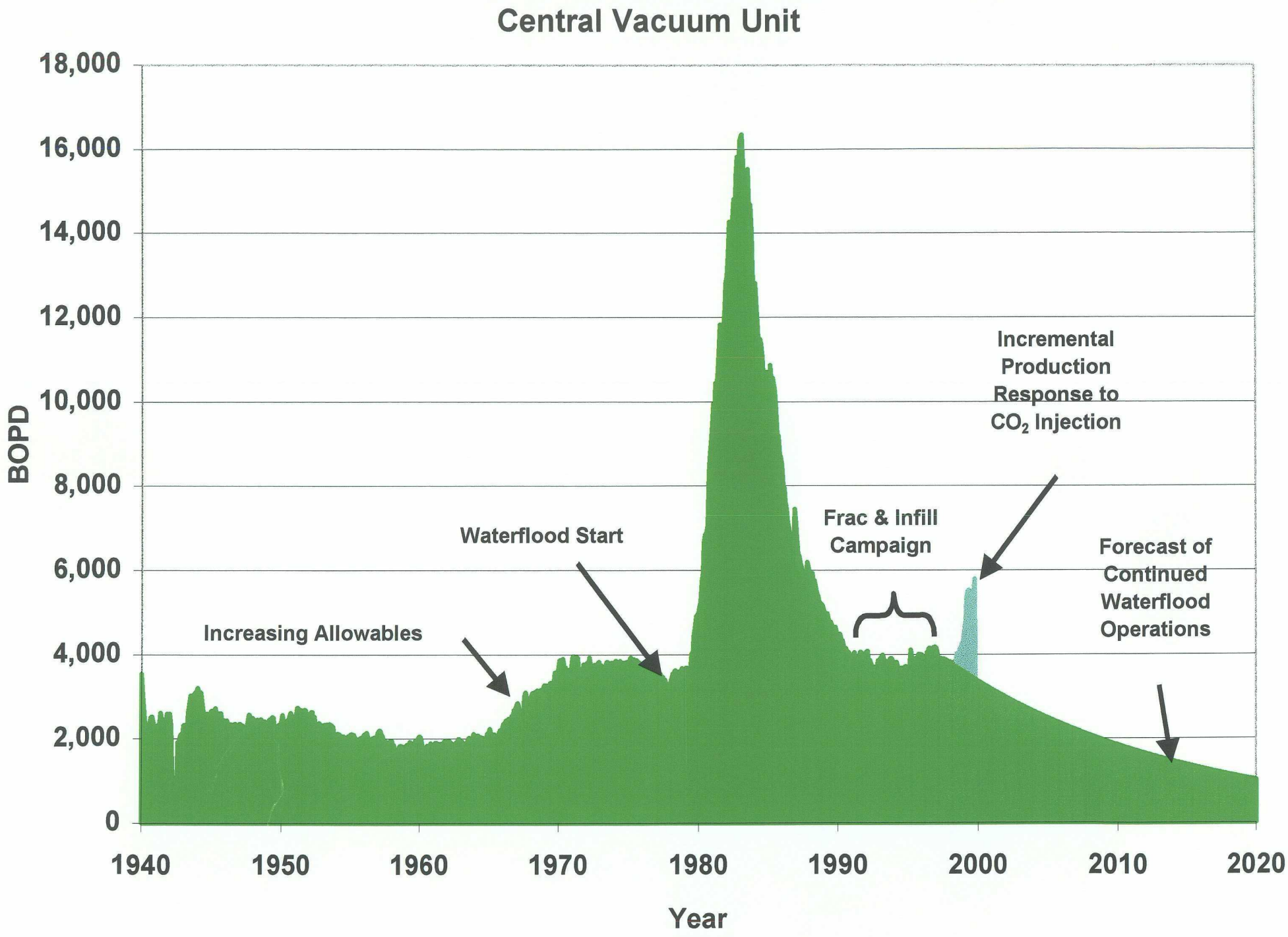
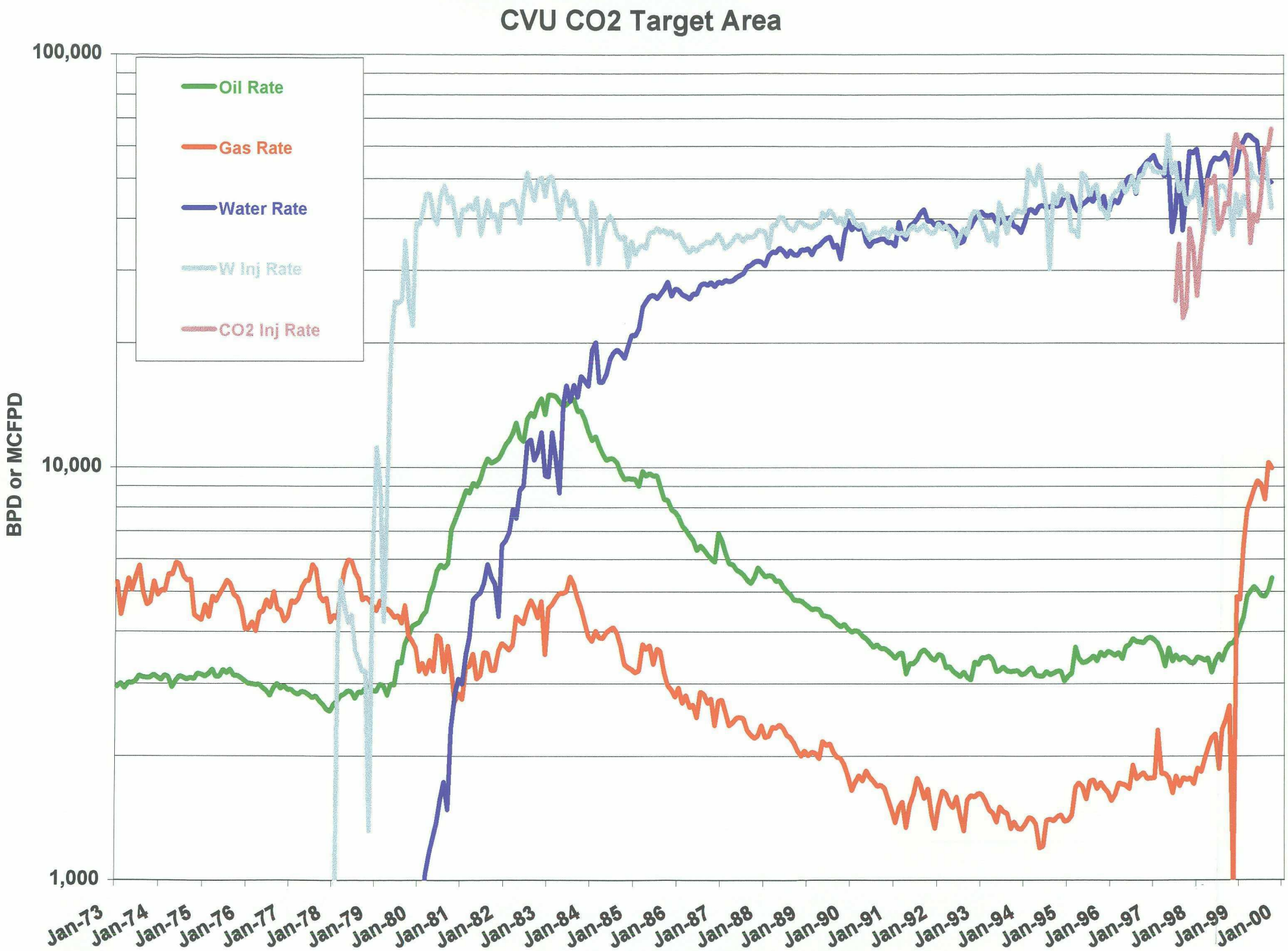

Central Vacuum Unit
18,000
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
BOPD
1940
1950
1960
1970
1980
1990
2000
2010
2020
Year
Increasing Allowables
Waterflood Start
Frac & Infill Campaign
Incremental Production Response to CO_2 Injection
Forecast of Continued Waterflood Operations

Exhibit No. 5


CVU CO2 Target Area
Oil Rate
Gas Rate
Water Rate
W Inj Rate
CO2 Inj Rate
BPD or MCFPD
100,000
10,000
1,000
Jan-73
Jan-74
Jan-75
Jan-76
Jan-77
Jan-78
Jan-79
Jan-80
Jan-81
Jan-82
Jan-83
Jan-84
Jan-85
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Jan-90
Jan-91
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00

Exhibit No. 6

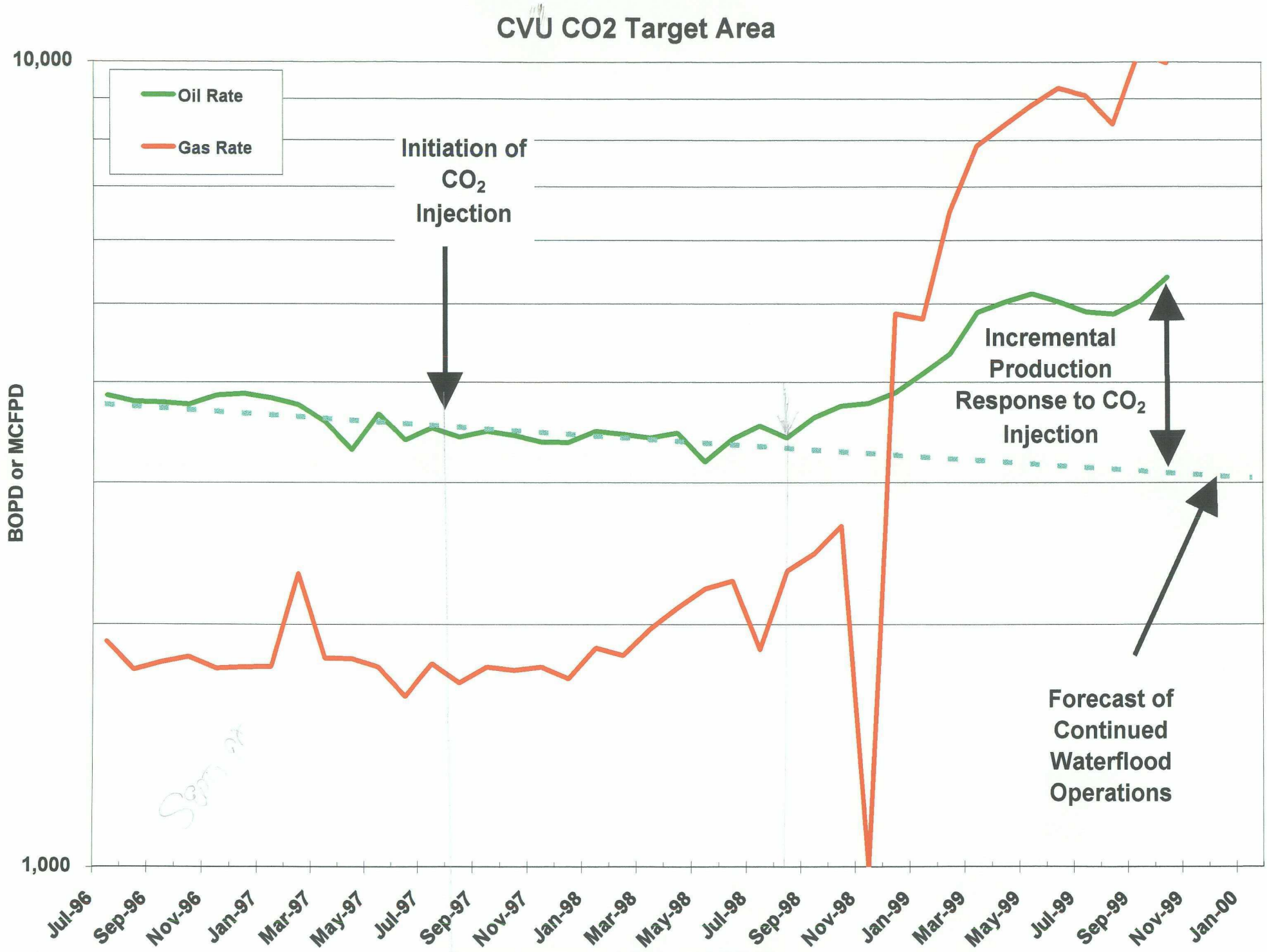

CVU CO2 Target Area
10,000
1,000
BOPD or MCFPD
Oil Rate
Gas Rate
Initiation of CO_2 Injection
Incremental Production Response to CO_2 Injection
Forecast of Continued Waterflood Operations
Jul-96
Sep-96
Nov-96
Jan-97
Mar-97
May-97
Jul-97
Sep-97
Nov-97
Jan-98
Mar-98
May-98
Jul-98
Sep-98
Nov-98
Jan-99
Mar-99
May-99
Jul-99
Sep-99
Nov-99
Jan-00

Exhibit No. 7

Monthly Production and Injection Data
CVU CO2 Target Area

Date	Oil Bbl	Gas MMscf	Water Bbl	Water Injection Bbl	CO2 Injection MMscf	Cumulative CO2 Injection MMscf
Jul-96	119,326	59	1,567,762	1,569,937	-	-
Aug-96	117,201	54	1,422,573	1,430,760	-	-
Sep-96	113,200	54	1,562,403	1,521,647	-	-
Oct-96	116,337	57	1,652,170	1,579,411	-	-
Nov-96	115,532	53	1,643,443	1,631,698	-	-
Dec-96	119,937	55	1,724,470	1,672,713	-	-
Jan-97	118,338	55	1,767,704	1,612,697	-	-
Feb-97	104,957	65	1,513,348	1,451,323	-	-
Mar-97	110,618	56	1,643,088	1,610,276	-	-
Apr-97	98,816	54	1,518,975	1,540,764	-	-
May-97	113,182	55	1,753,017	1,979,363	-	-
Jun-97	101,604	49	1,113,943	1,544,144	-	-
Jul-97	108,762	55	1,281,272	1,698,842	784	784
Aug-97	105,902	52	1,689,207	1,441,951	1,079	1,862
Sep-97	104,162	53	1,124,004	1,473,930	690	2,553
Oct-97	106,484	54	1,433,491	1,341,244	758	3,310
Nov-97	101,045	53	1,746,399	1,349,197	1,137	4,447
Dec-97	104,247	53	1,787,242	1,398,583	1,053	5,500
Jan-98	107,669	58	1,826,295	1,518,494	806	6,306
Feb-98	96,477	51	1,429,352	1,134,955	928	7,235
Mar-98	105,641	61	1,331,236	1,146,467	1,202	8,436
Apr-98	103,697	63	1,510,902	1,288,437	1,491	9,927
May-98	98,633	69	1,686,966	1,386,347	1,510	11,437
Jun-98	101,853	68	1,686,251	1,106,851	1,526	12,963
Jul-98	109,371	58	1,726,432	1,474,099	1,169	14,132
Aug-98	105,676	72	1,736,491	1,492,187	1,219	15,351
Sep-98	108,344	73	1,735,653	1,422,545	1,310	16,661
Oct-98	115,677	82	1,726,458	1,385,315	1,347	18,008
Nov-98	112,776	30	1,536,532	1,096,221	1,737	19,745
Dec-98	120,210	151	1,632,350	1,424,002	1,995	21,740
Jan-99	126,938	148	1,814,375	1,262,606	1,843	23,583
Feb-99	121,358	182	1,719,863	1,271,420	1,675	25,258
Mar-99	151,246	244	1,979,589	1,322,315	1,748	27,006
Apr-99	150,672	250	1,909,384	1,635,068	1,050	28,055
May-99	159,453	274	1,933,929	1,564,420	1,272	29,327
Jun-99	150,786	279	1,850,799	1,506,208	1,183	30,510
Jul-99	151,462	282	1,597,578	1,498,936	1,399	31,909
Aug-99	150,576	259	1,760,600	1,806,264	1,842	33,751
Sep-99	151,299	309	1,475,609	1,475,399	1,767	35,518
Oct-99	167,480	309	1,520,900	1,321,131	2,052	37,570

Exhibit No. 8

Target Area

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

August 31, 2004

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

Department of Taxation and Revenue
P.O. Box 630
Santa Fe, New Mexico 87509-0630

Attention: Ms. Jan Goodwin, Secretary

Re: Notice of Additional Producing Wells
ChevronTexaco Exploration & Production
Central Vacuum Unit Tertiary Recovery Project

Dear Secretary Goodwin:

Please be advised that ChevronTexaco Exploration & Production, operator of the Central Vacuum Unit Tertiary Recovery Project, has drilled the following additional producing wells within the project area:

Well Name & Number	API Number	Well Location
Central Vacuum Unit No. 163H	30-025-36342	Unit H, Section 31, T-17S, R-35E
Central Vacuum Unit No. 264H	30-025-35628	Unit F, Section 31, T-17S, R-34E

The Division has determined that these wells, which are producing from the Vacuum Grayburg-San Andres Pool, are eligible for the recovered oil tax rate effective on the date of first production.

If additional information is required, please advise.

Sincerely,

Mark E. Fesmire by DRC

Mark E. Fesmire, P.E.
Director

MEF/drc

Xc: File-EOR-37
ChevronTexaco Exploration & Production

ChevronTexaco
MidContinent Business Unit
15 Smith Road
Midland, Texas 79705

Tel 432 687 7114
Fax 432 687 7871
mreeves@chevrontexaco.com

Mike Reeves
Technical Assistant

ChevronTexaco

July 21, 2004

EOR Updates to the Central Vacuum Unit
Order # R -5530 –E
Addition of wells:
CVU # 163H, API #30-025-36342
CVU # 264H, API #30-025-35628
Vacuum Field
Lea County, NM

163 - H-31-17S-35E
E-31-17S-35E

State of New Mexico
Oil Conservation Division
New Mexico Department of
Energy, Minerals, and Natural Resources
1220 South St. Francis Dr.
Santa Fe, NM 87505

Attn. - Mr. David Catanach

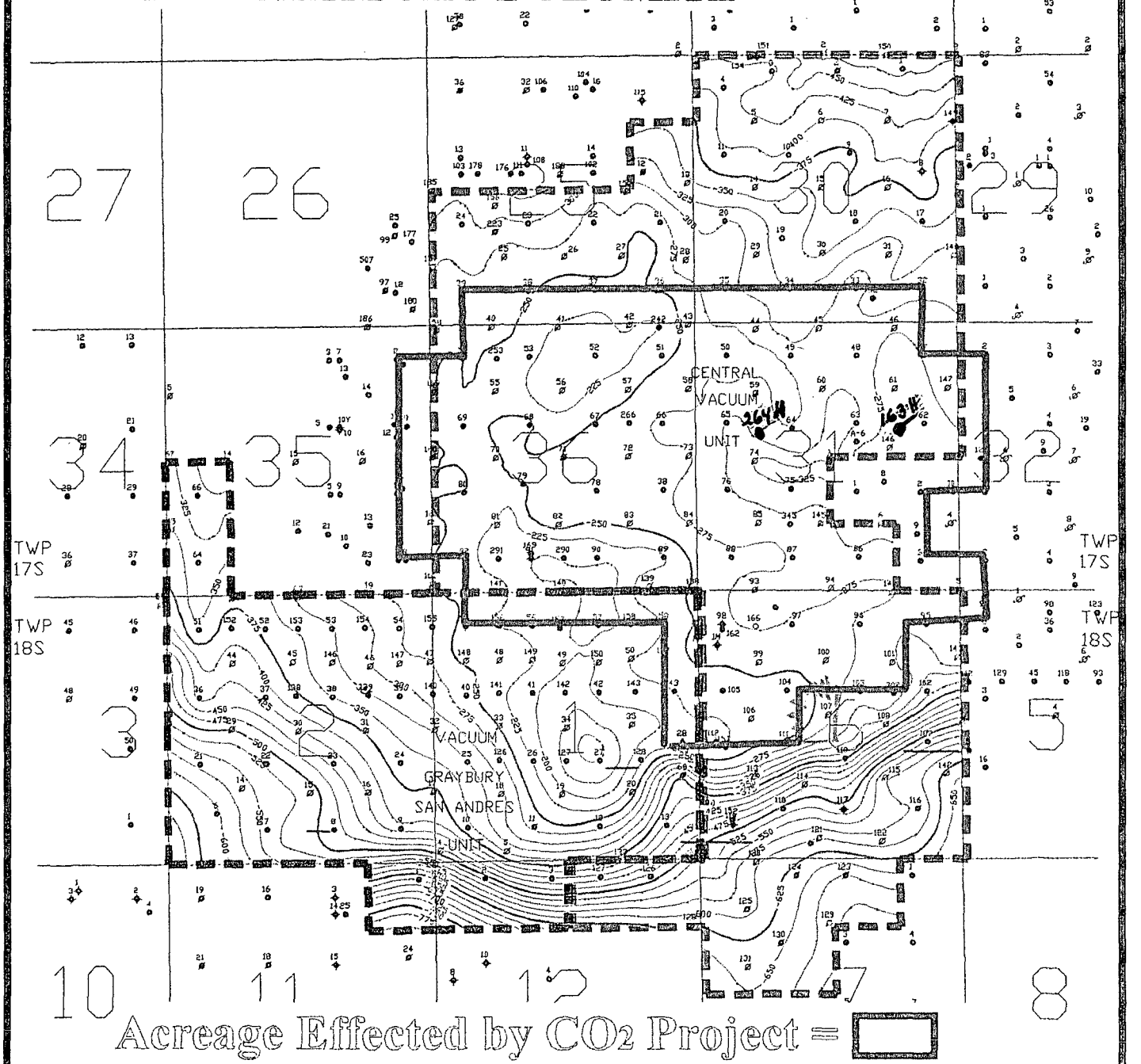
ChevronTexaco requests that the subject wells be added to the tertiary recovery project order number listed in the subject line above. The wells are within the area already certified for positive response as shown on the attached map. If you have any questions, please call me at (432) 687-7114.

Sincerely,

Mike Reeves
Technical Assistant
New Mexico Team
MidContinent Business Unit

Attachment

STRUCTURE MAP
TOP OF GRAYBURG DOLOMITE



Acreage Effected by CO_2 Project =

CENTRAL VACUUM UNIT BOUNDARY
VACUUM G-SA UNIT BOUNDARY

RANGE 34E | RANGE 35E

C.I. = 25'

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

October 25, 2000

Department of Taxation and Revenue
P.O. Box 630
Santa Fe, New Mexico 87509-0630

Attention: Mr. John Chavez, Secretary

Re: Notice of Additional Producing Wells
Texaco Exploration & Production Inc.
Central Vacuum Unit Tertiary Recovery Project

Dear Secretary Chavez:

Please be advised that Texaco Exploration & Production Inc., operator of the Central Vacuum Unit Tertiary Recovery Project, has drilled the following additional producing wells within the project area:

Well Name & Number	API Number	Well Location
Central Vacuum Unit No. 280	30-025-34540	Unit L, Section 36, T-17S, R-34E
Central Vacuum Unit No. 292	30-025-34542	Unit M, Section 36, T-17S, R-34E
Central Vacuum Unit No. 286	30-025-34943	Unit O, Section 31, T-17S, R-35E
Central Vacuum Unit No. 295	30-025-34944	Unit A, Section 6, T-18S, R-35E

The Division has determined that these wells, which are producing from the Vacuum Grayburg-San Andres Pool, are eligible for the recovered oil tax rate effective on the date of first production.

If additional information is required, please advise.

Sincerely,

Lori Wrotenbery by DRC

Lori Wrotenbery
Director

LW/DRC

Xc: File-EOR-37
Texaco Exploration & Production Inc.

Texaco Exploration and Production Inc.
Permian Business Unit

500 North Loraine
Midland TX 79701

P O Box 3109
Midland TX 79702

September 20, 2000

New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

Attn: Ms. Lori Wrotenbery

Re: Certification of Positive Production Response
Central Vacuum Unit Tertiary Recovery Project

Dear Ms. Wrotenbery

Texaco Exploration and Production, Inc. respectfully requests that the following wells be considered eligible for the recovered oil tax rate:

Well	API Number	Location
Central Vacuum Unit #280	30-025-34540	NW 1/4 of SW 1/4 Section 36, T17S R34E
Central Vacuum Unit #292	30-025-34542	SW 1/4 of SW 1/4 Section 36, T17S R34E
Central Vacuum Unit #286	30-025-34943	SW 1/4 of SE 1/4 Section 31, T17S R35E
Central Vacuum Unit #295	30-025-34944	NE 1/4 of NE 1/4 Section 6 T18S R35E
Vacuum Grayburg San Andres Unit #159	30-025-33464	NE 1/4 of NE 1/4 Section 1 T18S R34E
East Vacuum Grayburg San Andres Unit #394	30-025-34831	SW 1/4 of NE 1/4 Section 32 T17S R35E
East Vacuum Grayburg San Andres Unit #397	30-025-34834	NE 1/4 of SW 1/4 Section 31 T17S R35E

These wells were recently drilled in the project area described in File-EOR-37. If you have any questions or concerns, please contact Britton McQuien @ (915) 688-4445.

Sincerely

Britton McQuien

Britton McQuien
Engineer
Texaco Exploration and Production, Inc.
Midland, Texas

enc

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

July 5, 2000

Texaco Exploration & Production Inc.
P.O. Box 3109
Midland, Texas 79702

Attention: Mr. Scott C. Wehner

Re: Certification of Positive Production Response
Central Vacuum Unit Tertiary Recovery Project

Dear Mr. Wehner:

Pursuant to your request dated December 22, 1999, please be advised that the Division hereby certifies that a positive production response occurred within the Central Vacuum Unit Tertiary Recovery Project on September 1, 1998.

All Vacuum Grayburg-San Andres Pool producing wells within the following described area, which currently number seventy-one as shown on Exhibit "A" attached hereto, shall be eligible for the recovered oil tax rate.

PROJECT AREA

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM

Section 25: S/2 S/2 SE/4, S/2 SE/4 SW/4, SE/4 SW/4 SW/4,
Section 36: S/2, NE/4, E/2 NW/4, SW/4 NW/4, S/2 NW/4 NW/4, NE/4 NW/4 NW/4

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Section 30: S/2 S/2 SW/4, S/2 SW/4 SE/4, SW/4 SE/4 SE/4,
Section 31: W/2, SW/4 SE/4, W/2 NE/4, SE/4 NE/4, S/2 NE/4 NE/4, NW/4 NE/4, NE/4

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 6: N/2 NW/4, NW/4 NE/4, SW/4 NW/4, N/2 NE/4 NE/4, SW/4 NE/4 NE/4, NW/4 SE/4 NE/4, N/2 SW/4 NE/4, N/2 SE/4 NW/4, SW/4 SE/4 NW/4, N/2 NW/4 SW/4, NW/4 NE/4 SW/4

Texaco Exploration & Production, Inc. shall notify the Division:

(a) of the change in status of any of the producing wells shown on Exhibit "A";

(b) in the event new producing wells are drilled within the project area; and

(c) of changes in operations within the project area which may affect the certification and resulting tax rate granted herein.

The Division Director shall notify the Secretary of the New Mexico Taxation and Revenue Department of the certification granted herein.

Sincerely,

Lori Wrotenbery by DC

Lori Wrotenbery
Director

Xc: File-EOR-37

EXHIBIT "A"
CERTIFICATION OF POSITIVE PRODUCTION RESPONSE
CENTRAL VACUUM UNIT TERTIARY RECOVERY PROJECT
PRODUCING WELLS

API NUMBER	WELL NAME & NUMBER	WELL LOCATION UL-S-T-R
30-025-02944	CVU No. 32	Unit P, Section 30, T-17S, R-35E
30-025-08545	CVU No. 33	Unit O, Section 30, T-17S, R-35E
30-025-02941	CVU No. 34	Unit N, Section 30, T-17S, R-35E
30-025-02945	CVU No. 35	Unit M, Section 30, T-17S, R-35E
30-025-02111	CVU No. 36	Unit P, Section 25, T-17S, R-34E
30-025-02112	CVU No. 37	Unit O, Section 25, T-17S, R-34E
30-025-02107	CVU No. 38	Unit N, Section 25, T-17S, R-34E
30-025-02109	CVU No. 39	Unit M, Section 25, T-17S, R-34E
30-025-08532	CVU No. 47	Unit A, Section 31, T-17S, R-35E
30-025-08534	CVU No. 48	Unit B, Section 31, T-17S, R-35E
30-025-02958	CVU No. 49	Unit C, Section 31, T-17S, R-35E
30-025-02959	CVU No. 50	Unit D, Section 31, T-17S, R-35E
30-025-02230	CVU No. 51	Unit A, Section 36, T-17S, R-34E
30-025-02231	CVU No. 52	Unit B, Section 36, T-17S, R-34E
30-025-02233	CVU No. 53	Unit C, Section 36, T-17S, R-34E
30-025-02232	CVU No. 54	Unit D, Section 36, T-17S, R-34E
30-025-08531	CVU No. 62	Unit H, Section 31, T-17S, R-35E
30-025-08533	CVU No. 63	Unit G, Section 31, T-17S, R-35E
30-025-02953	CVU No. 64	Unit F, Section 31, T-17S, R-35E
30-025-02955	CVU No. 65	Unit E, Section 31, T-17S, R-35E
30-025-02236	CVU No. 66	Unit H, Section 36, T-17S, R-34E
30-025-02237	CVU No. 67	Unit G, Section 36, T-17S, R-34E
30-025-02239	CVU No. 68	Unit F, Section 36, T-17S, R-34E
30-025-02235	CVU No. 69	Unit E, Section 36, T-17S, R-34E
30-025-02954	CVU No. 75	Unit K, Section 31, T-17S, R-35E
30-025-02957	CVU No. 76	Unit L, Section 31, T-17S, R-35E
30-025-02238	CVU No. 77	Unit I, Section 36, T-17S, R-34E
30-025-02240	CVU No. 78	Unit J, Section 36, T-17S, R-34E
30-025-02229	CVU No. 79	Unit K, Section 36, T-17S, R-34E
30-025-02234	CVU No. 80	Unit L, Section 36, T-17S, R-34E
30-025-02956	CVU No. 86	Unit O, Section 31, T-17S, R-35E
30-025-08536	CVU No. 87	Unit N, Section 31, T-17S, R-35E
30-025-08535	CVU No. 88	Unit M, Section 31, T-17S, R-35E
30-025-02241	CVU No. 89	Unit P, Section 36, T-17S, R-34E
30-025-02244	CVU No. 90	Unit O, Section 36, T-17S, R-34E
30-025-02242	CVU No. 92	Unit M, Section 36, T-17S, R-34E

30-025-03088	CVU No. 95	Unit A, Section 6, T-18S, R-35E
30-025-03089	CVU No. 96	Unit B, Section 6, T-18S, R-35E
30-025-03076	CVU No. 97	Unit C, Section 6, T-18S, R-35E
30-025-03090	CVU No. 102	Unit H, Section 6, T-18S, R-35E
30-025-03091	CVU No. 103	Unit G, Section 6, T-18S, R-35E
30-025-03078	CVU No. 104	Unit F, Section 6, T-18S, R-35E
30-025-03077	CVU No. 105	Unit E, Section 6, T-18S, R-35E
30-025-24754	CVU No. 111	Unit K, Section 6, T-18S, R-35E
30-025-23801	CVU No. 132	Unit O, Section 30, T-17S, R-35E
30-025-27194	CVU No. 153	Unit L, Section 6, T-18S, R-35E
30-025-28182	CVU No. 162	Unit D, Section 6, T-18S, R-35E
30-025-33711	CVU No. 167	Unit G, Section 36, T-17S, R-34E
30-025-33335	CVU No. 168	Unit F, Section 36, T-17S, R-34E
30-025-29765	CVU No. 169	Unit N, Section 36, T-17S, R-34E
30-025-33722	CVU No. 175	Unit L, Section 31, T-17S, R-35E
30-025-33331	CVU No. 176	Unit I, Section 36, T-17S, R-34E
30-025-33712	CVU No. 177	Unit J, Section 36, T-17S, R-34E
30-025-33332	CVU No. 178	Unit K, Section 36, T-17S, R-34E
30-025-33333	CVU No. 179	Unit L, Section 36, T-17S, R-34E
30-025-32799	CVU No. 186	Unit O, Section 31, T-17S, R-35E
30-025-33329	CVU No. 187	Unit M, Section 31, T-17S, R-35E
30-025-33330	CVU No. 188	Unit P, Section 36, T-17S, R-34E
30-025-33334	CVU No. 189	Unit P, Section 36, T-17S, R-34E
30-025-32802	CVU No. 195	Unit A, Section 6, T-18S, R-35E
30-025-32803	CVU No. 196	Unit C, Section 6, T-18S, R-35E
30-025-32791	CVU No. 197	Unit D, Section 6, T-18S, R-35E
30-025-32807	CVU No. 203	Unit F, Section 6, T-18S, R-35E
30-025-32792	CVU No. 204	Unit E, Section 6, T-18S, R-35E
30-025-30104	CVU No. 242	Unit A, Section 36, T-17S, R-34E
30-025-30103	CVU No. 253	Unit C, Section 36, T-17S, R-34E
30-025-30022	CVU No. 266	Unit G, Section 36, T-17S, R-34E
30-025-31197	CVU No. 290	Unit N, Section 36, T-17S, R-34E
30-025-31195	CVU No. 291	Unit N, Section 36, T-17S, R-34E
30-025-30023	CVU No. 302	Unit H, Section 6, T-18S, R-35E
30-025-31204	CVU No. 345	Unit N, Section 31, T-17S, R-35E

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Jennifer A. Salisbury
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

July 5, 2000

Department of Taxation and Revenue
P.O. Box 630
Santa Fe, New Mexico 87509-0630

Attention: Mr. John Chavez, Secretary

Re: Certification of a Positive Production Response
Texaco Exploration & Production Inc.
Central Vacuum Unit Tertiary Recovery Project

Dear Secretary Chavez:

Enclosed is a copy of a Division Certification that was issued on July 5, 2000. This document certifies that a positive production response has occurred within the Central Vacuum Unit Tertiary Recovery Project that is currently operated by Texaco Exploration & Production Inc. In addition, this positive production response has occurred within the seven year time limit as described within the *"New Mexico Enhanced Oil Recovery Act"*. The Division has determined that all wells within the certified area producing from the Vacuum-Grayburg San Andres Pool are eligible for the recovered oil tax rate. These wells are shown on Exhibit "A" to the Division Certification.

For your convenience, we have also enclosed a summary page showing all pertinent data. If additional information is required, please advise.

Sincerely,

Lori Wrotenbery by DC

Lori Wrotenbery
Director

LW/DRC

Xc: EOR-37

POSITIVE PRODUCTION RESPONSE DATA
CENTRAL VACUUM UNIT TERTIARY RECOVERY PROJECT

NAME OF PROJECT

Central Vacuum Unit Tertiary Recovery Project

OPERATOR

Texaco Exploration & Production Inc.
P.O. Box 3109
Midland, Texas 79702

POOL

Vacuum-Grayburg San Andres Pool

OCD ORDER NO. APPROVING TERTIARY PROJECT & DATE

R-5530-E, April 30, 1997

PROJECT AREA

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM

Section 25: S/2 S/2 SE/4, S/2 SE/4 SW/4, SE/4 SW/4 SW/4,
Section 36: S/2, NE/4, E/2 NW/4, SW/4 NW/4, S/2 NW/4 NW/4, NE/4 NW/4 NW/4

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Section 30: S/2 S/2 SW/4, S/2 SW/4 SE/4, SW/4 SE/4 SE/4,
Section 31: W/2, SW/4 SE/4, W/2 NE/4, SE/4 NE/4, S/2 NE/4 NE/4, NW/4 NE/4, NE/4

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 6: N/2 NW/4, NW/4 NE/4, SW/4 NW/4, N/2 NE/4 NE/4, SW/4 NE/4 NE/4, NW/4 SE/4 NE/4, N/2 SW/4 NE/4, N/2 SE/4 NW/4, SW/4 SE/4 NW/4, N/2 NW/4 SW/4, NW/4 NE/4 SW/4

DATE CO_2 INJECTION COMMENCED

July, 1997

DATE CERTIFIED PROJECT TO TAXATION & REVENUE

July, 1997

DATE POSITIVE PRODUCTION RESPONSE OCCURRED

September 1, 1998

CURRENT NUMBER OF WELLS WITHIN PROJECT AREA

Injection—51
Production—71

CAMPBELL, CARR, BERGE
& SHERIDAN, P.A.
LAWYERS

MICHAEL B. CAMPBELL
WILLIAM F. CARR
BRADFORD C. BERGE
MARK F. SHERIDAN
MICHAEL H. FELDEWERT
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KATHERINE M. MOSS

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JEFFERSON PLACE
SUITE 1 - 110 NORTH GUADALUPE
POST OFFICE BOX 2208
SANTA FE, NEW MEXICO 87504-2208
TELEPHONE: (505) 988-4421
FACSIMILE: (505) 983-6043
E-MAIL: ccbspa@ix.netcom.com

June 16, 1999

HAND DELIVERED

David R. Catanach, Hearing Examiner
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources
2040 South Pacheco Street
Santa Fe, New Mexico 87505

Re: ***Central Vacuum Unit***
Commencement of WAG injection operations
Order No. R-5530-E

Dear Mr. Catanach:

Oil Conservation Division Order No. R-5530-E approved the tertiary recovery project area comprised of 1,550 acres, more or less, being a portion of the Central Vacuum Unit Area comprised of the following described area:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM

Section 25: S/2 S/2 SE/4, S/2 SE/4 SW/4, SE/4 SW/4 SW/4
Section 36: S/2, NE/4, E/2 NW/4, SW/4 NW/4, S/2 NW/4 NW/4, NE/4 NW/4 NW/4

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Section 30: S/2 S/2 SW/4, S/2 SW/4 SE/4, SW/4 SE/4 SE/4
Section 31: W/2, SW/4 SE/4, W/2 NE/4, SE/4 NE/4, S/2 NE/4 NE/4, NW/4 NE/4 NE/4

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 6: N/2 NW/4, NW/4 NE/4, SW/4 NW/4, N/2 NE/4 NE/4, SW/4 NE/4 NE/4, NW/4 SE/4 NE/4, N/2 SW/4 NE/4, N/2 SE/4 NW/4, SW/4 SE/4 NW/4, N/2 NW/4 SW/4, NW/4 NE/4 SW/4

The purpose of this letter is to request from the Division a Certificate of Qualification which specifies the above described Project Area. WAG injections operations commenced in this area on July 7, 1997 and as of April 30, 1999, 27.3 BCF of Carbon Dioxide Gas had been injected in this enhanced oil recovery project area.

If you have questions concerning this request, please advise.

Very truly yours,

WILLIAM F. CARR
Attorney for Texaco Exploration and Production Inc.

cc: Scott Wehner
Robert Hurd

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

RECEIVED
DEC 17 1999
CAMPBELL, CARR, et. al.

December 14, 1999

Texaco Exploration & Production Inc.
c/o Mr. William F. Carr
Campbell, Carr, Berge & Sheridan, P.A.
P. O. Box 2208
Santa Fe, New Mexico 87504-2208

CERTIFICATION OF ENHANCED OIL RECOVERY PROJECT FOR THE RECOVERED OIL TAX RATE

The New Mexico Oil Conservation Division hereby certifies that the following Enhanced Oil Recovery Project has been approved by the Division as a secondary project pursuant to the provisions of the New Mexico Enhanced Oil Recovery Act (Laws of 1992, Chapter 38). In order to qualify for the Recovered Oil Tax Rate, you must apply for certification of positive production response within five years from the date of this certification. Only production from that portion of the project area identified herein which is actually developed for enhanced recovery will qualify for the reduced tax rate.

If operation of this project is terminated for any reason, the operator of the project must notify the Division and the Secretary of the Taxation & Revenue Department not later than the thirtieth day after termination.

NAME OF PROJECT:	Central Vacuum Unit Pressure Maintenance Project
OCD ORDER NUMBER:	R-5530-E
OPERATOR:	Texaco Exploration & Production Inc.
ADDRESS:	205 E. Bender Blvd. Hobbs, New Mexico 88240
CERTIFICATION DATE:	July 7, 1997

Exhibit No.2

PROJECT AREA

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM

Section 25: S/2 S/2 SE/4, S/2 SE/4 SW/4, SE/4 SW/4 SW/4
Section 36: S/2, NE/4, E/2 NW/4, SW/4 NW/4, S/2 NW/4 NW/4, NE/4 NW/4 NW/4

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Section 30: S/2 S/2 SW/4, S/2 SW/4 SE/4, SW/4 SE/4 SE/4
Section 31: W/2, SW/4 SE/4, W/2 NE/4, SE/4 NE/4, S/2 NE/4 NE/4, NW/4 NE/4 NE/4

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 6: N/2 NW/4, NW/4 NE/4, SW/4 NW/4, N/2 NE/4 NW/4, SW/4 NE/4 NE/4, NW/4 SE/4 NE/4, N/2 SW/4 NE/4, N/2 SE/4 NW/4, SW/4 SE/4 NW/4, N/2 NW/4 SW/4, NW/4 NE/4 SW/4

APPROVED BY:

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

Lori Wrotenbery by DJO

LORI WROTENBERY
DIRECTOR

Xc: File- EOR 37

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

December 14, 1999

Department of Taxation & Revenue
P. O. Box 630
Santa Fe, New Mexico 87509-0630

Attention: John Chavez, Secretary

Re: *Certification of EOR Project*
Texaco Exploration & Production Inc.
Central Vacuum Unit PM Project

Dear Secretary Chavez:

Enclosed is a copy of the certification issued to Texaco Exploration & Production Inc. for its Central Vacuum Unit Pressure Maintenance EOR Project, certified by this Division effective July 7, 1997, to be a qualified Enhanced Oil Recovery Project. If the operator applies for certification of positive production response within five years of the certification date, this project will be eligible for the Recovered Oil Tax Rate as provided in Laws of 1992, Chapter 38.

Only oil production from that portion of the lands identified in the certification which is actually developed for enhanced recovery will be eligible for the reduced tax rate. At the time positive production response is certified, we will identify for you the specific lands and wells within the project which qualify for the Recovered Oil Tax Rate.

Sincerely,

Lori Wrotenbery by DRC

Lori Wrotenbery
Director

LW/DRC/kv

Enclosures

Xc: File EOR-37

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

December 14, 1999

Texaco Exploration & Production Inc.
c/o Mr. William F. Carr
Campbell, Carr, Berge & Sheridan, P.A.
P. O. Box 2208
Santa Fe, New Mexico 87504-2208

CERTIFICATION OF ENHANCED OIL RECOVERY PROJECT FOR THE RECOVERED OIL TAX RATE

The New Mexico Oil Conservation Division hereby certifies that the following Enhanced Oil Recovery Project has been approved by the Division as a secondary project pursuant to the provisions of the New Mexico Enhanced Oil Recovery Act (Laws of 1992, Chapter 38). In order to qualify for the Recovered Oil Tax Rate, you must apply for certification of positive production response within five years from the date of this certification. Only production from that portion of the project area identified herein which is actually developed for enhanced recovery will qualify for the reduced tax rate.

If operation of this project is terminated for any reason, the operator of the project must notify the Division and the Secretary of the Taxation & Revenue Department not later than the thirtieth day after termination.

NAME OF PROJECT:	Central Vacuum Unit Pressure Maintenance Project
OCD ORDER NUMBER:	R-5530-E
OPERATOR:	Texaco Exploration & Production Inc.
ADDRESS:	205 E. Bender Blvd. Hobbs, New Mexico 88240
CERTIFICATION DATE:	July 7, 1997

PROJECT AREA

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM

Section 25: S/2 S/2 SE/4, S/2 SE/4 SW/4, SE/4 SW/4 SW/4
Section 36: S/2, NE/4, E/2 NW/4, SW/4 NW/4, S/2 NW/4 NW/4, NE/4 NW/4 NW/4

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Section 30: S/2 S/2 SW/4, S/2 SW/4 SE/4, SW/4 SE/4 SE/4
Section 31: W/2, SW/4 SE/4, W/2 NE/4, SE/4 NE/4, S/2 NE/4 NE/4, NW/4 NE/4 NE/4

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 6: N/2 NW/4, NW/4 NE/4, SW/4 NW/4, N/2 NE/4 NW/4, SW/4 NE/4 NE/4, NW/4 SE/4 NE/4, N/2 SW/4 NE/4, N/2 SE/4 NW/4, SW/4 SE/4 NW/4, N/2 NW/4 SW/4, NW/4 NE/4 SW/4

APPROVED BY:

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

Lori Wrotenbery by DR

LORI WROTENBERY
DIRECTOR

Xc: File- EOR 37

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. 11650
ORDER NO. R-5530-E

APPLICATION OF TEXACO EXPLORATION AND PRODUCTION INC. FOR AMENDMENT OF DIVISION ORDER NO. R-5530, AS AMENDED, TO INCREASE INJECTION PRESSURES IN ITS CENTRAL VACUUM UNIT PRESSURE MAINTENANCE PROJECT AREA, AUTHORIZE A TERTIARY RECOVERY PROJECT BY THE INJECTION OF CARBON DIOXIDE AND TO QUALIFY THIS PROJECT FOR THE RECOVERED OIL TAX RATE PURSUANT TO THE "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 December 19, 1996, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 30th day of April, 1997, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

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 Division Order R-5496, entered in Case No. 5970 on August 9, 1977, the Division, upon application of Texaco Inc., approved the Central Vacuum Unit, said unit comprising some 3,046 acres, more or less, of State and fee lands described as follows:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
Section 25: S/2, SE/4 NE/4
Section 36: All

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM
Section 30: All
Section 31: N/2, SW/4, SW/4 SE/4

TOWNSHIP 18 SOUTH, RANGE 34 EAST, NMPM
Section 12: N/2 NE/4

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM
Section 6: All
Section 7: NW/4, NW/4 NE/4

(3) By Order No. R-5530 entered in Case No. 6008 on September 20, 1977, the Division authorized Texaco Inc. to institute a pressure maintenance project within the aforesaid Central Vacuum Unit by the injection of water into the Grayburg and San Andres formations, Vacuum Grayburg-San Andres Pool, through fifty-five initial injection wells.

(4) The "Unitized Formation" for the Central Vacuum Unit includes the stratigraphic interval underlying the Unit Area in the Vacuum-Grayburg-San Andres Pool between the depths of 3,858 feet (plus 144 feet sub-sea) and 4,858 feet (minus 856 feet sub-sea) on the Welex Acoustic Velocity Log, run on November 15, 1963, in the Texaco Inc. State of New Mexico "O" (NCT-1) Well No. 23, located in Unit O of Section 36, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico (now Vacuum Glorieta West Unit Well No. 101).

(5) The applicant, Texaco Exploration and Production Inc. (Texaco) seeks:

a) to amend Division Order No. R-5530, as amended, to authorize the implementation of tertiary recovery operations within the Central Vacuum Unit Pressure Maintenance Project by the alternate injection of water and carbon dioxide and produced gases (WAG) into the Grayburg and San Andres formations;

b) authorization to increase the surface injection pressure for water in certain injection wells to 1500 psi, provided that step rate tests conducted on these wells do not indicate fracturing of the injection formation;

c) authorization to inject carbon dioxide gas at a maximum surface injection pressure of 350 psi above the maximum allowed surface water injection pressure, not to exceed 1850 psi; and,

d) to qualify the proposed tertiary recovery project for the recovered oil tax rate pursuant to the "New Mexico Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(6) The applicant proposed that the project area for the tertiary recovery project comprise some 1,550 acres, more or less, being a portion of the Central Vacuum Unit Area, described as follows:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
Section 25: S/2 S/2 SE/4, S/2 SE/4 SW/4, SE/4 SW/4 SW/4
Section 36: S/2, NE/4, E/2 NW/4, SW/4 NW/4, S/2 NW/4 NW/4, NE/4 NW/4 NW/4

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM
Section 30: S/2 S/2 SW/4, S/2 SW/4 SE/4, SW/4 SE/4 SE/4
Section 31: W/2, SW/4 SE/4, W/2 NE/4, SE/4 NE/4, S/2 NE/4 NE/4, NW/4 NE/4 NE/4

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM
Section 6: N/2 NW/4, NW/4 NE/4, SW/4 NW/4, N/2 NE/4 NE/4, SW/4 NE/4 NE/4, NW/4 SE/4 NE/4, N/2 SW/4 NE/4, N/2 SE/4 NW/4, SW/4 SE/4 NW/4, N/2 NW/4 SW/4, NW/4 NE/4 SW/4

(7) Current secondary recovery operations within the Central Vacuum Unit are summarized as follows:

Number of Producing Wells:	88
Number of Injection Wells:	86
Current Oil Production:	4,100 BOPD
Current Water Injection:	63,000 BWPD
Cumulative Oil Recovery:	72 MMSTBO
Cumulative Secondary Oil Recovery (1977-Date):	42 MMSTBO
Current Average Water Cut:	96%

(8) According to evidence and testimony presented by the applicant, its plan of operation within the proposed tertiary recovery project includes:

a) implementing a change in the process used for the displacement of crude oil by initiating water-alternating-gas (WAG) injection (injecting water and carbon dioxide (CO_2) in alternating slugs of produced gas and CO_2 with slugs of water);

b) injecting an estimated 259 BCF of CO_2 and other produced gases and 148 million barrels of water over the life of the proposed tertiary project, which is estimated to be approximately 25 years;

c) utilizing a total of fifty-one (51) injection wells (all as shown on Exhibit "A" attached hereto) and seventy-one (71) producing wells (sixty-eight (68) existing wells and three (3) new wells proposed to be drilled) within the proposed tertiary recovery project; and,

d) injecting at sufficient pressure so as to maintain reservoir pressure at high enough levels to meet miscible pressure requirements in the reservoir.

(9) The proposed tertiary recovery project area (described in Finding No. 6 above) represents approximately 50 percent of the area contained within the Central Vacuum Unit. According to applicant's testimony, the proposed tertiary recovery project is being limited to only a portion of the Central Vacuum Unit for the following reasons:

a) the targeted area represents that portion of the Central Vacuum Unit which contains the best hydrocarbon pore volume within the Grayburg-San Andres reservoir; and,

b) the current economics of the proposed tertiary recovery project dictate that CO_2 injection should be initially limited to that portion of the Central Vacuum Unit containing sufficient hydrocarbon pore volume.

(10) Applicant further testified that the proposed tertiary recovery project may be expanded in the future into other areas of the Central Vacuum Unit in the event economic considerations become more favorable.

(11) Further evidence and testimony presented by the applicant indicates that the amount of recoverable oil attributed to a positive production response from the expanded use of enhanced oil recovery technology for the proposed tertiary recovery project is an estimated 20.3 million stock tank barrels along with 23.2 BCF of hydrocarbon gas.

(12) Texaco testified that the initiation of tertiary recovery operations utilizing the methodology proposed should result in the additional recovery set forth in Finding Paragraph No. (11) above for a projected cost of approximately $345.7 million which includes field installations and upgrades, well remediation, separation and compression facilities, the purchase of CO_2 and the costs associated with the recycling of injectant.

(13) The proposed tertiary recovery project is offset by the following described tertiary CO_2 floods within the Vacuum Grayburg-San Andres Pool, approved respectively, by Division Order Nos. R-6856, as amended, and Order No. R-10599-B:

a) to the east is the Phillips Petroleum Company East Vacuum Grayburg-San Andres Unit Pressure Maintenance Project located in portions of Townships 17 and 18 South, Range 35 East, NMPM, East Vacuum Grayburg-San Andres Unit Area, Lea County, New Mexico. The current authorized bottomhole pressure in this project area equates to a surface injection pressure for CO_2 of approximately 1850 psig; and,

b) to the west is the Phillips Petroleum Company State "35" Unit Pressure Maintenance Project which is also a CO_2 tertiary recovery project underlying the N/2, E/2 SW/4, and SE/4 of Section 35, Township 17 South, Range 34 East, NMPM, State "35" Com Unit Area, Lea County, New Mexico. The authorized surface injection pressure for CO_2 in this project area is 1850 psig.

(14) The evidence and testimony presented in this case indicates that it is prudent to implement the proposed tertiary recovery project within the Central Vacuum Unit at this time, and that such implementation will result in the recovery of additional oil and gas from the project area which may otherwise not be recovered, thereby preventing waste.

(15) The evidence further indicates that the oil and gas recovered as a result of implementing the proposed tertiary recovery project will be allocated to each tract within the Central Vacuum Unit on a fair and reasonable basis, thereby protecting correlative rights.

(16) The proposed tertiary recovery project should be approved.

(17) The evidence presented by Texaco indicates that the proposed tertiary recovery project meets all the criteria for certification 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).

(18) The certified "EOR Project Area" should initially comprise the area described in Finding Paragraph No. (6) above, provided however, the "EOR Project Area" eligible for the recovered oil tax rate may be contracted and reduced dependent upon the evidence presented by the applicant in its demonstration of the occurrence of a positive production response.

(19) To be eligible for the EOR tax credit, the applicant should advise the Division when CO_2 (WAG) injection commences within the "EOR Project Area" and request the Division certify the subject tertiary recovery project to the New Mexico Taxation and Revenue Department.

(20) At such time as a positive production response occurs from CO_2 (WAG) injection operations and within seven 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 benefiting from tertiary recovery operations. The Division may review the application administratively or set it for hearing. Based upon evidence presented, the Division will certify to the New Mexico Taxation and Revenue Department those lands and wells which are eligible for the tax credit.

(21) Division Order No. R-5530 established maximum surface injection pressures within the Central Vacuum Unit equal to 0.2 psi/ft. of depth to the uppermost injection perforation in each of the fifty-five initial injection wells, or approximately 800 psi.

(22) Throughout the course of secondary recovery operations, the maximum surface injection pressures for the injection wells within the Central Vacuum Unit have been increased upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata. Pressure increases such as described are usually based upon the results of step rate tests.

(23) The current maximum surface injection pressures within the proposed tertiary recovery project area range from approximately 872 psi to 2775 psi.

(24) With regards to the injection pressures within the proposed tertiary recovery project area, the applicant seeks:

a) authority to inject CO_2 at a surface injection pressure 350 psi above the current maximum surface injection pressure for water for a given well (all as shown on applicant's Exhibit No. 12), said CO_2 injection pressure not to exceed 1850 psi;

b) authority to continue to conduct step rate tests and receive pressure increase authority on injection wells within the tertiary recovery project area whose current maximum surface injection pressure for water is less than 1500 psi; and,

c) authority to increase the surface injection pressure for water to 1500 psi on eight wells located within the tertiary recovery project area which have shown no "break" or fracture on current step rate tests, (these wells having been identified on applicant's Exhibit No. 12).

(25) The evidence and testimony presented by Texaco indicates that the proposed maximum CO_2 surface injection pressure of 1850 psi, or 350 psi above the current maximum surface injection pressure for water, is reasonable, necessary and should not result in the migration of injected fluid from the proposed injection interval.

(26) Texaco should be authorized to conduct step rate tests and obtain surface injection pressure increases for water within those injection wells in the tertiary recovery project area whose current maximum surface injection pressure for water is less than 1500 psi.

(27) Texaco should be required to submit current step rate tests on those eight wells described in Finding No. (24)(c) above prior to obtaining Division approval to increase the surface injection pressure for water on these wells to 1500 psi.

(28) All injection wells or the pressurization system should be initially equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than the individual well surface injection pressure authorized by this order.

(29) The applicant testified that there are no "problem wells" within the one-half mile "area of review" and further testified that all plugged and abandoned wells and all producing wells are cemented in a manner adequate to confine the injected fluid to the proposed injection interval.

(30) Texaco proposed that each of the injection wells shown on Exhibit "A" be equipped no different than previously equipped for waterflood operation.

(31) In support of this request, Texaco testified that it anticipates no additional corrosion problems within these wellbores as a result of CO_2 injection.

(32) Texaco's request should be granted, provided however, the Division may require the installation of additional or upgraded wellbore tubulars and packers should it become apparent that the injection of CO_2 is causing beyond normal corrosion problems.

(33) If not previously equipped, each of the injection wells shown on Exhibit "A" should be equipped with internally coated tubing installed in a packer set within 100 feet of the uppermost injection perforation or casing shoe; the casing-tubing annulus 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.

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

(35) The application 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.

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Texaco Exploration and Production Inc., is hereby authorized to institute an EOR tertiary recovery project by means of combined water, carbon dioxide (CO_2), and produced gas injection (WAG) in its Central Vacuum Unit Area located in portions of Townships 17 and 18 South, Ranges 34 and 35 East, NMPM, Lea County, New Mexico, by the injection of water, CO_2, and produced gases into the Grayburg and San Andres formations, Vacuum-Grayburg-San Andres Pool, through the correlative gross perforated and/or open hole interval between the depths of 3,858 feet (plus 144 feet sub-sea) and 4,858 feet (minus 856 feet sub-sea) on the Welex Acoustic Velocity Log, run on November 15, 1963, in the Texaco Inc. State of New Mexico "O" (NCT-1) Well No. 23, located in Unit O of Section 36, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico (now Vacuum Glorieta West Unit Well No. 101), within each of the fifty-one injection wells shown on Exhibit "A" attached hereto.

IT IS FURTHER ORDERED THAT:

(2) Any previous injection authority not in conflict with the provisions set forth in this order shall remain in full force and effect.

(3) WAG injection operations shall be accomplished through internally coated tubing installed in a packer set within approximately 100 feet of the uppermost injection perforations or casing shoe; the casing-tubing annulus 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.

(4) For those injection wells within the "EOR Project Area" whose current maximum surface injection pressure for water is less than 1500 psi (as shown on applicant's Exhibit No. 12), the applicant is hereby authorized to inject water into each of these wells at the current maximum surface injection pressure, provided however, such pressure may be administratively increased by the Division upon a showing that such increase will not result in the fracturing of the injection formation or confining strata, and shall be further authorized to inject CO_2 and produced gases at a maximum surface injection pressure of 350 psi above the current maximum surface injection pressure for water, provided however, such CO_2 injection shall not occur at a surface injection pressure in excess of 1850 psi.

(5) For those injection wells within the "EOR Project Area" whose current maximum surface injection pressure for water exceeds 1500 psi (as shown on applicant's Exhibit No. 12), the applicant is hereby authorized to inject water into each of these wells at the current maximum surface injection pressure, and shall be further authorized to inject CO_2 and produced gases at a maximum surface injection pressure of 1850 psi.

(6) Texaco shall be required to submit current step rate tests on those eight wells described in Finding No. (24)(c) above prior to obtaining Division approval to increase the surface injection pressure for water on these wells to 1500 psi.

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

(8) The operator shall immediately notify the Supervisor of the Hobbs District Office of the Division of the failure of the casing in any of the injection wells, the leakage of water, natural gas, CO_2, or oil from or around any producing well, or the leakage of water, natural gas, CO_2, or oil from any plugged and abandoned well within the "EOR Project Area", and shall take such steps as may be necessary to correct such failure or leakage.

(9) The subject tertiary recovery project is hereby certified as a qualified "Enhanced Oil Recovery Project" pursuant to the"Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(10) The certified and approved "EOR Project Area" shall include those lands described as follows, provided however, the "EOR Project Area" eligible for the recovered oil tax rate may be reduced dependent upon the evidence presented by the applicant in its demonstration of the occurrence of a positive production response.

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM
Section 25: S/2 S/2 SE/4, S/2 SE/4 SW/4, SE/4 SW/4 SW/4
Section 36: S/2, NE/4, E/2 NW/4, SW/4 NW/4, S/2 NW/4 NW/4, NE/4 NW/4 NW/4

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM
Section 30: S/2 S/2 SW/4, S/2 SW/4 SE/4, SW/4 SE/4 SE/4
Section 31: W/2, SW/4 SE/4, W/2 NE/4, SE/4 NE/4, S/2 NE/4 NE/4, NW/4 NE/4 NE/4

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM
Section 6: N/2 NW/4, NW/4 NE/4, SW/4 NW/4, N/2 NE/4 N/4, SW/4 NE/4 NE/4, NW/4 SE/4 NE/4, N/2 SW/4 NE/4, N/2 SE/4 NW/4, SW/4 SE/4 NW/4, N/2 NW/4 SW/4, NW/4 NE/4 SW/4

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

(12) At such time as a positive production response occurs and within seven 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. The Division may review the application administratively or set it for hearing. Based upon evidence presented, the Division will certify to the New Mexico Taxation and Revenue Department those lands and wells which are eligible for the credit.

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

(14) The subject tertiary recovery project is hereby designated the Central Vacuum Unit Tertiary Recovery Project and shall be governed by the provisions of Rules Nos. 701 through 708 of the Oil Conservation Division Rules and Regulations.

(15) Monthly progress reports of the tertiary recovery project herein authorized shall be submitted to the Division in accordance with Rules 706 and 1115 of the Division Rules and Regulations.

(16) Jurisdiction is hereby 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.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LeMAY
Director

S E A L

EXHIBIT "A"
CASE NO. 11650
ORDER NO. R-5530-E
TEXACO EXPLORATION AND PRODUCTION INC.
CENTRAL VACUUM UNIT
TERTIARY PROJECT INJECTION WELLS

WELL NO	FOOTAGE	U	SECTION	TWNSHP	RANGE	API NUMBERS
CVU #40	42' FNL, 1247' FWL	D	36	17S	34E	30-025-25703
(U #41	60' FNL, 2552' FWL	C	36	17S	34E	30-025-25704
(U #42	32' FNL, 1286' FEL	A	36	17S	34E	30-025-25705
C VU #43	35' FNL, 127' FEL	A	36	17S	34E	30-025-25706
CVU #44	134' FNL, 1219' FWL	D	31	17S	35E	30-025-25719
CVU #45	121' FNL, 2475' FWL	C	31	17S	35E	30-025-25720
CVU #46	119' FNL, 1224' FEL	A	31	17S	35E	30-025-25818
CVU #55	1310' FNL, 1310' FWL	D	36	17S	34E	30-025-25721
CVU #56	1310' FNL, 2630' FWL	C	36	17S	34E	30-025-25722
CVU #57	1310' FNL, 1330' FEL	B	36	17S	34E	30-025-25723
CVU #58	1310' FNL, 132' FEL	A	36	17S	34E	30-025-25724
CVU #59	1403' FNL, 1200' FWL	E	31	17S	35E	30-025-25725
CVU #60	1310' FNL, 2535' FWL	C	31	17S	35E	30-025-25707
CVU #61	1310' FNL, 1230' FEL	A	31	17S	35E	30-025-25819
CVU #70	2630' FNL, 1310' FWL	E	36	17S	34E	30-025-25726
CVU #71	2630' FNL, 2623' FEL	G	36	17S	34E	30-025-25727
CVU #72	2630' FNL, 1330' FEL	G	36	17S	34E	30-025-25697
CVU #73	2630' FNL, 142' FEL	H	36	17S	34E	30-025-25728
CVU #74	2561' FSL, 1180' FWL	L	31	17S	35E	30-025-25729
CVU #81	1332' FSL, 1310' FWL	L	36	17S	34E	30-025-25708
CVU #82	1333' FSL, 2528' FWL	K	36	17S	34E	30-025-25730
(U #83	1330' FSL, 1330' FEL	J	36	17S	34E	30-025-25731
(U #84	1333' FSL, 151' FEL	I	36	17S	34E	30-025-25732

CVU #85		1336' FSL, 1201' FWL	L	31		17S		35E		30-025-25709
CVU #93		10' FSL, 1136 FWL	M	31		17S		35E		30-025-25733
CVU #94		50' FSL, 2549' FEL	O	31		17S		35E		30-025-25734
CVU #99		1408' FNL, 1211' FWL	E	6		18S		35E		30-025-25710
CVU #100		1372' FNL, 2544' FWL	F	6		18S		35E		30-025-25711
CVU #101		1410' FNL, 1336' FEL	G	6		18S		35E		30-025-25712
CVU #106		2520' FNL, 1040' FWL	E	6		18S		35E		30-025-25796
CVU #136		2450' FNL, 40' FWL	E	6		18S		35E		30-025-25997
CVU #137		1100' FNL, 40' FWL	D	6		18S		35E		30-025-25998
U #138		10' FSL, 70' FEL	P	36		17S		34E		30-025-25999
U #139		85' FSL, 958' FEL	P	36		17S		34E		30-025-26078
CVU #140		10' FSL, 2571' FWL	N	36		17S		34E		30-025-26000
CVU #141		10' FSL, 1310' FWL	M	36		17S		34E		30-025-26001
CVU #144		35' FNL, 1330' FEL	B	6		18S		35E		30-025-26788
CVU #145		1310' FSL, 2475' FWL	N	31		17S		35E		30-025-26789
CVU #146		2465' FNL, 1335' FEL	G	31		17S		35E		30-025-26790
CVU #147		1310' FNL, 200' FEL	A	31		17S		35E		30-025-26791
CVU #159		1310' FNL, 100' FWL	D	36		17S		34E		30-025-27969
CVU #160		2602' FNL, 35' FWL	E	36		17S		34E		30-025-27970
CVU #161		180' FSL 10' FWL	M	36		17S		34E		30-025-27971
CVU #193		101' FNL, 534' FWL	D	6		18S		35E		30-025-32800
CVU #194		14' FNL, 1917' FWL	C	6		18S		35E		30-025-38010
CVU #199		1372' FNL, 584' FWL	E	6		18S		35E		30-025-32804
CVU #200		1301' FNL, 1875' FWL	C	6		18S		35E		30-025-32805
CVU #201		1360' FNL, 1973' FEL	G	6		18S		35E		30-025-32806
CVU #206		2509' FNL, 536' FWL	E	6		18S		35E		30-025-32808
CVU #207		2500' FNL, 1825' FWL	F	6		18S		35E		30-025-32809
CVU #244		10' FNL, 1930' FEL	B	6		18S		35E		30-025-32810