

Case 12592

APPLICATION FOR AUTHORIZATION TO INJECT

PURPOSE: ☒ Tertiary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ Yes ☐ No

II. OPERATOR: TEXACO EXPLORATION & PRODUCTION, INC.

ADDRESS: Post Office Box 3109, Midland, Texas 79702

CONTACT PARTY: Britton McQuien PHONE: 915.688.4100

III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.
Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? ☒ Yes ☐ No
If yes, give the Division order number authorizing the project: _____

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).

*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Denise Wann TITLE: Senior Engineer

SIGNATURE: Denise Wann DATE: 1-15-01

If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted.
Please show the date and circumstances of the earlier submittal: _____

HOLLAND & HART^{LLP}
and
CAMPBELL & CARR
ATTORNEYS AT LAW

DENVER • ASPEN
BOULDER • COLORADO SPRINGS
DENVER TECH CENTER
BILLINGS • BOISE
CHEYENNE • JACKSON HOLE
SALT LAKE CITY • SANTA FE
WASHINGTON, D.C.

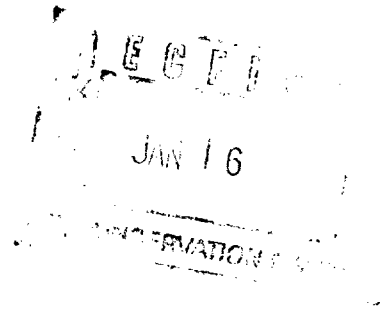
P.O. BOX 2208
SANTA FE, NEW MEXICO 87504-2208
110 NORTH GUADALUPE, SUITE 1
SANTA FE, NEW MEXICO 87501

TELEPHONE (505) 988-4421
FACSIMILE (505) 983-6043

January 16, 2001

HAND-DELIVERED

Lori Wrotenbery, Director
Oil Conservation Division
New Mexico Department of Energy,
Minerals and Natural Resources
2040 South Pacheco Street
Santa Fe, New Mexico 87505



Re: Application of Texaco Exploration & Production Inc. for amendment of Division Order No. R-4442, as amended, to authorize a tertiary recovery project by the injection of carbon dioxide in its Vacuum Grayburg-San Andres Unit Area, approval of amendment of the Cooperative Water Injection Agreement between the Central Vacuum Unit and the Vacuum Grayburg-San Andres Unit, and qualification of the project for the Recovered Oil Tax Rate Pursuant to the Enhanced Oil Recovery Act, Lea County, New Mexico.

Dear Ms. Wrotenbery:

Enclosed in triplicate is the Application of Texaco Exploration & Production Inc. in the above-referenced case as well as a copy of a legal advertisement. Texaco requests that this matter be set for hearing before a Division Examiner on February 8, 2001.

Very truly yours,

William F. Carr

Enclosures

cc: Mr. Britton McQueen (w/enclosures)
Texaco Exploration & Production Inc.
Post Office Box 3109
Midland, Texas 79702

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

**IN THE MATTER OF THE APPLICATION
OF TEXACO EXPLORATION & PRODUCTION INC.
FOR AMENDMENT OF DIVISION ORDER NO.
R-4442, AS AMENDED, TO AUTHORIZE A
TERTIARY RECOVERY PROJECT BY THE
INJECTION OF CARBON DIOXIDE IN ITS
VACUUM GRAYBURG-SAN ANDRES UNIT
PRESSURE MAINTENANCE PROJECT AREA,
APPROVAL OF AMENDMENT OF THE
COOPERATIVE WATER INJECTION
AGREEMENT BETWEEN THE CENTRAL
VACUUM UNIT AND THE VACUUM GRAYBURG-
SAN ANDRES UNIT, AND QUALIFICATION OF THE
PROJECT FOR THE RECOVERED OIL TAX RATE
PURSUANT TO THE ENHANCED OIL RECOVERY
ACT, LEA COUNTY, NEW MEXICO.**

CASE NO. _____

APPLICATION

TEXACO EXPLORATION & PRODUCTION INC. ("Texaco") through its attorneys, Holland & Hart and Campbell & Carr, hereby makes application for an order amending Division Order Nos. R-4442, as amended, to authorize a tertiary recovery project by the injection of carbon dioxide into the Grayburg and San Andres formations in its Vacuum Grayburg-San Andres Unit Pressure Maintenance Project Area, Vacuum Grayburg-San Andres Pool, to increase the authorized pressure in this project area for Carbon Dioxide injection, to approve amendment of the Vacuum (Grayburg-San Andres) Cooperative Water Injection Agreement concerning CO₂ injection operations to the common boundary between the Central Vacuum Unit and the Vacuum Grayburg-San Andres Unit and, to qualify this

project for the Recovered Oil Tax Rate pursuant to the Enhanced Oil Recovery Act, and in support of its application states:

1. By Order No. R-4433, dated November 1, 1972, the Division granted the application of Texaco for approval of the Vacuum Grayburg-San Andres Unit comprised of approximately 1486 acres, more or less. The unit boundaries include the following acreage in Lea County, New Mexico:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, N.M.P.M.

Section 35: W/2 SW/4

TOWNSHIP 18 SOUTH, RANGE 34 EAST, N.M.P.M.

Sections 1 and 2: All

Section 11: NE/4 NE/4

Section 12: N/2 NW/4

2. Pursuant to the provisions of Division Order No. R-4442 dated November 1, 1972, as amended, Texaco operates the Vacuum Grayburg-San Andres Pressure Maintenance Project in the Vacuum Grayburg-San Andres Unit for the injection of water into the Vacuum-Grayburg-San Andres Pool .

3. Texaco seeks an amendment of Order No. R-4442, as amended, to authorize the implementation of tertiary recovery operations in this project area by the injection of carbon dioxide into the Grayburg and San Andres formations and further seeks amendment of Order No. R-4442, as amended, to increase the injection pressure limitation for carbon dioxide to a surface injection pressure of 1850 pounds. Filed herewith is Oil Conservation

Division Form C-108, Application for Authorization to Inject, and attached hereto as Exhibit A is a list of all wells within the Proposed CO₂ Target Area identified as Producers and Injectors.

4. Texaco also seeks approval of amendments to the Vacuum (Grayburg-San Andres) Cooperative Water Injection Agreement to allow for the expansion of CO₂ injection operations on the common boundary between the Central Vacuum Unit and the Vacuum Grayburg-San Andres Unit. A copy of this agreement and the amendment thereto is attached hereto as Exhibit B.

5. Texaco further seeks to qualify this project for the Recovered Oil Tax Rate pursuant to the New Mexico Enhanced Oil Recovery Act. Attached hereto as Exhibit C is Texaco's letter application which contains all information required by Division rules to qualify this project under the Enhanced Oil Recovery Act.

6. Attached hereto as Exhibit D is a list of the names and addresses of the persons entitled to notice of this application pursuant to Oil Conservation Division rules and regulations.

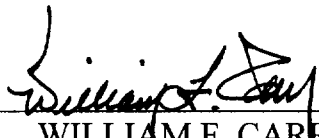
7. Approval of this application will afford Texaco the opportunity to produce its just and equitable share of the remaining reserves in the Vacuum Grayburg-San Andres Pressure Maintenance Project Area and will otherwise be in the best interest of the conservation, the protection of correlative rights and the prevention of waste.

WHEREFORE, Texaco Exploration and Production Inc. requests that this matter be

set for hearing before a duly appointed Examiner of the Oil Conservation Division on February 8, 2001 and after notice and hearing as required by law, the Division enter its Order granting this application.

Respectfully submitted,

HOLLAND & HART
AND
CAMPBELL & CARR

By: 
WILLIAM F. CARR
Post Office Box 2208
Santa Fe, New Mexico 87504
Telephone: (505) 988-4421

ATTORNEYS FOR TEXACO EXPLORATION
& PRODUCTION INC.

VACUUM GRAYBURG SAN ANDRES UNIT

Well within Proposed CO₂ Target Area

Producers			Injectors	
VGSAU Well	API Well Number	Count	VGSAU Well	API Well Number
1	3002521634	1	4	3002524332
2	3002521421	2	5	3002524333
3	3002502326	3	14	3002524359
6	3002521420	4	15	3002524378
7	3002502277	5	16	3002524308
8	3002502275	6	17	3002524316
9	3002502274	7	18	3002524317
10	3002502258	8	19	3002524331
11	3002502257	9	20	3002524360
12	3002502259	10	31	3002524314
13	3002502260	11	32	3002524330
21	3002502276	12	33	3002524323
22	3002502273	13	34	3002524312
23	3002502272	14	35	3002524361
24	3002502271	15	46	3002524364
25	3002502256	16	47	3002524365
26	3002502255	17	48	3002524322
27	3002502254	18	49	3002524329
28	3002502253	19	50	3002524366
38	3002502265	20	63	3002527974
39	3002502264	21	68	3002502110
40	3002502252	22	146	3002530846
41	3002502249	23	147	3002530798
42	3002502245	24	148	3002530799
43	3002502247	25	149	3002530847
52	3002502267	26	150	3002530917
53	3002502262	27		
54	3002502263	28		
55	3002502250	29		
56	3002502251	30		
57	3002502248	31		
58*	3002502246	32		
59	3002533464	33		
122**	3002530721	34		
126	3002532026	35		
127	3002532027	36		
128	3002532028	37		
139	3002530755	38		
140	3002530756	39		
141	3002530797	40		
142	3002530843	41		

143	3002530844	42		
153	3002530802	43		
154	3002530801	44		
155	3002530800	45		
156	3002530851	46		
157	3002530717	47		
158	3002530718	48		
212	3002532004	49		
227	3002531993	50		
258	3002532009	51		

* P&A'd well

** Well to be converted to injection



Texaco Exploration
and Production Inc

500 North Lorraine
Midland TX 79701

P.O. Box 3100
Midland TX 79702

DATE: January 4, 2001

TO: ALL WORKING INTEREST OWNERS

SUBJECT: Amendment to Vacuum (Grayburg-San Andres)
Cooperative Water Injection Agreement
Central Vacuum Unit
Lea County, New Mexico

Ladies and Gentlemen:

Please find attached your copy of the captioned Amendment to allow for the expansion of our successful CO₂ injection operations to the common boundary between the Central Vacuum Unit and the Vacuum Grayburg-San Andres Unit.

J. M. (Jeff) Woliver
Asset Team Manager – Permian CO₂

EXHIBIT B

**AMENDMENT TO VACUUM (GRAYBURG-SAN ANDRES)
COOPERATIVE WATER INJECTION AGREEMENT**

THIS AMENDMENT shall be effective as of January 1, 2001, by and between the Central Vacuum Unit, represented by Texaco Exploration and Production Inc. , as Unit Operator, hereinafter referred to as "Unit Operator", and the Vacuum Grayburg-San Andres Unit, represented by Texaco Exploration and Production Inc. , as Unit Operator, hereinafter referred to as "Texaco".

WITNESSETH:

WHEREAS, Unit Operator and Texaco are parties to that certain Vacuum (Grayburg-San Andres) Cooperative Water Injection Agreement, dated April 14, 1978, hereinafter referred to as "Agreement", providing for injection of water into the Grayburg-San Andres formation through various wells (Central Vacuum Unit Wells numbered 133 through 141) located in Townships 17 South and 18 South, Ranges 34 East and 35 East, Lea County, New Mexico. A copy of the Agreement is attached hereto.

WHEREAS, Unit Operator has initiated a project for the injection of CO₂, produced gas, and water in the Central Vacuum Unit.

WHEREAS, Unit Operator and Texaco desire to inject CO₂ and/or produced gas through certain water injection wells subject to the Agreement.

WHEREAS, Unit Operator and Texaco have secured adequate CO₂ supply for their respective Units.

WHEREAS, Unit Operator has an existing agreement with the Buckeye CO₂ Processing Plant for the processing and redelivery of Central Vacuum Unit contaminated produced gas.

WHEREAS, Texaco intends to secure an agreement with the Buckeye CO₂ Processing Plant for the processing and redelivery of Vacuum Grayburg-San Andres Unit contaminated produced gas.

NOW THEREFORE, in consideration of the premises it is agreed that the Agreement is amended as follows:

CO₂, produced gas, water, or any combination thereof, are acceptable injectants for all water injection wells identified in the Agreement.

When an injection well is on its water cycle, Unit Operator will continue to provide the necessary injection water from the Central Vacuum Injection System, as per the Agreement. When an injection well is on a gas (aka solvent) cycle, Unit Operator will deliver the necessary CO₂ and/or produced gas through the Central Vacuum Injection System. The respective working interest owners of the Central Vacuum Unit and the Vacuum Grayburg-San Andres Unit reserve the right to supply in-kind CO₂ and/or produced gas for their proportionate share of each well's volumes. Further, Unit Operator will coordinate the necessary volumes of in-kind CO₂ and/or produced gas to be delivered to the Central Vacuum Injection System. In-kind deliveries of CO₂ and/or produced gas into the Central Vacuum Injection System will only be allowed if pressures, rates, concentrations, temperatures and delivery point(s) are acceptable to Unit Operator.

Determination of the injected solvent volume allocated to the injection wells will be by the following procedure and formula:

Metering on the injection wells will be through common turbine meters, or future technologies as approved by both parties. Monthly solvent injection volume allocations will be factored to the injection wells based on a ratio of the Unit's total volume of solvent metered through the Llano Pipeline CVU CO2 Delivery Meter plus the Buckeye CO2 Processing Plant re-delivery volumes into the Central Vacuum Injection System to the aggregate of all individual Unit solvent well meters.

The fraction of purchased solvent will be calculated as follows:

$$V_p / (V_r + V_p) = \text{fraction of total solvent injection purchased}$$

Where, V_r = Buckeye CO2 Processing Plant re-delivery meter volumes
 V_p = Llano Pipeline's CO2 Delivery Meter volume

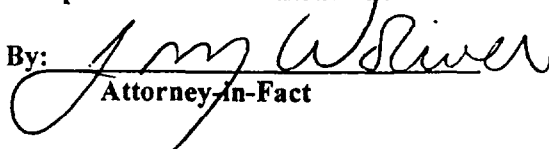
The fraction of recycled solvent will be the difference between one (1) and the previously calculated fraction of total solvent injection purchased.

All Vacuum Grayburg-San Andres Unit volumes will be considered "purchased" until such time as the Vacuum Grayburg-San Andres Unit elects to allocate produced gas from the Buckeye CO2 Processing Plant to the Central Vacuum Injection System. It is intended that all Vacuum Grayburg-San Andres Unit volumes will be in-kind deliveries, either purchased CO2, produced gas, or any combination thereof.

Except as expressly herein amended the Agreement as originally written shall remain in full force and effect. In the event any conflict between the provisions of this Amendment and the provisions of the Agreement, the provisions of this Amendment shall govern.

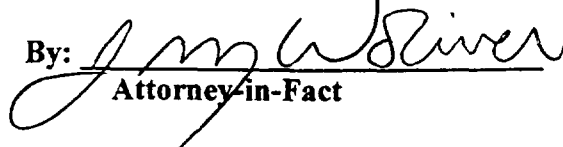
Texaco Exploration and Production Inc.
as Operator of the Central Vacuum Unit

By:


Attorney-in-Fact

Texaco Exploration and Production Inc.
as Operator of the Vacuum Grayburg-San Andres Unit

By:


Attorney-in-Fact

COOPERATIVE WATER INJECTION AGREEMENT

THIS AGREEMENT, entered into effective as of the date of execution, to be known as the Vacuum (Grayburg-San Andres) Cooperative Water Injection Agreement, by and between the Central Vacuum Unit, represented by Texaco Inc. as Unit Operator, herein-after referred to as "Unit Operator", and the Vacuum Grayburg-San Andres Unit, represented by Texaco Inc. as Unit Operator, herein-after referred to as "Texaco",

W I T N E S S E T H:

WHEREAS, Unit Operator is the Operator of the Central Vacuum Unit covering certain leases and lands, located in Townships 17 South and 18 South, Ranges 34 East and 35 East, Lea County, New Mexico, as more particularly described in the Central Vacuum Unit Agreement to which reference is made for purposes of description; and

WHEREAS, Texaco is the Operator of the Vacuum Grayburg-San Andres Unit covering, among other lands, the following described land in Lea County, New Mexico:

Section 1, Township 18 South, Range 34 East, Lea County, New Mexico, as more particularly described in the Vacuum Grayburg-San Andres Unit Agreement to which reference is made for purposes of description;

and

WHEREAS, Unit Operator and Texaco desire to provide for the operation of water injection wells on or near the common boundary of the Central Vacuum Unit and the Vacuum Grayburg-San Andres Unit, and to provide for the injection of water into the underlying Grayburg-San Andres formation through said injection wells so that the leases and lands mentioned above will be benefited by an increase in the production of crude oil.

NOW, THEREFORE, in consideration of the premises it is agreed as follows:

1. Unit Operator, as soon as practical following the effective date of this agreement agrees to drill, complete and equip nine (9) water injection wells in the Grayburg-San Andres formation at the approximate locations shown on the plat attached hereto as Exhibit "A", and with location descriptions and Working Interest Ownership percentages tabulated on Exhibit "B", also attached and made a part hereof for all purposes.

The term "injection well" shall mean any and all injection wells described and identified herein. Unit Operator shall operate any and all water injection wells and furnish suitable water as required for injection through the Central Vacuum Unit

water injection system. Injection of water into any of the injection wells covered by this agreement in the Grayburg-San Andres formation shall be at such rates and at such pressures that will comply with the rules and regulations of the New Mexico Oil Conservation Commission.

2. Unit Operator agrees to advance all costs and expenses incurred in connection with drilling, completing and equipping the wells which they shall drill hereunder and shall charge Texaco with the ownership percentage shown for each well in Exhibit "B" of all such costs and expenses on the basis provided for herein.

3. Upon drilling, completing and equipping the wells provided for above, each injection well will be operated by Unit Operator with Texaco to be charged the percentage of all operating costs and expenses on the basis provided for herein and in accordance with the ownership percentage shown in Exhibit "B" for each well.

4. Unit Operator agrees to furnish water suitable for injection purposes through the Central Vacuum Injection System at the price and on the basis hereinafter set forth. The water delivered hereunder to the injection well by Unit Operator shall be measured by standard type water metering equipment installed and operated by Unit Operator.

5. For proration purposes, each party will be entitled to receive credit for all water injected, through the injection wells in accordance with their ownership in each of the individual injection wells covered by this agreement.

6. It is agreed by the parties hereto that the payments to be made for water delivered by Unit Operator to the injection wells are intended to reimburse Unit Operator as nearly as possible for Texaco's proportionate share of the costs and expense actually incurred by Unit Operator in acquiring, transporting and furnishing such water to the injection well site, it being intended that Unit Operator shall not make a profit from the operations conducted hereunder. The rate of \$0.02 per barrel shall be used in determining charges for injection water for the first year of operation. The first year of operation shall commence the first day of the month in which injection was initiated. At the end of the first year of operation, Unit Operator's actual costs and expenses of acquiring, transporting and delivering said water under the terms of this agreement shall be computed for the first year to determine the actual cost or rate per barrel, and Texaco's share of such costs shall, by mutual agreement, be retroactively adjusted so as to be based on the actual costs and expenses for such year. If Texaco's share of the actual costs and expenses is less than the estimated charge provided for the first year, then appropriate reimbursement shall be made by Unit Operator for the overpayment, but if Texaco's share exceeds the estimated charge provided for the first year, then Texaco agrees to reimburse Unit Operator for its applicable share of such costs and expenses as actually accrued for the first year. The actual rate per barrel determined in the manner provided then shall be the rate for the next ensuing year; provided that Unit Operator may make use of the experience base

developed hereunder to project costs and expenses and set a reasonable rate per barrel for ensuing year or period. It is further understood that Unit Operator may at any time recalculate its actual cost of acquiring, transporting and delivering water to the injection well sites for any subsequent year or twelve (12) months' period in the manner provided for the first year, and if it should occur that the rate for charges again should be adjusted, then Unit Operator shall so notify Texaco of such adjustment. Any new rate based upon the recalculation by Unit Operator shall become effective as of the first day of the calendar month following the date that Texaco is notified thereof, and there shall be a retroactive adjustment for such prior period. This same procedure shall be followed during the term of this agreement.

7. The term of this agreement shall commence as of the date hereof and shall continue for so long as oil and gas are produced from the leases which cover the above described lands. At any time that a party hereto shall be of the opinion that the water injection operation being conducted hereunder is no longer economically profitable to that party, then said party shall have the right to terminate its participation in the water injection operations upon giving thirty (30) days advance written notice to the other party of this intention to terminate participation. The other party hereto then shall have the option at its risk and expense to take over and operate the water injection wells. In such event, the party taking over the water injection wells is to be granted the right of ingress and egress to said injection wells, together with rights-of-way and easements necessary to continue operation of the water injection wells, but this grant is to be made without representation and any warranty whatsoever and only insofar as the terminating party then can legally make such a grant. The party taking over operations of the water injection wells shall pay the other party for its proportionate part of the equipment therein on the basis of the current salvage value thereof in place, and when said party wishes to discontinue the water injection operations, such party shall plug and abandon the water injection wells in compliance with all contractual obligations and rules and regulations of each governmental body having jurisdiction, at its sole cost, risk and expense. The party taking over said wells hereby shall indemnify and hold the other party hereto harmless from and against any and all claims, charges, suits and any liabilities arising out of or in any way associated with subsequent operations. The parties agree to execute and deliver, each to the other, such instruments or assurances as may be required to accomplish its intents and purposes of this article.

8. In the event that any party hereto is rendered unable, wholly or in part, by force majeure to carry out its obligations under this agreement, other than the obligation to make payments of amounts due hereunder, upon such party's giving notice and reasonably full particulars of such force majeure in writing or by telegraph to the other party or parties hereto within a reasonable time after the occurrence of the cause relied upon, the obligations of the party giving said notice, insofar as they are affected by such force majeure, shall be suspended during the continuance of any inability so caused, but for no longer period; and the cause of the force majeure so far as possible shall be remedied with all reasonable dispatch.

The term "force majeure" as employed herein shall mean an act of God, strike, lockout or other industrial disturbance, act of the public enemy, war, blockade, riot, lightning, fire, storm, flood, explosion, governmental restraint, failure of water supply, and any other cause, whether of the kind herein enumerated or otherwise, not reasonably within the control of the party claiming suspension.

The settlement of strikes, lockouts, and other labor difficulties shall be entirely within the discretion of the party having the difficulty. The above requirement that any force majeure shall be remedied with all reasonable dispatch shall not require the settlement of strikes, lockouts or other labor difficulty by acceding to the demands of opponents therein when such course is inadvisable in the discretion of the party having the difficulty.

9. The rights, duties, obligations and liabilities of the parties hereto shall be several, and not joint or collective, and nothing herein contained shall ever be construed as creating a partnership of any kind, joint venture, an association or a trust or as imposing upon any or all of the parties hereto a partnership duty, obligation or liability. Each party hereto shall be individually responsible only for its obligations, as set out in this agreement.

Each party hereby elects to be excluded from the application of Sub-chapter "K" of Chapter 1 of Subtitle "A" of the Internal Revenue Code of 1954, insofar as such Sub-chapter or any portion or portions thereof may be applicable to the parties in respect to the operations covered by this agreement. Operator is hereby authorized and directed to execute on behalf of each of the parties hereto such additional or further evidence of such election as may be required by regulations issued under such Sub-chapter "K", or should said regulations require each party to execute such further evidence, each party agrees to execute such evidence or to join in the execution thereof.

10. All of the wells described above are located on the Central Vacuum Unit. Subject to the terms hereof, it is intended that these wells are to be operated as Central Vacuum Unit wells. Both parties expressly recognize that to accomplish the intents and purposes of takeover as described by Paragraph 7, Texaco must have, hold and be entitled to exercise the same rights of entry, occupancy, use and control of the Central Vacuum Unit as Unit Operator has, holds and would be entitled if it were to continue to operate said wells on its Unit under this agreement. Such rights include, but are not limited to, ingress and egress to the Unit premises so as to be able to equip and take over operation of the jointly-owned wells located thereon, the right to use and occupy so much of the surface of the Unit premises as is required for the well locations and access thereto by roads and other means so as to be able to move in a drilling and/or workover rig and related equipment and material, and to lay water lines and inject water into said wells hereunder. Unit Operator, subject to the terms and provisions of this agreement, hereby grants to Texaco such rights, specifically empowering Texaco to make use of such rights hereunder including, but not limited to, those which Unit Operator has and holds under any lease, easement, right-of-way

agreement, or other agreement. Unit Operator further agrees to execute and deliver to Texaco such a grant in recordable form if this becomes necessary or desirable and/or to join with Texaco in executing any such agreement of a similar nature which may be necessary or desirable in this connection. However, Unit Operator is and shall remain Operator of the Central Vacuum Unit in all respects except to the extent of the limited grant provided herein under which said jointly-owned wells on such Unit as a matter of operational convenience are to be equipped and operated by Unit Operator under the terms and provisions of this agreement.

11. The terms and provisions hereof shall be binding upon and shall inure to the benefit of the parties hereto and their respective successors, legal representatives and assigns.

IN WITNESS WHEREOF, the parties hereto have executed this agreement this 14th day of April, 1978.

APPROVED AS TO:

Contract: 6217/oddt
Terms: WT
Form: 8937/1/1
Acctg: WCH

TEXACO INC.
as Operator of the Central
Vacuum Unit

BY A. F. Clarke
Attorney-in-Fact

TEXACO INC.
as Operator of the Vacuum
Grayburg-San Andres Unit

BY A. F. Clarke
Attorney-in-Fact

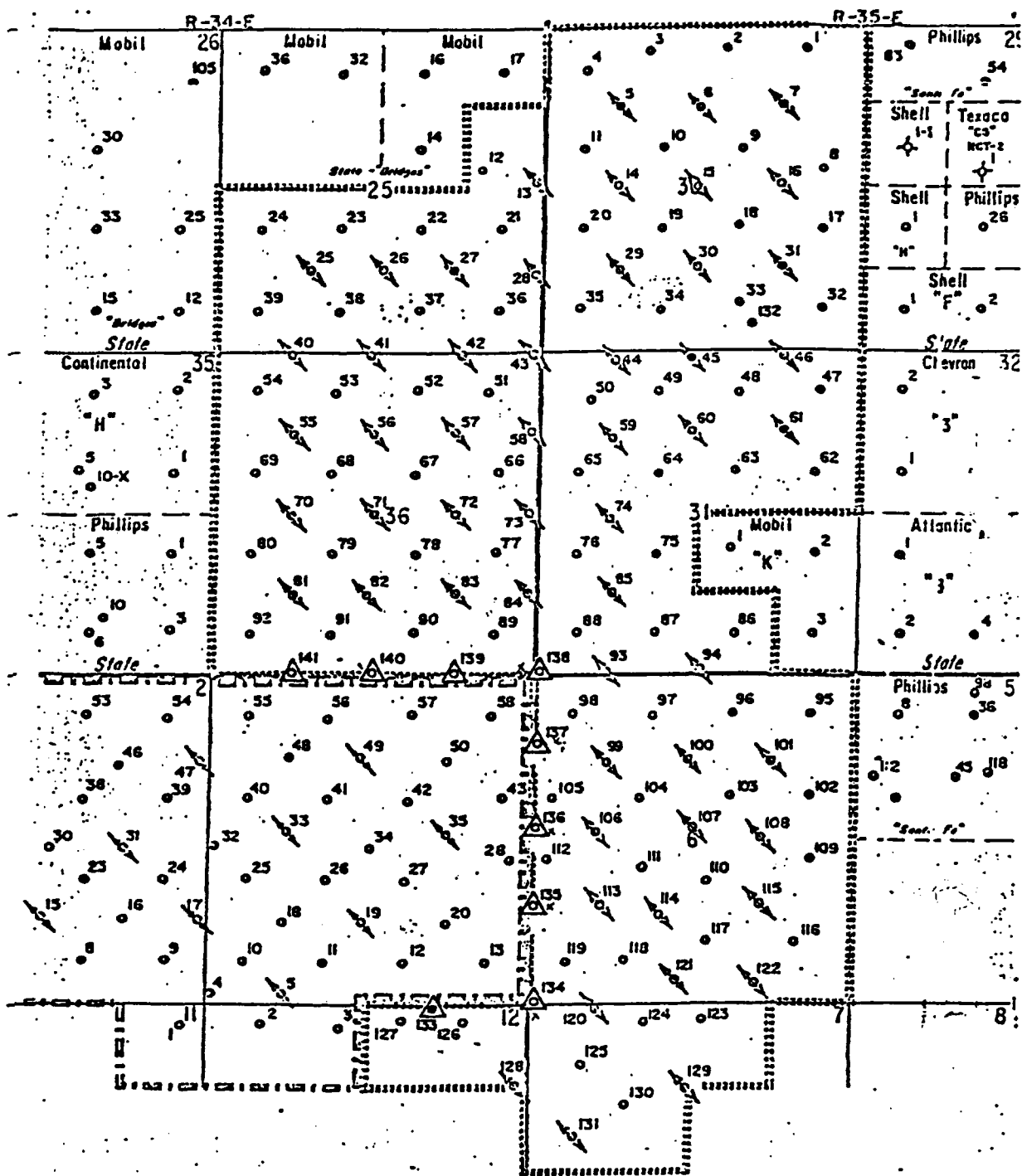


EXHIBIT "A"

COOPERATIVE WATER INJECTION AGREEMENT
 VACUUM GRAYBURG-SAN ANDRES UNIT
 & CENTRAL VACUUM UNIT
 VACUUM (GRAYBURG-SAN ANDRES) POOL
 LEA COUNTY, NEW MEXICO

- △ COOPERATIVE WATER INJECTION WELLS
TO BE DRILLED BY THE CENTRAL VACUUM UNIT
- CENTRAL VACUUM UNIT BOUNDARY
- — — — — VACUUM GRAYBURG-SAN ANDRES UNIT BOUNDARY

EXHIBIT "B"

Vacuum (Grayburg-San Andres) Cooperative Water Injection Agreement between Central Vacuum Unit and Vacuum Grayburg-San Andres Unit Lea County, New Mexico

<u>Well No.</u>	<u>Well Location</u>	<u>Ownership</u>
133	10' FNL & 1550' FEL, Section 12 T18S - R34E	CVU - 50%, VGSAU - 50%
141	10' FSL & 1310' FWL, Section 36	CVU - 50%, VGSAU - 50%
140	10' FSL & 2630' FWL, Section 36	CVU - 50%, VGSAU - 50%
139	10' FSL & 1310' FEL, Section 36 All in T17S - R34E	CVU - 50%, VGSAU - 50%
138	10' FSL & 10' FWL, Section 31 T17S - R35E	CVU - 75%, VGSAU - 25%
137	10' FWL & 1100' FNL, Section 6	CVU - 50%, VGSAU - 50%
136	10' FWL & 2450' FNL, Section 6	CVU - 50%, VGSAU - 50%
135	10' FWL & 1600' FSL, Section 6	CVU - 50%, VGSAU - 50%
134	10' FWL & 10' FSL, Section 6 All in T18S - R35E	CVU - 75%, VGSAU - 25%

Note: CVU - Central Vacuum Unit
VGSAU - Vacuum Grayburg-San Andres Unit



Texaco Exploration and Production Inc.
Permian Business Unit

TEPI Permian Unit
Midland, TX 79701

100 E. Broadway
Midland, TX 79701

January 15, 2001

Lori Wrotenbery, Director
Oil Conservation Division
New Mexico Department of Energy
Minerals and Natural Resources
State Land Office Building
2040 South Pacheco St.
Santa Fe, New Mexico 87505

Re: Application of Texaco Exploration and Production Inc. for Enhanced Oil Recovery Project Qualification for the Recovered Oil Tax Rate at Vacuum Grayburg San Andres Unit, Lea County, New Mexico

Dear Mr. LeMay:

Texaco Exploration and Production Inc. (TEPI) hereby makes application to qualify a portion of Vacuum Grayburg San Andres Unit (VGSAU) for the recovered oil tax rate as authorized by the Enhanced Oil Recovery Act. TEPI plans to commence construction on delivery and gathering facilities, contract for delivery of injectants, and upgrade existing installations in a timeline which will allow initiation of a miscible CO₂ flood during the first quarter of 2001. TEPI is making application pursuant to the rules promulgated by Commission Order No. R-9708 entered on August 27, 1992.

In accordance with this Order, TEPI provides the following information:

a. Operator's name and address:

Texaco Exploration and Production Inc.
P.O. Box 3109 or 500 N. Loraine
Midland, TX 79702 Midland, TX 79701

b. Description of project area:

1. Provide a plat outlining the project area;

See Exhibit "A" for a plat of the project area.

2. Describe the project area by section, township and range;

The following Table identifies the acreage within the boundaries of the VGSAU.

Township & Range	Section	Description
T18S-R34E	Sec. 1	ALL
	Sec. 2	ALL
	Sec. 11	NE/4 NE/4
	Sec. 12	N/2 NW/4
T17S-R34E	Sec. 35	W/2 SW/4

The proposed project will impact only 86% of the VGSAU acreage and is more accurately

identified as those injection patterns highlighted on **Exhibit "A"**, which include those wells listed in **Exhibit "B"**.

3. Total acres;

The VGSAU contains a total of 1,486 Acres (m/l).

TEPI is targeting 1,280 Acres (m/l) for the CO₂ project. This area is highlighted on **Exhibit "A"**.

4. Provide the name of the subject pool and formation.

The VGSAU is within the Vacuum Field.

The VGSAU is unitized within portions of the Grayburg and San Andres Formations.

The type-log identified in the Unit Agreement is reproduced as **Exhibit "C"**.

c. Status of operations in the project area:

1. Provide the name of the unit and the date and number of the Division Order approving the unit plan of operation;

The proposed CO₂ project is at the TEPI operated Vacuum Grayburg San Andres Unit (VGSAU).

The Commission approved the VGSAU on November 8, 1972 with Order No. R-4443.

The VGSAU pressure maintenance project was further ruled on with Order No's. R-4433-A (11-08-72); R-4422 (11-27-72); R-6094 (09-01-79); and R-7010 (07-01-82).

d. Method of recovery to be used:

1. Identify fluids to be injected; and

Recovery is to be enhanced with the introduction of Carbon Dioxide (CO₂). Produced gases will be recycled (reinjectd). Water will continue to be injected outside of the target area, and in the target area with alternating slugs with the CO₂ in what industry calls a WAG injection scenario.

2. If the Division has not approved the project, provide the date the application for approval was filed with the Division on Form C-108.

A supplemental C-108 is provided with this Application dated January 15, 2001.

e. Description of the project:

1. A list of producing wells;

See **Exhibit "B"** for a listing of the 51 existing producers within the project target area.

There are currently no plans to drill additional producing wells.

2. A list of injection wells;

See **Exhibit "B"** for a listing of the 26 existing injectors within the project target area.

There are currently no plans to drill additional injection wells.

3. Capital cost of additional facilities;

Description	Cost, \$ Million*
Field Installations/Upgrades	6.6
Well Remediation & Misc.	2.0
CO ₂ Injectant Purchase	50.7
Separation/Compression Facility	0.0
Injectant Recycle Cost	34.2

* current dollars.

4. Total project cost;

The project will cost a total of \$93.5 Million inclusive of associated injectant expenses. Of this total, \$8.6 Million will go toward facilities and well work on the VGSAU.

5. Provide the estimated total value of the additional production that will be recovered as a result of this project;

An additional 14.4 Million STB of Oil are anticipated to be recovered, along with 19.3 Bscf of hydrocarbon gas as a result of the project. Based on an average posted of \$23.00/STB for West Texas intermediate sour crude oil, and an equivalent barrel basis of 6 Mscf/STB oil, the estimated value of the hydrocarbons produced from the proposed project is \$404.7 Million.

6. Provide anticipated date for commencement of injection; and

The anticipated initial CO₂ injection date is April 1, 2001.

7. What type of fluid will be injected and what are the anticipated volumes?

A total of 93 Bscf of CO₂ will be purchased for the project. Produced gases will be recycled back to the reservoir resulting in an ultimate injection of 163 Bscf of gas during a 50 year period. The recycled gas would consist of CO₂, certain hydrocarbons that cannot be economically marketed, and associated non-hydrocarbon gases. The injection scheme to be employed is known as a WAG, or water-alternating-gas injection. Alternating slugs of gas and slugs of water would be introduced in varying volumes with the length of injection (time) dependent upon reservoir response.

f. Production data: Provide graphs, charts and other supporting data to show the production history and production forecast of oil, gas, casinghead gas and water from the project area.

Exhibit "D" provides the VGSAU production and injection history along with the forecast of enhanced recovery due to the introduction of CO₂.

TEPI requests that this application be set for hearing, and with no objections, be approved.

Very truly yours,



Robert J. Boomer
Project Engineer

RJB/
Attachments

***** EXHIBIT "B" *****

Vacuum Grayburg San Andres Unit

Wells within Proposed CO₂ Target Area

PRODUCERS			INJECTORS	
VGSAU Well No.	API Well No.	Count	VGSAU Well No.	API Well No.
1	3002521634	1	4	30025243321
2	3002521421	2	5	3002524333
3	3002502326	3	14	3002524359
6	3002521420	4	15	3002524378
7	3002502277	5	16	3002524308
8	3002502275	6	17	3002524316
9	3002502274	7	18	3002524317
10	3002502258	8	19	3002524331
11	3002502257	9	20	3002524360
12	3002502259	10	31	3002524314
13	3002502260	11	32	3002524330
21	3002502276	12	33	3002524323
22	3002502273	13	34	3002524312
23	3002502272	14	35	3002524361
24	3002502271	15	46	3002524364
25	3002502256	16	47	3002524365
26	3002502255	17	48	3002524322
27	3002502254	18	49	3002524329
28	3002502253	19	50	3002524366
38	3002502265	20	63	3002527974
39	3002502264	21	68	3002502110
40	3002502252	22	146	3002530846
41	3002502249	23	147	3002530798
42	3002502245	24	148	3002530799
43	3002502247	25	149	3002530847
52	3002502267	26	150	3002530917
53	3002502262	27		
54	3002502263	28		
55	3002502250	29		
56	3002502251	30		
57	3002502248	31		
58*	3002502246	32		
59	3002502246	33		
122**	3002530721	34		
126	3002532026	35.		
127	3002532027	36		
128	3002532028	37		
139	3002530755	38		
140	3002530756	39		
141	3002530797	40		

142	3002530843	41		
143	3002530844	42		
153	3002530802	43		
154	3002530801	44		
155	3002530800	45		
156	3002530851	46		
157	3002530717	47		
158	3002530718	48		
212	3002532004	49		
227	3002531993	50		
258	3002532009	51		

* P&A'd well

* Well to be converted to injection

EXHIBIT D

**APPLICATION OF TEXACO EXPLORATION & PRODUCTION INC.
FOR AMENDMENT OF DIVISION ORDER NO. R-4442, AS AMENDED,
TO AUTHORIZE A TERTIARY RECOVERY PROJECT BY THE
INJECTION OF CARBON DIOXIDE IN ITS
VACUUM GRAYBURG-SAN ANDRES UNIT PRESURE MAINTENANCE
PROJECT AREA, APPROVAL OF AMENDMENT OF THE
COOPERATIVE WATER INJECTION AGREEMENT BETWEEN
THE CENTRAL VACUUM UNIT AND THE
VACUUM GRAYBURG-SAN ANDRES UNIT,
AND QUALIFICATION OF THE PROJECT FOR
THE RECOVERED OIL TAX RATE PURSUANT
TO THE ENHANCED OIL RECOVERY ACT,
LEA COUNTY, NEW MEXICO.**

NOTICE LIST

Apache Corporation
2000 post Oak Blvd.
Suite 100
Houston, Texas 77056-4400
Attention: Production Department

Bank One Texas NA, Trustee of the
Martha Leonard Trust 75-6356886
Post Office Box 2050
Fort Worth, Texas 76113

Bank One Texas NA, Trustee of the
Mary Leonard Childrens Trust 75-6412990
Post Office Box 2050
Fort Worth, Texas 76113

Bank One Texas NA, Trustee of the
Miranda Leonard Trust 75-6356894
Post Office Box 2050
Fort Worth, Texas 76113

H. M. Bettis, Inc.
Bettis, Boyle & Stovall
Post Office Box 1240
Graham, Texas 79046

W. T. Boyle & Co.
Bettis, Boyle & Stovall
Post Office Box 57
Graham, Texas 79046

Madelon L. Bradshaw
2120 Ridgemar, Blvd., Suite 12
Fort Worth, Texas 76116

Ann McBee Buell
11241 Russwood Circle
Callas, Texas 75229

Exxon Mobil Corporation
Post Office Box 4697
Houston, Texas 77210-4697

Exxon Mobil Production Company
Joint interest Lower 48
Post Office Box 4707
Houston, Texas 77210-4707

Frisco Energy LLC
2431 East 51st Street
Suite 300
Tulsa, Oklahoma 74105

Larry O. Hulsey
Post Office Box 1143
Graham, Texas 79046

Marathon Oil Company
Joint Interest Representative
Post Office Box 552
Midland, Texas 79702

McBee Operating Co. LLC
3738 Oak Lawn Avenue, L.B. 200
Dallas, Texas 75219

Willaim D. McBee Jr.
c/o Michael B. McBee
5942 Averill Way
Dallas, Texas 75225

OXY Permian, Ltd.
Post Office Box 4294
Houston, Texas 77210-4294

Phillips Petroleum Company
4001 Penbrook
Odessa, Texas 79762
Attention: Fred Kent

S.B.Street & Co.
Post Office Box 206
Graham, Texas 79046
Attention: Spencer Street

Norman D. Stovall, Jr.
Post Office Box 10
Graham, Texas 79046

Toreador Royalty Corp.
4809 Cole Avenue, Suite 108
Dallas, Texas 75205

Turnco, Inc.
Bettis, Boyle & Stovall
Post Office Box 1240
Graham, Texas 79046

CO-OWNER REPORT

WEST VACUUM UNIT PH II O/A

FRS ID: 333000061020312

03-Jan-01

KEY CODE: 006868

PAGE: 1

CO-OWNER: 004645

AUVENSHINE CHILD TEST TRUST
CATHIE CONE MCCOWN TRUSTEE
P. O. BOX 507
DRIPPING SPRINGS TX 78620-0507

GW: 0.00077201

ANALYSIS: 081001

CO-OWNER: 004648

CATHIE CONE MCCOWN
P O BOX 658
DRIPPING SPRINGS TX 78620-0658

*

*

GW: 0.00077201

ANALYSIS: 081001

CO-OWNER: 005630

ANNE TODD BARFIELD
P O BOX 738
WIMBERLY TX 78676

GW: 0.00017835

ANALYSIS: 081001

CO-OWNER: 011772

BTA OIL PRODUCERS
104 S PECOS
MIDLAND TX 79701

GW: 0.0145804

ANALYSIS: 081001

CO-OWNER REPORT

WEST VACUUM UNIT PH II O/A

FRS ID: 333000061020312

03-Jan-01

KEY CODE: 006868

PAGE: 2

CO-OWNER: 015069

A C CASTLE
111 BENT OAK SHAVANO PARK
SAN ANTONIO TX 78231

GWI: 0.00055145

ANALYSIS: 081001

CO-OWNER: 015718

CHASE OIL CORPORATION
P O BOX 1767
ARTESIA NM 88211-1767

GWI: 0.011289

ANALYSIS: 081001

CO-OWNER: 018258

TOM R CONE TRUSTEE
U/W KATHLEEN CONE
C/O BANK OF OK SUCCESSOR TRUST
P O BOX 1588
TULSA OK 74101-1588

GWI: 0.00077201

ANALYSIS: 081001

CO-OWNER: 018259

KENNETH G CONE TRUSTEE
U/W KATHLEEN CONE
P. O. BOX 11310
MIDLAND TX 79702

GWI: 0.00077201

ANALYSIS: 081001

CO-OWNER REPORT

WEST VACUUM UNIT PH II O/A

FRS ID: 333000061020312

03-Jan-01

KEY CODE: 006868

PAGE: 3

CO-OWNER: 018268

KENNETH G. CONE

P O BOX 11310

MIDLAND TX 79702

GWI: 0.00077201

ANALYSIS: 081001

CO-OWNER: 018269

TOM R. CONE

P O BOX 778

JAY OK 74346

GWI: 0.00077201

ANALYSIS: 081001

CO-OWNER: 018279

CLIFFORD CONE WORKING INT CORP

POST OFFICE DRAWER 1629

LOVINGTON NM 88260

GWI: 0.00231603

ANALYSIS: 081001

CO-OWNER: 019559

LOMETA HUDNALL COX TRUST NO. 2

100 E. FERGUSON SUITE 700

TYLER TX 75702-5755

*

*

GWI: 0.00090275

ANALYSIS: 081001

CO-OWNER REPORT

WEST VACUUM UNIT PH II O/A

FRS ID: 333000061020312

03-Jan-01

KEY CODE: 006868

PAGE: 4

CO-OWNER: 025748

CHARLES H DAVIS JR

P O BOX 906

HOMER AK 99603

GWI: 0.00006893

ANALYSIS: 081001

CO-OWNER: 025751

GLYNNA F DAVIS

120 N. LA CUMBRE RD. APT. 7

SANTA BARBARA CA 93110-1636

*

*

GWI: 0.00027572

ANALYSIS: 081001

CO-OWNER: 025861

JOEL H. DAVIS

*

*

*

*

GWI: 0.00006893

ANALYSIS: 081001

CO-OWNER: 025862

JOHN A DAVIS

2270 SANTIAGO RD

SANTA BARBARA CA 93103-1752

GWI: 0.00013786

ANALYSIS: 081001

CO-OWNER REPORT

WEST VACUUM UNIT PH II O/A

FRS ID: 333000061020312

03-Jan-01

KEY CODE: 006868

PAGE: 5

CO-OWNER: 031225

Fagadau Energy Corp.

4849 Greenville Ave Suite 1600

Dallas TX 75206

*

*

GWI: 0.07425191

ANALYSIS: 081001

CO-OWNER: 032630

FLOYD OIL COMPANY

TWO SHELL PLAZA

777 WALKER SUITE 2400

HOUSTON TX 77002

GWI: 0.0548951

ANALYSIS: 081001

CO-OWNER: 040394

HEADINGTON OIL COMPANY LP

A TEXAS LIMITED PARTNERSHIP

7557 RAMBLER ROAD SUITE 1100

DALLAS TX 75231

GWI: 0.02117015

ANALYSIS: 081001

CO-OWNER: 042905

OGDEN SHARON HUDNALL TRUST I

100 E. FERGUSON SUITE 703

TYLER TX 75702-5755

GWI: 0.00090275

ANALYSIS: 081001

CO-OWNER REPORT

WEST VACUUM UNIT PH II O/A

FRS ID: 333000061020312

03-Jan-01

KEY CODE: 006868

PAGE: 6

CO-OWNER: 047963

KEVIN O BUTLER & ASSOCIATES

500 WEST TEXAS #955

MIDLAND TX 79701

GWI: 0.00390799

ANALYSIS: 081001

CO-OWNER: 050053

LWJ PARTNERSHIP

DOUGLAS L. CONE TRUSTEE

P O BOX 64244

LUBBOCK TX 79464

GWI: 0.00077202

ANALYSIS: 081001

CO-OWNER: 053175

JANET ANNE LUPIA

*

*

*

*

GWI: 0.0000651

ANALYSIS: 081001

CO-OWNER: 054451

MANTI RESOURCES INC.

800 N. SHORELINE SUITE 2300

CORPUS CHRISTI TX 78401

GWI: 0.00058618

ANALYSIS: 081001

CO-OWNER REPORT

WEST VACUUM UNIT PH II O/A

FRS ID: 333000061020312

03-Jan-01

KEY CODE: 006868

PAGE: 7

CO-OWNER: 054517

MARATHON OIL
C/O MARATHON OIL COMPANY LLP
ATTN: TRANSACTION PROCESSING
P O BOX 2049
HOUSTON TX 77252-2049

GWI: 0.1342801

ANALYSIS: 081001

CO-OWNER: 063301

OBO INC.
P O BOX 22577
HIALEAH FL 33002
*
*

GWI: 0.0164978

ANALYSIS: 081001

CO-OWNER: 068445

ROBERT S PIRTLE
P O BOX 1310
TYLER TX 75710

GWI: 0.0018055

ANALYSIS: 081001

CO-OWNER: 075612

SANTA FE SNYDER CORPORATION
ATTN: JOINT VENTURE ACCTG.
550 WEST TEXAS AVE. SUITE 1330
MIDLAND TX 79701

GWI: 0.0091178

ANALYSIS: 081001

CO-OWNER REPORT

WEST VACUUM UNIT PH II O/A

FRS ID: 333000061020312

03-Jan-01

KEY CODE: 006868

PAGE: 8

CO-OWNER: 077645

MARGARET T SHERILL
4920 CARRIAGE ROAD
HOBBS NM 88240

GW: 0.00146629

ANALYSIS: 081001

CO-OWNER: 083167

STRIPER OIL CO
P O BOX 797035
DALLAS TX 79379-7035

GW: 0.0015474

ANALYSIS: 081001

CO-OWNER: 087497

GEORGIA LORRAIN TEMPLE
P O BOX 11392
MIDLAND TX 79702

GW: 0.0001394

ANALYSIS: 081001

CO-OWNER: 087766

TEXACO E & P INC
ROOM 228
MIDLAND TX

GW: 0.6337977

ANALYSIS: 000001

CO-OWNER REPORT

WEST VACUUM UNIT PH II O/A

FRS ID: 333000061020312

03-Jan-01

KEY CODE: 006868

PAGE: 9

CO-OWNER: 089105

HARRY L TODD JR
14017 TANGLEWOOD DR
DALLAS TX 75234

GWI: 0.00024972

ANALYSIS: 081001

CO-OWNER: 089106

WL & V TODD REVOCABLE TRUST
3612 EUCLID AVE
DALLAS TX 75205

GWI: 0.00291916

ANALYSIS: 081001

CO-OWNER: 089107

M SHER & T TODD JR JOINTLY
4920 N. CARRIAGE ROAD
HOBBS NM 88240-9757

GWI: 0.00000853

ANALYSIS: 081001

CO-OWNER: 089108

MARY ANNE TODD
P.O. BOX 2381
WIMBERLEY TX 78676

GWI: 0.00108402

ANALYSIS: 081001

CO-OWNER REPORT

WEST VACUUM UNIT PH II O/A

FRS ID: 333000061020312

03-Jan-01

KEY CODE: 006868

PAGE: 10

CO-OWNER: 089152

THOMAS E TODD JR

BOX 338

RUIDOSO NM 88345

--

GWI: 0.00146619

ANALYSIS: 081001

CO-OWNER: 089175

W L TODD JR

3612 EUCLID

DALLAS TX 75205

GWI: 0.0018773

ANALYSIS: 081001

CO-OWNER: 089177

RAY L. TODD

1107 SHAWNEE TRAIL

CARROLLTON TX 75007

*

*

GWI: 0.00024972

ANALYSIS: 081001

CO-OWNER: 089178

TOMMY TO TODD

7912 PURDUE

DALLAS TX 75225

GWI: 0.00024982

ANALYSIS: 081001

CO-OWNER REPORT

WEST VACUUM UNIT PH II O/A

FRS ID: 333000061020312

03-Jan-01

KEY CODE: 006868

PAGE: 11

CO-OWNER: 095698

WILDCARD FAMILY LIMITED PT
5500 W. PLANO PARKWAY STE 200
PLANO TX 75093

*

*

GWI: 0.00169087

ANALYSIS: 081001

TOTAL GWI: 100.00%

42592

CASE _____: Application of Texaco Exploration & Production Inc. for amendment of Division Order No. R-4442, as amended, to authorize a tertiary recovery project by the injection of carbon dioxide in its Vacuum Grayburg-San Andres Pressure Maintenance Project Area, approval of amendment if the cooperative water injection agreement between the Central Vacuum Unit and the Vacuum Grayburg-San Andres Unit, and qualification of the project for the Recovered Oil Tax Rate pursuant to the Enhanced Oil Recovery Act, Lea County, New Mexico. Applicant seeks approval to institute a tertiary recovery project in its Vacuum Grayburg-San Andres Unit Pressure Maintenance Project Area by the injection of carbon dioxide into the Grayburg and San Andres formations in the Vacuum-Grayburg-San Andres Pool. The Vacuum Grayburg-San Andres Pressure Maintenance Project encompasses portions of Section 35 of Township 17 South, Range 34 East and portions of Sections 1, 2, 11 and 12 of Township 18 South Range 35 East, N.M.P.M. Applicant also seeks to increase the approved surface injection pressure for carbon dioxide injection in this project area to 1850 pounds. Applicant further seeks to qualify the project area for the recovered oil tax rate pursuant to the "New Mexico Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5). Said unit is located approximately 22 miles northwest of Hobbs, New Mexico.



Texaco Exploration and Production Inc.
Permian Business Unit

100 North Loraine
Midland TX 79701

P.O. Box 3109
Midland TX 79702

January 15, 2001

Lori Wrotenbery, Director
Oil Conservation Division
New Mexico Department of Energy
Minerals and Natural Resources
State Land Office Building
2040 South Pacheco St.
Santa Fe, New Mexico 87505

Re: Application of Texaco Exploration and Production Inc. for Enhanced Oil Recovery Project Qualification for the Recovered Oil Tax Rate at Vacuum Grayburg San Andres Unit, Lea County, New Mexico

Dear Ms. Wrotenbery:

Texaco Exploration and Production Inc. (TEPI) hereby makes application to qualify a portion of Vacuum Grayburg San Andres Unit (VGSAU) for the recovered oil tax rate as authorized by the Enhanced Oil Recovery Act. TEPI plans to commence construction on delivery and gathering facilities, contract for delivery of injectants, and upgrade existing installations in a timeline which will allow initiation of a miscible CO₂ flood during the first quarter of 2001. TEPI is making application pursuant to the rules promulgated by Commission Order No. R-9708 entered on August 27, 1992.

In accordance with this Order, TEPI provides the following information:

a. Operator's name and address:

Texaco Exploration and Production Inc.
P.O. Box 3109 or 500 N. Loraine
Midland, TX 79702 Midland, TX 79701

b. Description of project area:

1. Provide a plat outlining the project area;

See Exhibit "A" for a plat of the project area.

2. Describe the project area by section, township and range;

The following Table identifies the acreage within the boundaries of the VGSAU.

Township & Range	Section	Description
T18S-R34E	Sec. 1	ALL
	Sec. 2	ALL
	Sec. 11	NE/4 NE/4
	Sec. 12	N/2 NW/4
T17S-R34E	Sec. 35	W/2 SW/4

The proposed project will impact only 86% of the VGSAU acreage and is more accurately

identified as those injection patterns highlighted on **Exhibit "A"**, which include those wells listed in **Exhibit "B"**.

3. Total acres;

The VGSAU contains a total of 1,486 Acres (m/l).

TEPI is targeting 1,280 Acres (m/l) for the CO₂ project. This area is highlighted on **Exhibit "A"**.

4. Provide the name of the subject pool and formation.

The VGSAU is within the Vacuum Field.

The VGSAU is unitized within portions of the Grayburg and San Andres Formations.

The type-log identified in the Unit Agreement is reproduced as **Exhibit "C"**.

c. Status of operations in the project area:

1. Provide the name of the unit and the date and number of the Division Order approving the unit plan of operation;

The proposed CO₂ project is at the TEPI operated Vacuum Grayburg San Andres Unit (VGSAU).

The Commission approved the VGSAU on November 8, 1972 with Order No. R-4443.

The VGSAU pressure maintenance project was further ruled on with Order No's. R-4433-A (11-08-72); R-4422 (11-27-72); R-6094 (09-01-79); and R-7010 (07-01-82).

d. Method of recovery to be used:

1. Identify fluids to be injected; and

Recovery is to be enhanced with the introduction of Carbon Dioxide (CO₂). Produced gases will be recycled (re injected). Water will continue to be injected outside of the target area, and in the target area with alternating slugs with the CO₂ in what industry calls a WAG injection scenario.

2. If the Division has not approved the project, provide the date the application for approval was filed with the Division on Form C-108.

A supplemental C-108 is provided with this Application dated January 15, 2001.

e. Description of the project:

1. A list of producing wells;

See **Exhibit "B"** for a listing of the 51 existing producers within the project target area. There are currently no plans to drill additional producing wells.

2. A list of injection wells;

See **Exhibit "B"** for a listing of the 26 existing injectors within the project target area. There are currently no plans to drill additional injection wells.

3. Capital cost of additional facilities;

Description	Cost, \$ Million*
Field Installations/Upgrades	6.6
Well Remediation & Misc.	2.0
CO ₂ Injectant Purchase	50.7
Separation/Compression Facility	0.0
Injectant Recycle Cost	34.2

* current dollars.

4. Total project cost;

The project will cost a total of \$93.5 Million inclusive of associated injectant expenses. Of this total, \$8.6 Million will go toward facilities and well work on the VGSAU.

5. Provide the estimated total value of the additional production that will be recovered as a result of this project;

An additional 14.4 Million STB of Oil are anticipated to be recovered, along with 19.3 Bscf of hydrocarbon gas as a result of the project. Based on an average posted of \$23.00/STB for West Texas intermediate sour crude oil, and an equivalent barrel basis of 6 Mscf/STB oil, the estimated value of the hydrocarbons produced from the proposed project is \$404.7 Million.

6. Provide anticipated date for commencement of injection; and

The anticipated initial CO₂ injection date is April 1, 2001.

7. What type of fluid will be injected and what are the anticipated volumes?

A total of 93 Bscf of CO₂ will be purchased for the project. Produced gases will be recycled back to the reservoir resulting in an ultimate injection of 163 Bscf of gas during a 50 year period. The recycled gas would consist of CO₂, certain hydrocarbons that cannot be economically marketed, and associated non-hydrocarbon gases. The injection scheme to be employed is known as a WAG, or water-alternating-gas injection. Alternating slugs of gas and slugs of water would be introduced in varying volumes with the length of injection (time) dependent upon reservoir response.

f. Production data: Provide graphs, charts and other supporting data to show the production history and production forecast of oil, gas, casinghead gas and water from the project area.

Exhibit "D" provides the VGSAU production and injection history along with the forecast of enhanced recovery due to the introduction of CO₂.

TEPI requests that this application be set for hearing, and with no objections, be approved.

Very truly yours,



Robert J. Boomer
Project Engineer

RJB/
Attachments

*** EXHIBIT "B" ***

Vacuum Grayburg San Andres Unit

Wells within Proposed CO₂ Target Area

PRODUCERS			INJECTORS	
VGSAU Well No.	API Well No.	Count	VGSAU Well No.	API Well No.
1	3002521634	1	4	30025243321
2	3002521421	2	5	3002524333
3	3002502326	3	14	3002524359
6	3002521420	4	15	3002524378
7	3002502277	5	16	3002524308
8	3002502275	6	17	3002524316
9	3002502274	7	18	3002524317
10	3002502258	8	19	3002524331
11	3002502257	9	20	3002524360
12	3002502259	10	31	3002524314
13	3002502260	11	32	3002524330
21	3002502276	12	33	3002524323
22	3002502273	13	34	3002524312
23	3002502272	14	35	3002524361
24	3002502271	15	46	3002524364
25	3002502256	16	47	3002524365
26	3002502255	17	48	3002524322
27	3002502254	18	49	3002524329
28	3002502253	19	50	3002524366
38	3002502265	20	63	3002527974
39	3002502264	21	68	3002502110
40	3002502252	22	146	3002530846
41	3002502249	23	147	3002530798
42	3002502245	24	148	3002530799
43	3002502247	25	149	3002530847
52	3002502267	26	150	3002530917
53	3002502262	27		
54	3002502263	28		
55	3002502250	29		
56	3002502251	30		
57	3002502248	31		
58*	3002502246	32		
59	3002502246	33		
122**	3002530721	34		
126	3002532026	35		
127	3002532027	36		
128	3002532028	37		
139	3002530755	38		
140	3002530756	39		
141	3002530797	40		

142	3002530843	41		
143	3002530844	42		
153	3002530802	43		
154	3002530801	44		
155	3002530800	45		
156	3002530851	46		
157	3002530717	47		
158	3002530718	48		
212	3002532004	49		
227	3002531993	50		
258	3002532009	51		

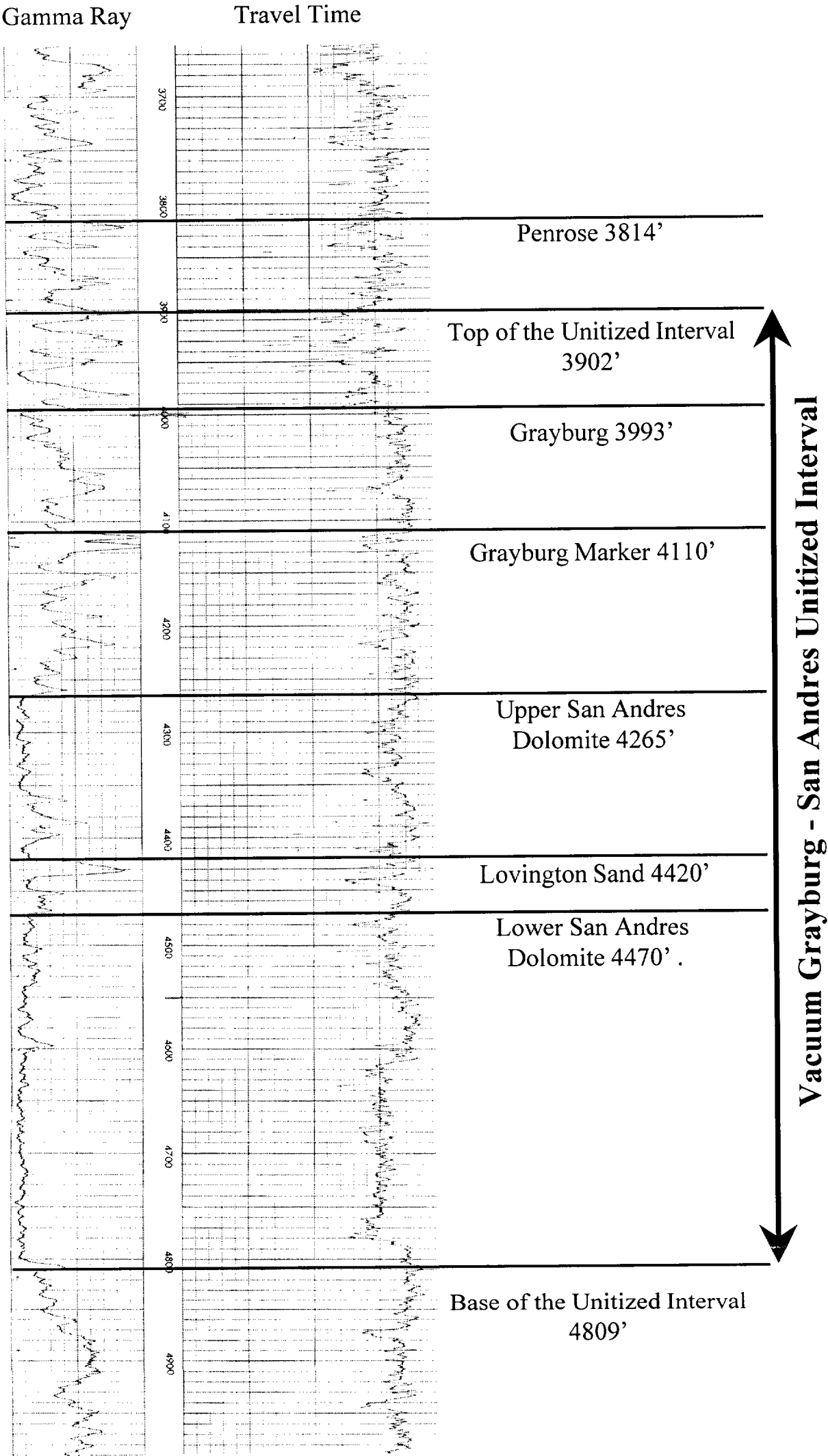
* P&A'd well

* Well to be converted to injection

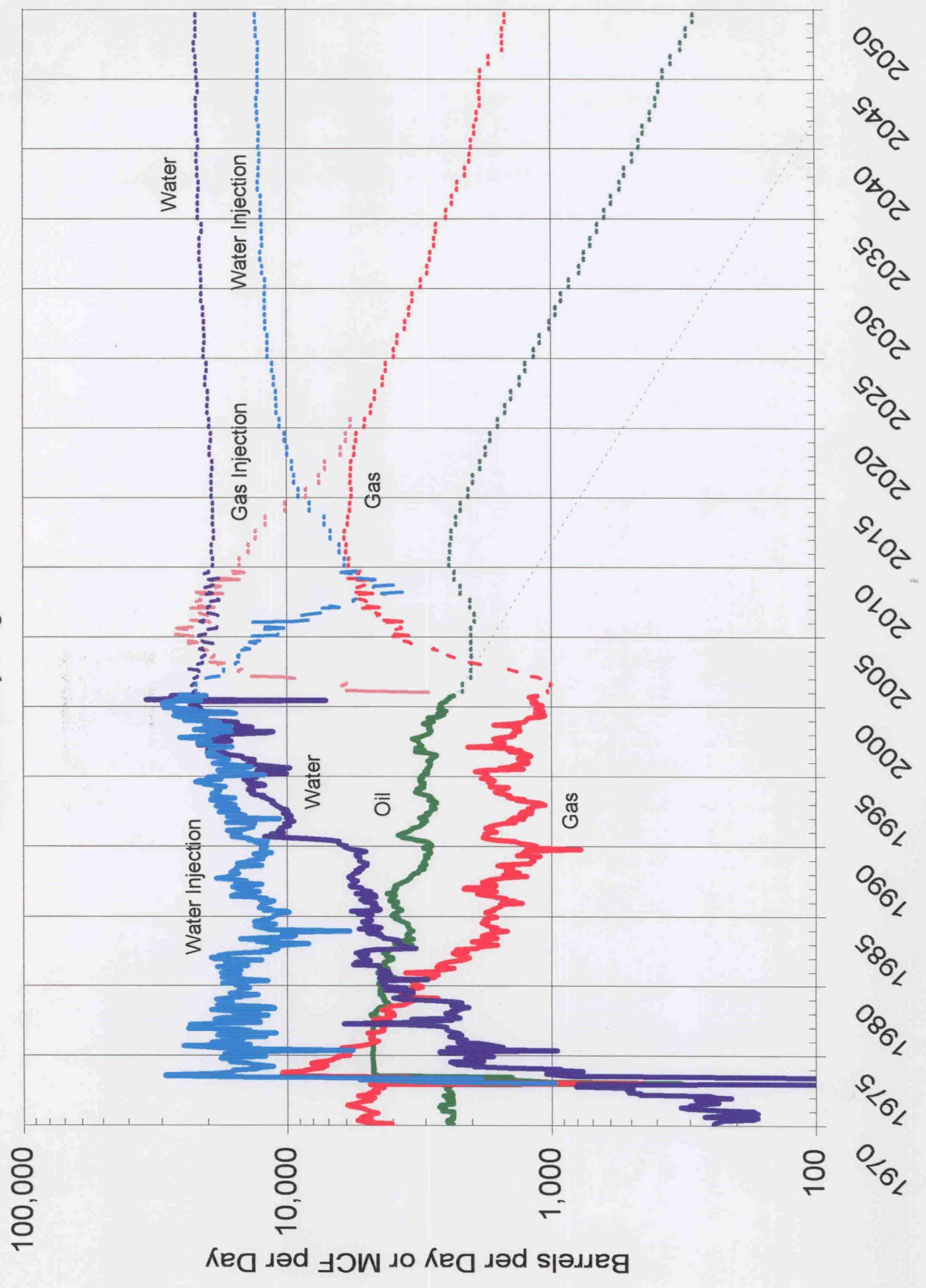
Exhibit C

Vacuum Grayburg-San Andres Unit

Type Log



Vacuum Grayburg San Andres Unit



LARGE FORMAT
EXHIBIT HAS
BEEN REMOVED
AND IS LOCATED
IN THE NEXT FILE

January 10, 2001

BY CERTIFIED MAIL

TO: All Central Vacuum Unit Working Interest Owners

Re: Vacuum Grayburg San Andres Unit Miscible CO₂ Injection Flood, Vacuum Field,
Lea County New Mexico.

Gentlemen:

Please be informed that Texaco Exploration and Production, Inc. plans to initiate a miscible CO₂ flood in the Vacuum Grayburg San Andres Unit. The Vacuum Grayburg San Andres Unit is located adjacent to the Texaco operated West Vacuum Unit. Information required for approval of this project will be presented to the New Mexico Oil Conservation Commission at the hearing in Santa Fe, New Mexico on February 8, 2001.

Very truly yours,

Britton McQuien
Engineer
Texaco Exploration and Production, Inc.

CC: All CVU Working Interest Owners
New Mexico Oil Conservation Commission

Apache Corporation
Attn: Production Dept.
2000 Post Oak Blvd.
Suite 100
Houston, TX 77056-4400

Bank One Texas NA, Trustee of the
Martha Leonard Trust 75-6356886
P. O. Box 2050
Fort Worth, TX 76113

Bank One Texas NA, Trustee of
the Mary Leonard Childrens
Trust 75-6412990
P. O. Box 2050
Fort Worth, TX 76113

Bank One Texas NA, Trustee of the
Miranda Leonard Trust 75-6356894
P. O. Box 2050
Fort Worth, TX 76113

H. M. Bettis, Inc.
Bettis, Boyle & Stovall
P. O. Box 1240
Graham, TX 79046

W. T. Boyle & Co.
Bettis, Boyle & Stovall
P. O. Box 57
Graham, TX 79046

Madelon L. Bradshaw
2120 Ridgemar Blvd., Suite 12
Fort Worth, TX 76116

Frisco Energy LLC
2431 E. 51st St., Ste. 300
Tulsa, OK 74105

Turnco Inc.
Bettis, Boyle & Stovall
P. O. Box 1240
Graham, TX 79046

Larry O. Hulsey
P. O. Box 1143
Graham, TX 79046

Marathon Oil Company
Joint Interest Representative
P. O. Box 552
Midland, TX 79702

Toreador Royalty Corp.
4809 Cole Avenue, Suite 108
Dallas, Texas 75205

McBee Operating Co. LLC
3738 Oak Lawn Avenue, L.B. 200
Dallas, TX 75219

ExxonMobil Production Company
Joint Interest Lower 48
PO Box 4707
Houston, Texas 77210-4707

Phillips Petroleum Company
Attn: Fred Kent
4001 Pembroke
Odessa, TX 79767

Norman D. Stovall, Jr.
P. O. Box 10
Graham, TX 79046

S. B. Street & Co.
Attn: Spencer Street
P. O. Box 206
Graham, TX 79046

Ann McBee Buell
11241 Russwood Circle
Dallas, TX 75229

William D. McBee Jr.
C/o Michael B. McBee
5942 Averill Way
Dallas, TX 75225

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