



STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

July 14, 1997

Texaco Exploration & Production, Inc.
205 East Bender Blvd.
Hobbs, New Mexico 88240
Attention: Tim Miller

Administrative Order DD-187(H)
High Angle/Horizontal

Dear Mr. Miller:

Reference is made to your application dated June 10, 1997 for authorization to institute high angle/horizontal directionally drilling in the Vacuum-Glorieta Pool within the Vacuum Glorieta West Unit Waterflood Project Area in Lea County, New Mexico.

The Division Director Finds That:

- (1) The application of Texaco Exploration & Production, Inc. ("Texaco") as Unit operator of the Vacuum Glorieta West Unit (approved by Division Order No. R-9710, issued in Case 10515 and dated August 25, 1992) has been duly filed under the provisions of Rule 111.D and E of the General Rules and Regulations of the New Mexico Oil Conservation Division ("Division"), revised by Division Order No. R-10388, issued by the Oil Conservation Commission in Case 11,274 on June 13, 1995;
- (2) Division Order No. R-9714, issued in Case 10516 and dated September 3, 1992, established the Vacuum Glorieta West Unit Waterflood Project, comprising the following described area in Lea County, New Mexico, by the injection of water into the Vacuum-Glorieta Pool:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM

Section 24: SW/4 NW/4, SW/4, and SW/4 SE/4
Section 25: All
Section 26: E/2 SE/4
Section 35: NE/4, N/2 SE/4, and SE/4 SE/4
Section 36: All

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Section 30: Lots 1, 2, 3, and 4 (W/2 W/2 equivalent)
Section 31: Lots 1, 2, 3, and 4 (W/2 W/2 equivalent)

TOWNSHIP 18 SOUTH, RANGE 34 EAST, NMPM

Section 1: Lots 1, 2, 3, and 4 (N/2 N/2 equivalent) and S/2 NE/4

Section 2: Lot 1 (NE/4 NE/4 equivalent)

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 6: Lots 1, 2, 3, 4, and 5, SE/4 NW/4, and S/2 NE/4 (N/2 equivalent).

- (3) The Vacuum-Glorieta Pool within the Vacuum Glorieta West Unit Waterflood Project Area is subject to the statewide rules and regulations for oil wells, as promulgated by **Rules 104.C(1) and F(1)** of the General Rules and Regulations of the New Mexico Oil Conservation Division ("Division"), revised by Division Order No. R-10533, issued by the Oil Conservation Commission in Case 11,351 on January 18, 1996, which provides for 40-acre oil spacing and proration units, or drilling units, and requires that wells be located no closer than 330 feet to the outer boundary of the lease or unitized area (pressure maintenance/waterflood project area), nor closer than 10 feet to any quarter-quarter section line or subdivision inner boundary;
- (4) Texaco at this time is seeking to commence high angle/horizontal directional drilling in the Vacuum-Glorieta Pool within its Vacuum Glorieta West Unit Waterflood Project Area, as described above in order to further enhance oil recovery from this existing secondary recovery project;
- (5) The "project area", pursuant to Division General Rule 111.A(7), for said high angle/horizontal drilling should coincide with that area described above as the Vacuum Glorieta West Unit Waterflood Project Area;
- (6) It is Texaco's intent to recomplete its Vacuum Glorieta West Unit Well No. 86 (API No. 30-025-20179), located at a standard oil well location 2310 feet from the South and West lines (Unit K) of said Section 36 by milling a window in the 5-1/2 inch production casing string at an approximate depth of 5,830 feet, kick-off in a south-southwesterly direction, and drill a high-angle hole a lateral distance of approximately 1050 feet through the Upper Paddock Limestone interval of the Vacuum Glorieta Pool;
- (7) The applicable drilling window or "producing area", pursuant to Division General Rule 111.A(8), for said wellbore should include that area within the above-described Vacuum Glorieta West Unit Waterflood Project Area and coinciding high angle/horizontal directional drilling project area that is no closer than 330 feet to its outer boundary; and,
- (8) It appears the applicant has satisfied all of the appropriate requirements prescribed in said Rule 111.D and E, the subject application should be approved and the well should be governed by the provisions contained within this order and all other applicable provisions of Division General Rule 111.

IT IS THEREFORE ORDERED THAT:

(1) Texaco Exploration & Production, Inc. ("Texaco") as Unit operator of the Vacuum Glorieta West Unit (approved by Division Order No. R-9710, issued in Case 10515 and dated August 25, 1992), is hereby authorized to commence high angle/horizontal directional drilling within the Vacuum-Glorieta Pool in Lea County, New Mexico, by recompleting its Vacuum Glorieta West Unit Well No. 86 (API No. 30-025-20179), located at a standard oil well location 2310 feet from the South and West lines (Unit K) of Section 36, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico by milling a window in the 5-1/2 inch production casing string at an approximate depth of 5,830 feet, kick-off in a south-southwesterly direction, and drill a high-angle hole a lateral distance of approximately 1050 feet through the Upper Paddock Limestone interval of the Vacuum Glorieta Pool.

PROVIDED HOWEVER THAT prior to commencing directional drilling operations in said wellbore, the applicant shall establish the location of the kick-off point by means of a directional survey acceptable to the Division.

PROVIDED FURTHER THAT during or upon completion of said directional drilling operations, the applicant shall conduct an accurate wellbore survey from the kick-off point to total depth in order that the subsurface bottomhole location, as well as the wellbore's true depth and course, may be determined.

(2) The applicant shall notify the supervisor of the Hobbs District office of the Division of the date and time said wellbore survey is to be conducted so that they may be witnessed. The applicant shall further provide a copy of said wellbore survey to the Santa Fe and Hobbs offices of the Division upon completion.

(3) The "project area", pursuant to Division General Rule 111.A(7), for said high angle/horizontal drilling should coincide with the Vacuum Glorieta West Unit Waterflood Project (approved by Division Order No. R-9714, issued in Case 10516 and dated September 3, 1992) comprising the following described area in Lea County, New Mexico:

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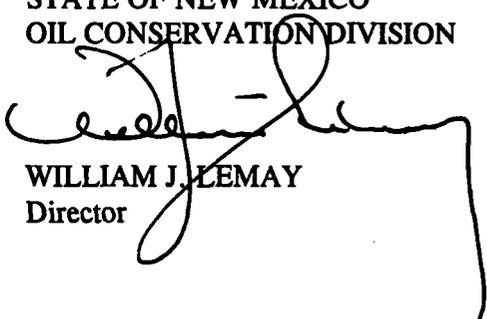
(5) The operator shall comply with all requirements and conditions set forth in Division General Rule 111.E(2) and any applicable requirements in 111.D and F, and Order No. R-9714.

(6) Form C-105 shall be filed in accordance with Division Rule 1105 and the operator shall indicate thereon true vertical depth (TVD) in addition to measured depths (MVD).

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

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION


WILLIAM J. LEMAY
Director

SEAL

cc: Oil Conservation Division - Hobbs
New Mexico State Land Office - Santa Fe

DD-TEX. H10

Rec: 6-16-97
Susp: 7-7-97
Released: 7-14-97

July 14, 1997

Texaco Exploration & Production, Inc.
205 East Bender Blvd.
Hobbs, New Mexico 88240

Attention: Tim Miller

187
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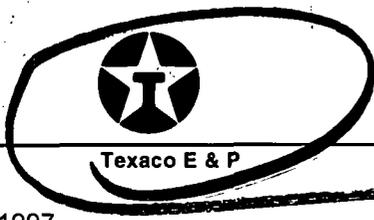
DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director

S E A L

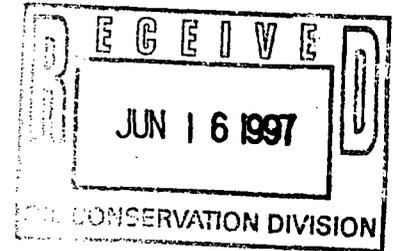
cc: Oil Conservation Division - Hobbs
New Mexico State Land Office - Santa Fe



DD 7/7/97

June 10, 1997

205 E. Bender Blvd.
Hobbs, NM 88240
505 393 7191



New Mexico Oil Conservation Division
2040 South Pacheco
P.O. Box 6429
Santa Fe, New Mexico 87505

Attn: Mr. Michael Stogner
Engineering Bureau Chief Examiner

**Re: Administrative Approval for Directional Wellbore
Vacuum Glorieta West Unit #86 (API #30 025 20179)
Unit Letter K, Section 36, Township 17S, Range 34E
Lea County, New Mexico**

Dear Mr. Stogner,

Texaco E & P Inc. respectfully requests administrative approval to directionally drill a horizontal lateral interval from Vacuum Glorieta West Unit #86 (VGWU), an existing vertical wellbore. Upon completion of the horizontal section, VGWU #86 will also require the formation of a non-standard 80 acre proration unit for dedication. This project will be performed in accordance to rules 111-D and 104-D from the New Mexico Energy and Minerals Department Rules and Regulations manual.

VGWU #86 is currently producing 15 BOPD and 10 MCFPD from the Vacuum Glorieta unitized waterflood interval (Glorieta, Upper Paddock, and Lower Paddock). A horizontal lateral section is anticipated to increase the daily production rate to 115 BOPD and 35 MCFPD, while increasing unit reserves by approximately 80 MBO.

The proposed drill path is 14.43° West of due South and laterally 1,023' targeting the Upper Paddock Limestone interval (please see the attached wellpath directional survey). This interval has shown a favorable response to the waterflood and provides an ideal medium for directional drilling. Also, Texaco has significantly enhanced injection support in this area through recent conformance type injection well workovers (polymer treatments and cement squeezes).

Offset operator notification will not be required for this project due to the central location of the subject well within the unitized acreage.

Please review the attached directional survey, C-102 plat, type log section, and offset operator plat, for supplemental information. If you have any questions or concerns with regards to this matter please contact Darrell Carriger at (505) 397-0426. Thank you for your consideration of this proposal.

Sincerely,

Tim Miller
Texaco Exploration & Production Inc.
Hobbs Operating Unit Manager

/DJC
Attachments

cc: NMOCD District I (Hobbs location)

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-20179	² Pool Code 62160	³ Pool Name VACUUM GLORIETA
⁴ Property Code	⁵ Property Name VACUUM GLORIETA WEST UNIT	
⁷ OGRID Number 022351	⁸ Operator Name TEXACO EXPLORATION & PRODUCTION INC.	⁶ Well No. 86 ⁹ Elevation 4009' DF

¹⁰ Surface Location

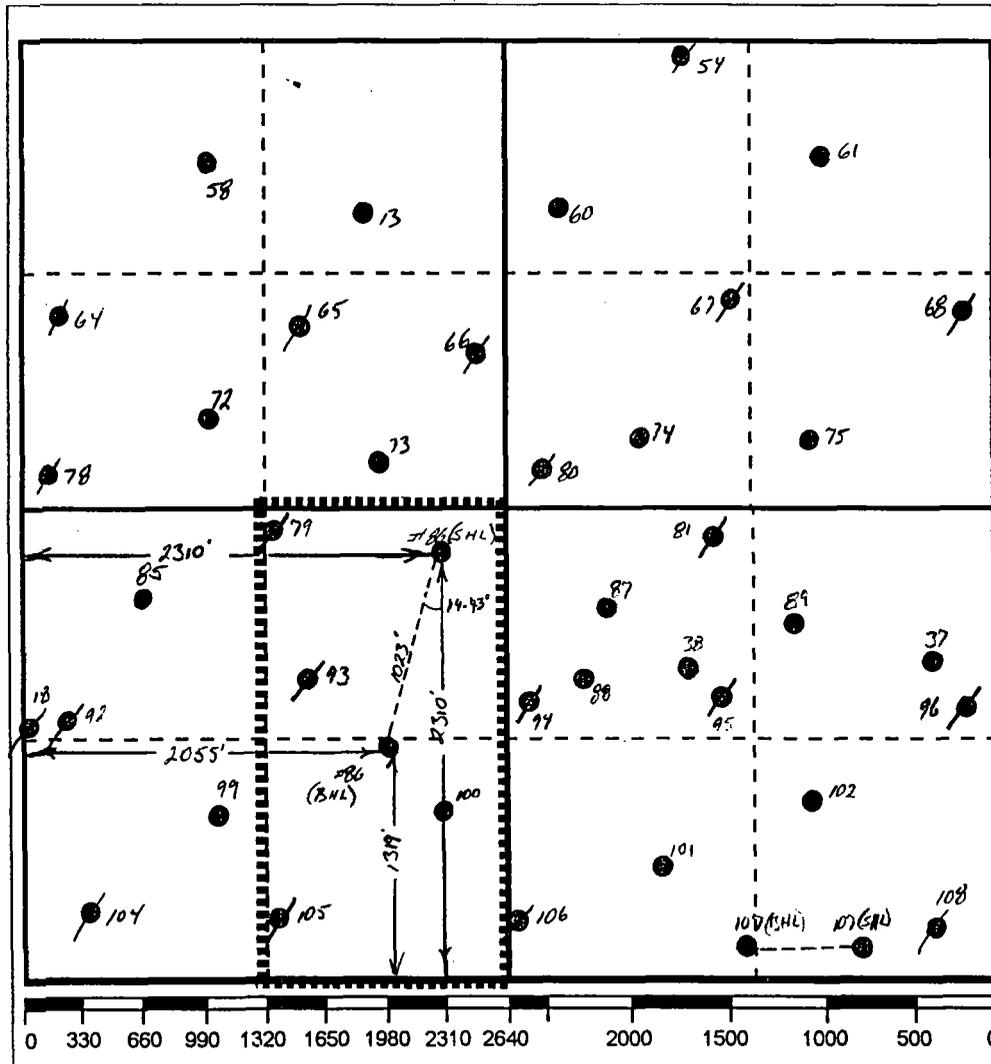
UI or lot no.	Section	Township	Range	Lot.Idn	Feet From The	North/South Line	Feet From The	East/West Line	County
K	36	17S	34E		2310	SOUTH	2310	WEST	LEA

¹¹ Bottom Hole Location If Different From Surface

UI or lot no.	Section	Township	Range	Lot.Idn	Feet From The	North/South Line	Feet From The	East/West Line	County
N	36	17S	34E		1319	FSL	2055	FWL	Lea

¹² Dedicated Acres 80	¹³ Joint or Infill No	¹⁴ Consolidation Code	¹⁵ Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



17 OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Signature: *Darrell J. Carriger*

Printed Name: **Darrell J. Carriger**

Position: **Prod. Engineer**

Date: **6/9/97**

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed:

Signature & Seal of Professional Surveyor:

Certificate No.:

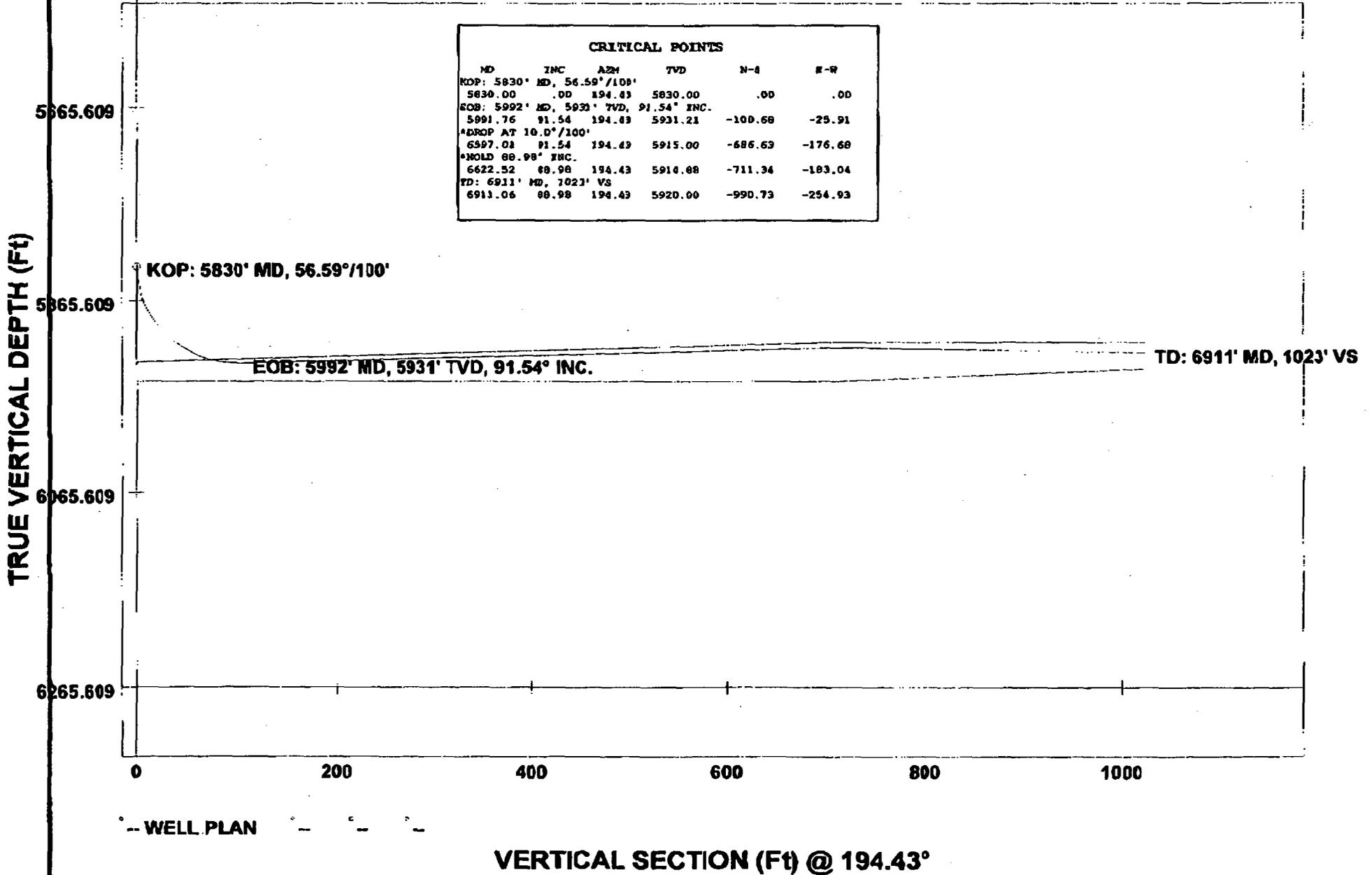
Job Number:
Company: TEXACO E & P, INC.
Lease/Well: VGWU #86
Location: LEA CO., NEW MEXICO
Rig Name: YEK #119
Declination: 9.11° EAST

File name: C:\WINSERVE\VGWU86.SVY
Date/Time: 03-Jun-97 / 18:18

JUN-10-97 07:12 FROM: TEXACO E&P DRILLING DEPARTMENT

3037934943

T-039 P. 03/05 Job-541





Job Number:	State/Country:
Company: TEXACO E & P, INC.	Declination: 9.11° EAST
Lease/Well: VGWU #86	Grid:
Location: LEA CO., NEW MEXICO	File name: C:\WINSERVE\VGWU86.SVY
Rig Name: YEK #119	Date/Time: 03-Jun-97 / 18:18
RKB:	Curve Name: WELL PLAN
G.L. or M.S.L.:	

PHOENIX DRILLING SERVICES, INC.

WINSERVE SURVEY CALCULATIONS

Minimum Curvature Method
Vertical Section Plane 194.43

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Subsea TVD FT	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
KOP: 5830' MD, 56.59°/100'										
5830.00	.00	194.43	5830.00	5830.00	.00	.00	.00	.00	.00	.00
5840.00	5.66	194.43	5839.98	5839.98	-4.8	-1.2	.49	.49	194.43	56.59
5850.00	11.32	194.43	5849.87	5849.87	-1.91	-4.9	1.97	1.97	194.43	56.59
5860.00	16.98	194.43	5859.56	5859.56	-4.27	-1.10	4.41	4.41	194.43	56.59
5870.00	22.64	194.43	5868.97	5868.97	-7.55	-1.94	7.80	7.80	194.43	56.59
5880.00	28.29	194.43	5877.99	5877.99	-11.72	-3.01	12.10	12.10	194.43	56.59
5890.00	33.95	194.43	5886.66	5886.66	-16.72	-4.30	17.26	17.26	194.43	56.59
5900.00	39.61	194.43	5894.56	5894.56	-22.52	-5.79	23.25	23.25	194.43	56.59
5910.00	45.27	194.43	5901.93	5901.93	-29.05	-7.47	29.99	29.99	194.43	56.59
5920.00	50.93	194.43	5908.61	5908.61	-36.25	-9.33	37.43	37.43	194.43	56.59
5930.00	56.59	194.43	5914.52	5914.52	-44.06	-11.34	45.50	45.50	194.43	56.59
5940.00	62.25	194.43	5919.60	5919.60	-52.40	-13.48	54.10	54.10	194.43	56.59
5950.00	67.91	194.43	5923.82	5923.82	-61.17	-15.74	63.17	63.17	194.43	56.59
5960.00	73.58	194.43	5927.11	5927.11	-70.31	-18.09	72.60	72.60	194.43	56.59
5970.00	79.22	194.43	5929.46	5929.46	-79.72	-20.51	82.32	82.32	194.43	56.59
5980.00	84.88	194.43	5930.85	5930.85	-89.31	-22.98	92.22	92.22	194.43	56.59
5990.00	90.54	194.43	5931.25	5931.25	-98.98	-25.47	102.21	102.21	194.43	56.59
EOB: 5992' MD, 5931' TVD, 91.54° INC.										
5991.76	91.54	194.43	5931.21	5931.21	-100.68	-25.91	103.96	103.96	194.43	56.52
6091.76	91.54	194.43	5928.54	5928.54	-197.50	-50.82	203.93	203.93	194.43	.00
6191.76	91.54	194.43	5925.86	5925.86	-294.31	-75.73	303.89	303.89	194.43	.00
6291.76	91.54	194.43	5923.18	5923.18	-391.12	-100.64	403.86	403.86	194.43	.00
6391.76	91.54	194.43	5920.50	5920.50	-487.93	-125.55	503.82	503.82	194.43	.00
6491.76	91.54	194.43	5917.82	5917.82	-584.74	-150.46	603.79	603.79	194.43	.00
6591.76	91.54	194.43	5915.14	5915.14	-681.55	-175.37	703.75	703.75	194.43	.00

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	Subsea TVD FT	N-S FT	E-W FT	Vertical Section FT	CLOSURE Distance FT	Direction Deg	Dogleg Severity Deg/100
DROP AT 10.0°/100'										
6597.01	91.54	194.43	5915.00	5915.00	-686.63	-176.68	709.00	709.00	194.43	.00
6607.01	90.54	194.43	5914.82	5914.82	-696.32	-179.17	719.00	719.00	194.43	10.00
6617.01	89.54	194.43	5914.81	5914.81	-706.00	-181.66	729.00	729.00	194.43	10.00
HOLD 88.98° INC.										
6622.52	88.98	194.43	5914.88	5914.88	-711.34	-183.04	734.51	734.51	194.43	10.00
6722.52	88.98	194.43	5916.66	5916.66	-808.17	-207.95	834.49	834.49	194.43	.00
6822.52	88.98	194.43	5918.43	5918.43	-905.00	-232.87	934.48	934.48	194.43	.00
TD: 6911' MD, 1023' VS										
6911.06	88.98	194.43	5920.00	5920.00	-990.73	-254.93	1023.00	1023.00	194.43	.00

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980

COPY

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-101
Revised February 10, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies

DISTRICT II
P.O. Box Drawer DD, Artesia, NM 88211-0719

OIL CONSERVATION DIVISION

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

DISTRICT IV
P.O. Box 2088, Santa Fe, NM 87504-2088

AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address TEXACO EXPLORATION & PRODUCTION INC. 205 E. Bender, HOBBS, NM 88240		² OGRID Number 022351
		³ API Number 30-025-20179
⁴ Property Code 11125	⁵ Property Name VACUUM GLORIETA WEST UNIT	⁶ Well No. 86

⁷ Surface Location

UI or lot no.	Section	Township	Range	Lot.Idn	Feet From The	North/South Line	Feet From The	East/West Line	County
K	36	17S	34E		2310	SOUTH	2310	WEST	LEA

⁸ Proposed Bottom Hole Location If Different From Surface

UI or lot no.	Section	Township	Range	Lot.Idn	Feet From The	North/South Line	Feet From The	East/West Line	County
N	36	17S	34E		1319	FSL	2055	FWL	Lea
⁹ Proposed Pool 1 Vacuum Glorieta (Same Pool)					¹⁰ Proposed Pool 2				

¹¹ Work Type Code D	¹² WellType Code O	¹³ Rotary or C.T. Rotary	¹⁴ Lease Type Code S	¹⁵ Ground Level Elevation 4009' DF
¹⁶ Multiple No	¹⁷ Proposed Depth 6890'	¹⁸ Formation Glorieta	¹⁹ Contractor Dawson	²⁰ Spud Date 7/1/97

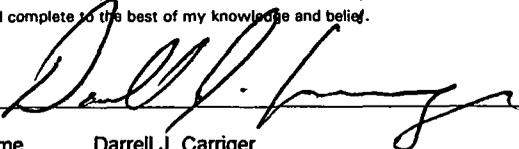
²¹ Proposed Casing and Cement Program

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
12-1/4"	8-5/8"	24	1538'		Circulated
7-7/8"	5-1/2"	15.5	6850'		TOC @ 2610'

²² Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

Please see the attached procedure.

²³ I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Signature 

Printed Name Darrell J. Carriger

Title Prod. Engineer

Date 6/10/97 Telephone 397-0426

OIL CONSERVATION DIVISION

Approved By:

Title:

Approval Date: Expiration Date:

Conditions of Approval:
Attached

VGWU #86 Horizontal Lateral Procedure

1. MIRU pulling unit. TOH with rods and pump. Install BOP. TOH with 2-7/8" production tubing. RIH with bit. Clean out casing to 5930'. TOH with drill bit and tubing. Rig down pulling unit.
2. Rig up Schlumberger logging services. Run cement bond log from 5600' to 5930'. Rig down Schlumberger.
3. Rig up wireline company. Set CIBP @ approximately 5870' and cap CIBP with 30' cement (depth of CIBP may change depending on cement bond log. The new PBTD needs to be 5' above the casing collar in a 38' casing joint). Load casing and pressure test casing to 500 psi.
4. MIRU (drilling) pulling unit with substructure and mud equipment. Commence 24 hour operation.
5. Pick up 4-3/4" window mill, scraper, and smooth watermelon mill. Clean out wellbore to PBTD. Tag PBTD. Set 15,000# on PBTD to ensure stability.

Trip #1

6. Measure and caliper all mills to be used. Pick up a single joint of the drill pipe and place it in the mouse hole. Pick up orienting sub and make-up on top of the joint of drill pipe.
7. TIH (slowly - about the speed of running a packer) with 4-1/2" 1-1/2° Concave Face Retrievable "WhipBack" whipstock, 4-3/4" starting mill, 1 joint drill pipe, orientation sub, 12 3-1/2" drill collars on 2-7/8" drill pipe.
8. Rig up and TIH with surface readout gyro (SRG). Survey wellbore on the fly to determine bottomhole location. Orient whipstock face to an azimuth of 14.4301° West of due South. Lower whipstock and tag PBTD. Confirm Gyro reading. Slack to shear lower assembly and set whipstock slips. TOH with gyro.
9. Commence milling operation with starting mill (pump rate of ~ 150 GPM). Pump a sweep and circulate well out.
10. TOH with BHA and visually inspect starting mill for bright space on mill, a ring and wear on blades, and a bevel on the outside of the blades. Lay down orienting sub.

Trip #2 (Window cutting trip)

11. Pick up and TIH with 4-3/4" Window mill, and 4-3/4" rough OD watermelon mill, bit sub, 1 joint drillpipe, and drill collars on drillpipe.
12. Drill/ream window section and approximately 5' of rathole to KOP. TOH with bottom hole assembly.
13. TIH with 4-3/4" window mill, 4-3/4" rough OD watermelon mill, and a 4-3/4" smooth OD string mill on drill collars and drillpipe. Make final cleanup run until drillstring passes through window with no rotation with minimal drag. Circulate hole with VGWU produced water. TOH with BHA.
14. Rig up mudloggers.
15. TIH with curve building assembly and drill 100' (long radius) radius curvature section as per attached Phoenix recommendation
16. Circulate hole clean.
17. Drill ahead following attached well path in accordance to Phoenix attached recommendations. Circulate hole clean.

Stimulation:

18. Rig up coiled tubing unit and acid stimulate horizontal lateral in accordance to the attached stimulation procedure.
19. Swab back load taking samples and recording oil cut. Unichem personnel should be on location recording pH levels in swab samples. When pH level reaches 5.5 or above, proceed with procedure.
20. Scale squeeze horizontal lateral with 330 gallons TH 756 (Unichem - low pH Acetic Phosphonate scale inhibitor) + 23 bbls fresh water using coiled tubing unit. Squeeze treatment as follows:
 - a) Run DS 1-1/2" coiled tubing in horizontal lateral to a measured depth setting of ~ 6890'
 - b) Spot 129 gallons inhibitor/water mix
 - c) Run DS 1-1/2" coiled tubing in horizontal lateral to a measured depth setting of ~ 6790'
 - d) Spot 129 gallons inhibitor/water mix
 - e) Run DS 1-1/2" coiled tubing in horizontal lateral to a measured depth setting of ~ 6690'
 - f) Spot 129 gallons inhibitor/water mix

- g) Run DS 1-1/2" coiled tubing in horizontal lateral to a measured depth setting of ~ 6590'
- h) Spot 129 gallons inhibitor/water mix
- i) Run DS 1-1/2" coiled tubing in horizontal lateral to a measured depth setting of ~ 6490'
- j) Spot 129 gallons inhibitor/water mix
- k) Run DS 1-1/2" coiled tubing in horizontal lateral to a measured depth setting of ~ 6390'
- l) Spot 129 gallons inhibitor/water mix
- m) Run DS 1-1/2" coiled tubing in horizontal lateral to a measured depth setting of ~ 6290'
- n) Spot 129 gallons inhibitor/water mix
- o) Run DS 1-1/2" coiled tubing in horizontal lateral to a measured depth setting of ~ 6190'
- p) Spot 129 gallons inhibitor/water mix
- q) Run DS 1-1/2" coiled tubing in horizontal lateral to a measured depth setting of ~ 6090'
- r) Spot 129 gallons inhibitor/water mix
- s) Run DS 1-1/2" coiled tubing in horizontal lateral to a measured depth setting of ~ 6040'
- t) Flush coiled tubing fresh water + 100 bbls fresh water

21. Rig down DS coiled tubing unit.

22. TIH with production equipment. Size and type of production equipment will be based on fluid volume estimates from swab runs.

23. Return well to production and place on test.

PROPOSED DRILLING PROCEDURE

**PREPARED BY
PHOENIX DRILLING SERVICES, INC.
FOR
TEXACO EXPLORATION & PRODUCTION, INC.
WELL: VACUUM GLORIETTA WEST UNIT #86
4-3/4" HOLE, 5-1/2" CASING RE-ENTRY
LEA COUNTY, NEW MEXICO
P97-254R
JUNE 4, 1997**

1. Set a whipstock or cut a section and prepare the wellbore for KOP at 5830' MD.
2. Circulate hole clean and TOOH.
3. Pick up, orient, and test BHA #1 consisting of:
 - a. 4-3/4" bit
 - b. 3-3/4" short radius motor.
 - c. 3-3/4" orienting/float sub
 - d. Two 3-1/2" Flex Monel Drill Collars.
 - e. 1320' 2-7/8" PH-6 (8.7#/ft) P-105 tubing.
 - f. 2-7/8" AOH (10.4#/ft) drill pipe to surface.
4. Run in hole to KOP. Break circulation at 130 gpm and drill one foot to insure proper operation of motor.
5. Run in hole with surface recording gyro. Survey as per state requirements and seat in mule shoe. Orient toolface to desired azimuth.
6. POOH with gyro.
7. Begin pumping at 130 gpm and drill ahead slowly increasing differential to 200 psi. Drill ahead checking tool face orientation as necessary with the gyro until sufficient inclination has been built to steer from high side toolface reading.
8. PU gamma/steering tool (if gamma option is selected) and run in hole to seat steering tool in mule shoe. RU Wet Connect.
9. Continue drilling at the same flow rate and pressure to complete the build portion at:
 - a. 5992' MD
 - b. 5931' TVD
 - c. 91.54° inclination
 - d. 194.43° azimuth
10. Circulate hole clean.
11. Trip out of hole to Wet Connect and retrieve steering tool.
12. Continue trip out of hole with BHA #1. Lay down same.
13. Pick up, orient, and test BHA #2 (lateral assembly with slightly less bend). TIH to KOP at 5830' MD.
14. PU steering tool and run in hole to seat in mule shoe. RU the Wet Connect. Resume TIH to bottom.
15. Drill ahead following the programmed well path at 130 gpm and 200 psi differential pressure to TD at:
 - a. 6911' MD
 - b. 5920' TVD
 - c. 88.98° inclination
 - d. 194.43° azimuth
 - e. 1023' vertical section
16. Circulate hole clean.
17. Trip out of hole to Wet Connect and retrieve steering tool.
18. Continue trip out of hole with BHA #2
19. Demobilize.

VGLWU # 86

5950

Ø 7% - SW 69%

Ø 14% - SW 47%

Ø 12% - SW 47%

Ø 12% - SW 60%

5930

TRIP

Ø 15% - SW 12%

REF: 5930-36, 5956-
62, 5966-70, 5973-76,
6008-12 W/2 JET SHOTS
488 FOOT.

IP: FLOW NATURAL, 342
BOPE, 22/64" CHOKE,
GOR 585, GRAVITY
88.
(BASED ON 3 HR TEST)

COMPLETE: 7-19-63.

Ø 10% - SW 23%

Ø 14% SW 17%

Ø 10% SW 25%

6000

Ø 11.5% SW 12%

Ø 11.5% SW 58%

Ø 12% SW 55%

80

6100

562493

5892

5900

5950

5997

6000

6050

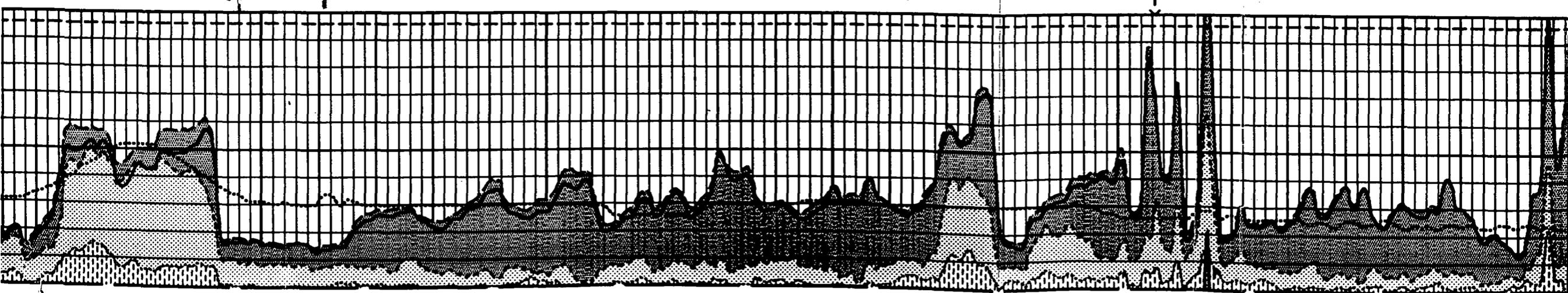
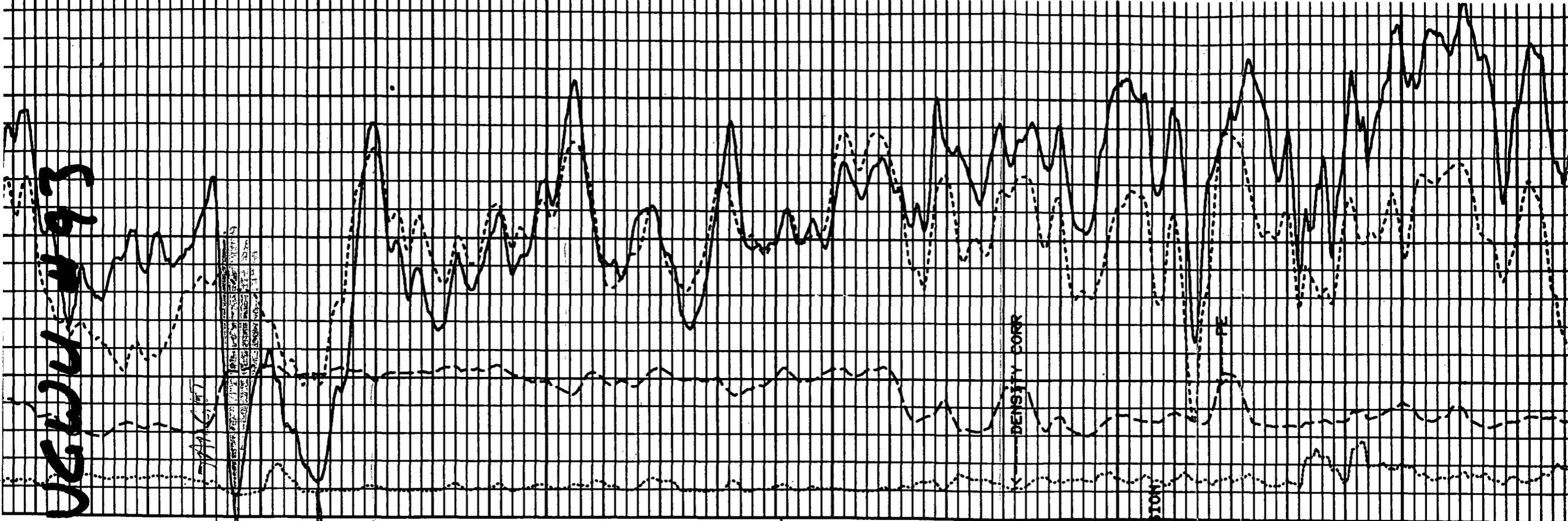
6060

6100

6120

DENSITY CORR

TENSION



294 10000

5900

VGWV # 708

Ø 14% - SW 47%
Ø 12% - SW 47%
Ø 12% - SW 60%

TARGET

5930

REF: 5930-36, 5956-
Ø 5966-70, 5973-76,
6008-12 W/2 JET SHOTS
PER FOOT.

IP: FLOW NATURAL 342
BOH, 22/64" CHOKE,
GOR 535, GRAVITY
88.
(BASED ON 3 HR TEST)

COMPLETE: 7-19-63.

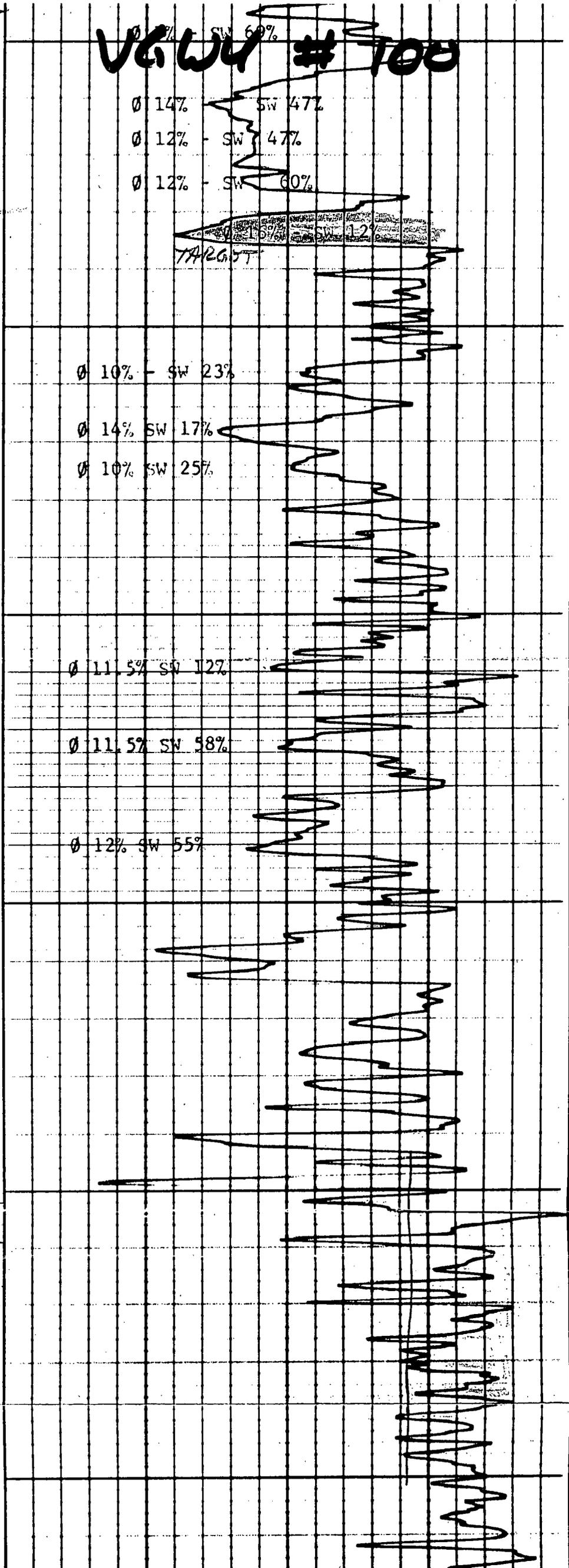
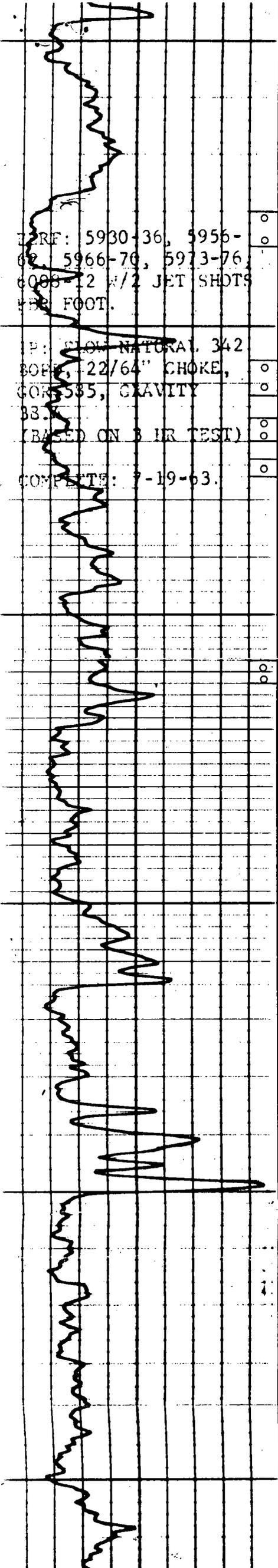
Ø 10% - SW 23%
Ø 14% SW 17%
Ø 10% SW 25%

6000

Ø 11.5% SW 12%
Ø 11.5% SW 58%
Ø 12% SW 55%

8

6100



901 # 443V

0-1

**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. 10515
Order No. R-9710**

**APPLICATION OF TEXACO EXPLORATION AND
PRODUCTION INC. FOR STATUTORY UNITIZATION,
LEA COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on July 23, 1992, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 25th day of August, 1992, 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) Division Case Nos. 10515 and 10516 were consolidated at the time of the hearing for the purpose of testimony.
- (3) The applicant, Texaco Exploration and Production Inc. (Texaco), seeks the statutory unitization, pursuant to the "Statutory Unitization Act", Sections 70-7-1 through 70-7-21, NMSA, (1978), for the purpose of establishing a secondary recovery project, of all mineral interests in a portion of the Vacuum-Glorieta Pool, Lea County, New Mexico, underlying 2,778.86 acres, more or less, of state and fee lands; the applicant further seeks approval of the Unit Agreement and the Unit Operating Agreement which were submitted in evidence as applicant's Exhibits 3 and 4, respectively, in this case.
- (4) The proposed unit area should be designated the Vacuum Glorieta West Unit Area; the horizontal limits of said unit area should be comprised of the following described state and fee lands in Lea County, New Mexico:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM

Section 24: SW/4, SW/4 NW/4, SW/4 SE/4
Section 25: All
Section 26: E/2 SE/4
Section 35: NE/4, N/2 SE/4, SE/4 SE/4
Section 36: All

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Section 30: Lots 1, 2, 3, 4 (W/2 W/2)
Section 31: Lots 1, 2, 3, 4 (W/2 W/2)

TOWNSHIP 18 SOUTH, RANGE 34 EAST, NMPM

Section 1: Lots 1, 2, 3, 4 (N/2 N/2), S/2 NE/4
Section 2: Lot 1 (NE/4 NE/4)

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 6: Lots 1, 2, 3, 4, 5, SE/4 NW/4, S/2 NE/4, (N/2)

(5) The vertical limits of the Unit Area should comprise the correlative interval containing the Glorieta and Paddock formations as found from a depth of 5,838 feet to a depth of 6,235 feet on the Schlumberger Sonic Log run on the Mobil Bridges State Well No. 95 located in the SE/4 SE/4 (Unit P) of Section 26, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico.

(6) Said unit has been approved by the Commissioner of Public Lands for the State of New Mexico, subject to the approval of the statutory unitization by the Division.

(7) No interested party appeared in opposition to the unitization nor to the vertical limits of the proposed unit area.

(8) The Unit Area contains 21 separate tracts owned by 6 different working interest owners.

(9) The applicant has made a good faith effort to secure voluntary unitization within the unit area and as of the date of hearing, over 84% of the working interest owners and over 96% of the royalty interest owners were effectively committed to the unit or have balloted to join the unit.

(10) Texaco is seeking authority to institute an enhanced recovery project, for the recovery of oil and associated gas, condensate, and all associated liquefiable hydrocarbons within and to be produced from the proposed unit area (being the subject of Case No. 10516).

(11) Enhanced recovery operations by waterflood should result in additional recovery from the unit area of approximately 14.5 million barrels of oil.

(12) The unitized management, operation and further development of the Vacuum Glorieta West Unit Area, as proposed, is reasonably necessary to effectively carry on enhanced recovery operations and will substantially increase the ultimate recovery of oil and gas from the unitized portion of the pool.

(13) The proposed unitized method of operation as applied to the Vacuum Glorieta West Unit Area is feasible and will result with reasonable probability in the increased recovery of substantially more oil and gas from the unitized portion of the pool than would otherwise be recovered without unitization.

(14) The estimated additional costs of the proposed unitized operations will not exceed the estimated value of the additional oil and gas so recovered plus a reasonable profit.

(15) The Phase I and Phase II participation formulas contained in the Unitization Agreement allocate the produced and saved unitized substances to the separately owned tracts in the unit area on a fair, reasonable and equitable basis.

(16) Unitization and adoption of applicant's proposed unitized method of operation will benefit the working interest owners and the royalty interest owners of the oil and gas rights within the Vacuum Glorieta West Unit.

(17) The applicant's Exhibits 3 and 4 in this case, being the Unit Agreement and the Unit Operating Agreement, respectively, should be incorporated by reference into this order.

(18) The Vacuum Glorieta West Unit Agreement and Unit Operating Agreement, as applied to the unit area, provide for unitization and unit operation of the Vacuum Glorieta West Unit Area upon terms and conditions that are fair, reasonable and equitable and which include:

- (a) An allocation to the separately owned tracts of the unit area of all oil and gas that is produced from the unit area and which is saved, being the production that is not used in the conduct of unit operations or not unavoidably lost;
- (b) A provision for the credits and charges to be made and the adjustment among the owners in the unit area for their respective investments in wells, tanks, pumps, machinery, materials and equipment contributed to the unit operations;
- (c) A provision governing how the costs of unit operations including capital investments shall be determined and charged to the separately owned tracts and how said costs shall be paid, including a provision providing when, how, and by whom such costs shall be charged to such owner, or the interest of such owner, and how his interest may be sold and the proceeds applied to the payment of his costs;
- (d) A provision for carrying any working interest owner on a limited, carried or net profits basis, payable out of production, upon terms and conditions which are just and reasonable, and which allow an appropriate charge for interest for such service payable out of production, upon such terms and conditions determined by the Division to be just and reasonable;
- (e) A provision designating the unit operator and providing for supervision and conduct of the unit operations, including the selection, removal or substitution of an operator from among the working interest owners to conduct the unit operations;
- (f) A provision for a voting procedure for the decision of matters to be decided by the working interest owners in respect to which each working interest owner shall have a voting interest equal to his unit participation; and
- (g) The time when the unit operations shall commence and the manner in which, and the circumstances under which, the unit operations shall terminate and for the settlement of accounts upon such termination.

(19) The statutory unitization of the Vacuum Glorieta West Unit Area is in conformity with the above findings, and will prevent waste and protect the correlative rights of all owners of interest within the proposed unit area, and should be approved.

IT IS THEREFORE ORDERED THAT:

(1) The Vacuum Glorieta West Unit Area comprising some 2778.86 acres, more or less, being a portion of the Vacuum Glorieta Pool, Lea County, New Mexico, is hereby approved for statutory unitization pursuant to the provisions of the "Statutory Unitization Act", Sections 70-7-1 through 70-7-21, NMSA, (1978).

(2) The unit area shall be designated the Vacuum Glorieta West Unit Area; the horizontal limits of said Unit Area shall comprise the following described state and fee lands in Lea County, New Mexico:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM

Section 24: SW/4, SW/4 NW/4, SW/4 SE/4
Section 25: All
Section 26: E/2 SE/4
Section 35: NE/4, N/2 SE/4, SE/4 SE/4
Section 36: All

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Section 30: Lots 1, 2, 3, 4 (W/2 W/2)
Section 31: Lots 1, 2, 3, 4 (W/2 W/2)

TOWNSHIP 18 SOUTH, RANGE 34 EAST, NMPM

Section 1: Lots 1, 2, 3, 4 (N/2 N/2), S/2 NE/4
Section 2: Lot 1 (NE/4 NE/4)

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 6: Lots 1, 2, 3, 4, 5, SE/4 NW/4, S/2 NE/4, (N/2)

(3) The vertical limits of the Vacuum Glorieta West Unit Area shall comprise the correlative interval containing the Glorieta and Paddock formations as found from a depth of 5,838 feet to a depth of 6,235 feet on the Schlumberger Sonic Log run on the Mobil Bridges State Well No. 95 located in the SE/4 SE/4 (Unit P) of Section 26, Township 17 South, Range 34 East, NMPM, Lea County, New Mexico.

(4) The applicant shall institute a waterflood project for the secondary recovery of oil, gas and all associated liquefiable hydrocarbons within and produced from the unit area, said waterflood project being the subject of Division Case No. 10516.

(5) The Unit Agreement and the Unit Operating Agreement for the Vacuum Glorieta West Unit, presented as evidence in this case, are hereby incorporated by reference into this Order.

(6) The Unit Agreement and the Unit Operating Agreement for the Vacuum Glorieta West Unit provide for unitization and unit operation of the Unit Area upon terms and conditions that are fair, reasonable and equitable and include:

- (a) An allocation to the separately owned tracts of the unit area of all oil and gas that is produced from the unit area and which is saved, being the production that is not used in the conduct of unit operations or not unavoidably lost;
- (b) A provision for the credits and charges to be made and the adjustment among the owners in the unit area for their respective investments in wells, tanks, pumps, machinery, materials and equipment contributed to the unit operations;
- (c) A provision governing how the costs of unit operations including capital investments shall be determined and charged to the separately owned tracts and how said costs shall be paid, including a provision providing when, how, and by whom such costs shall be charged to such owner, or the interest of such owner, and how his interest may be sold and the proceeds applied to the payment of his costs;
- (d) A provision for carrying any working interest owner on a limited, carried or net profits basis, payable out of production, upon terms and conditions which are just and reasonable, and which allow an appropriate charge for interest for such service payable out of production, upon such terms and conditions determined by the Division to be just and reasonable;
- (e) A provision designating the unit operator and providing for supervision and conduct of the unit operations, including the selection, removal or substitution of an operator from among the working interest owners to conduct the unit operations;
- (f) A provision for a voting procedure for the decision of matters to be decided by the working interest owners in respect to which each working interest owner shall have a voting interest equal to his unit participation; and

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

(7) This order shall not become effective unless and until seventy-five percent of the working interest owners and seventy-five percent of the royalty interest owners in the unit area have approved the plan for unit operations as required by Section 70-7-8 NMSA, (1978) Comp.

(8) If the persons owning the required percentage of interest in the unit area as set out in Section 70-7-8 NMSA, (1978) Comp., do not approve the plan for unit operations within a period of six (6) months from the date of entry of this order, this order shall cease to be of further force and effect and shall be revoked by the Division, unless the Division shall extend the time for ratification for good cause shown.

(9) When the persons owning the required percentage of interest in the unit area have approved the plan for unit operations, the interests of all persons in the Unit Area are unitized whether or not such persons have approved the plan of unitization in writing.

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

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



WILLIAM J. LeMAY
Director

S E A L

**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. 10516
Order No. R-9714**

**APPLICATION OF TEXACO EXPLORATION AND
PRODUCTION INC. FOR A WATERFLOOD PROJECT,
LEA COUNTY, NEW MEXICO.**

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on July 23, 1992, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 3rd day of September, 1992, 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) The applicant, Texaco Exploration and Production Inc. (Texaco), seeks authority to institute a waterflood project in its Vacuum Glorieta West Unit by the injection of water into the Glorieta and Paddock formations, Vacuum Glorieta Pool, Lea County, New Mexico, through the gross perforated and/or open hole interval from approximately 5,950 feet to 6,230 feet in one existing and fifty-nine wells to be drilled at orthodox and unorthodox locations as shown on Exhibit "A" attached hereto.

(3) By Order No. R-9710 issued in Case No. 10515 on August 25, 1992, the Division, upon application of Texaco, approved the Vacuum Glorieta West Unit which comprises some 2778.86 acres, more or less, in Townships 17 and 18 South, Ranges 34 and 35 East, NMPM, Lea County, New Mexico.

(4) The vast majority of wells located within the applicant's Vacuum Glorieta West Unit Area are in an advanced state of depletion and should properly be classified as "stripper wells".

(5) The proposed waterflood project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

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

(7) The injection of water into each of the wells shown on Exhibit "A" should be accomplished through internally cement-lined 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.

(8) Prior to commencing injection operations into the wells shown on Exhibit "A", the casing in each well should be pressure tested throughout the interval from the surface down to the proposed packer setting depth to assure the integrity of such casing.

(9) The injection wells or 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 1200 psi.

(10) The Division Director should have the authority to administratively authorize a pressure limitation in excess of the pressure limitation described in Finding No. (9) above upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.

(11) 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 injection equipment and of the mechanical integrity pressure tests in order that the same may be witnessed.

(12) Prior to commencing injection operations into the proposed Vacuum Glorieta West Unit Well Nos. 21, 43, 69, 97, 109 and 110, the applicant should be required to submit to the Santa Fe Office of the Division an executed copy of an Injection Lease-Line Agreement.

(13) 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.

(14) At the time of the hearing, the applicant requested that the subject waterflood be certified 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).

(15) The evidence presented indicates that the subject waterflood meets all the criteria for certification.

(16) The certified "project area" should initially comprise the area approved for statutory unitization by Division Order No. R-9710, and described as follows, provided however, the "project area" and/or the producing wells 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:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM

Section 24: SW/4, SW/4 NW/4, SW/4 SE/4
Section 25: All
Section 26: E/2 SE/4
Section 35: NE/4, N/2 SE/4, SE/4 SE/4
Section 36: All

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Section 30: Lots 1, 2, 3, 4 (W/2 W/2)
Section 31: Lots 1, 2, 3, 4 (W/2 W/2)

TOWNSHIP 18 SOUTH, RANGE 34 EAST, NMPM

Section 1: Lots 1, 2, 3, 4 (N/2 N/2), S/2 NE/4
Section 2: Lot 1 (NE/4 NE/4)

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 6: Lots 1, 2, 3, 4, 5, SE/4 NW/4, S/2 NE/4, (N/2)

IT IS THEREFORE ORDERED THAT:

(1) The applicant, Texaco Exploration and Production Inc. (Texaco), is hereby authorized to institute a waterflood project in its Vacuum Glorieta West Unit by the injection of water into the Glorieta and Paddock formations, Vacuum-Glorieta Pool, Lea County, New Mexico, through the gross perforated and/or open hole interval from approximately 5,950 feet to 6,230 feet in one existing and fifty-nine wells to be drilled at orthodox and unorthodox locations as shown on Exhibit "A" attached hereto.

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

(3) Injection into the wells shown on Exhibit "A" shall be accomplished through cement-lined tubing installed in a packer set approximately within 100 feet of the uppermost injection perforation 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) The injection wells or pressurization system shall be equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than 1200 psi.

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

(6) Prior to commencing injection operations into the wells shown on Exhibit "A", the casing in each well shall be pressure-tested throughout the interval from the surface down to the proposed packer setting depth, to assure the integrity of such casing.

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

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

(9) The subject waterflood is hereby designated the Vacuum Glorieta West Unit Waterflood Project and shall be governed by the provisions of Rule Nos. 701 through 708 of the Oil Conservation Division Rules and Regulations.

(10) Monthly progress reports of the waterflood project herein authorized shall be submitted to the Division in accordance with Rule Nos. 706 and 1115 of the Division Rules and Regulations.

(11) The applicant shall be required to obtain Division approval, subsequent to the entry of this order, to drill any injection well located at an unorthodox location closer than 330 feet from the outer boundary of the Vacuum Glorieta West Unit.

(12) Prior to commencing injection operations into the proposed Vacuum Glorieta West Unit Well Nos. 21, 43, 69, 97, 109 and 110, the applicant shall submit to the Santa Fe Office of the Division an executed copy of an Injection Lease-Line Agreement.

(13) The subject waterflood is a qualified "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).

(14) To be eligible for the EOR credit, the operator must advise the Division when injection operations will commence and request the Division certify the project to the Taxation and Revenue Department.

(15) The certified "project area" shall initially comprise the area approved for statutory unitization by Division Order No. R-9710, and described as follows, provided however, the "project area" and/or the producing wells 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:

TOWNSHIP 17 SOUTH, RANGE 34 EAST, NMPM

Section 24: SW/4, SW/4 NW/4, SW/4 SE/4
Section 25: All
Section 26: E/2 SE/4
Section 35: NE/4, N/2 SE/4, SE/4 SE/4
Section 36: All

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Section 30: Lots 1, 2, 3, 4 (W/2 W/2)
Section 31: Lots 1, 2, 3, 4 (W/2 W/2)

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TOWNSHIP 18 SOUTH, RANGE 34 EAST, NMPM

Section 1: Lots 1, 2, 3, 4 (N/2 N/2), S/2 NE/4
Section 2: Lot 1 (NE/4 NE/4)

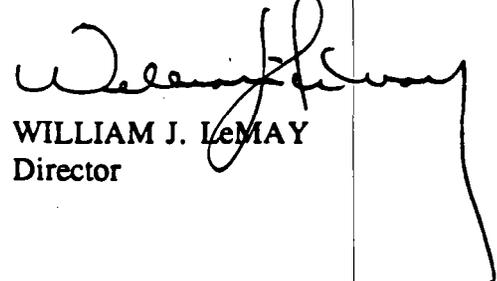
TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 6: Lots 1, 2, 3, 4, 5, SE/4 NW/4, S/2 NE/4, (N/2)

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

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

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION



WILLIAM J. LEMAY
Director

S E A L

EXHIBIT "A"
 DIVISION ORDER NO. R-9714
 VACUUM GLORIETA WEST UNIT
APPROVED NEWLY DRILLED INJECTION WELLS

<u>LEASE NAME</u>	<u>LOCATION</u>	<u>ULSTR</u>	<u>VGWJ WELL NO.</u>
Bridges State	1360' FSL & 1300' FWL	M-24-17S-34E	4
Bridges State	1209' FSL & 2582' FWL	N-24-17S-34E	5
Bridges State	73' FNL & 1411' FWL	C-25-17S-34E	9
Yucca State	100' FSL & 2628' FWL	O-24-17S-34E	10
Bridges State	246' FNL & 1554' FEL	B-25-17S-34E	11
Bridges State	1328' FNL & 1399' FWL	F-25-17S-34E	17
Bridges State	1651' FNL & 2543' FWL	F-25-17S-34E	18
Bridges State	1502' FNL & 1520' FEL	G-25-17S-34E	19
NM T State NCT-1	1541' FNL & 181' FEL	H-25-17S-34E	20
NM N State	1330' FNL & 1283' FWL	E-30-17S-35E	21
Bridges State	1171' FSL & 34' FEL	I-26-17S-34E	27
McAllister State	2304' FSL & 1127' FWL	L-25-17S-34E	28
McAllister State	2522' FSL & 2283' FWL	K-25-17S-34E	29
NM Q State	2305' FSL & 1391' FEL	J-25-17S-34E	30
Swiggart	2520' FSL & 128' FEL	I-25-17S-34E	31
McAllister State	2387' FSL & 51' FEL	M-25-17S-34E	38
McAllister State	1194' FSL & 1055' FWL	M-25-17S-34E	39
McAllister State	1570' FSL & 2404' FWL	K-25-17S-34E	40
NM Q State	1437' FSL & 1646' FEL	J-25-17S-34E	41
NM N State	1250' FSL & 8 FWL	M-30-17S-35E	42
NM N State	1453' FSL & 1247' FWL	L-30-17S-35E	43
State H-35	112' FNL & 1214' FEL	A-35-17S-34E	50
State H-35	24' FNL & 31' FEL	A-35-17S-34E	51
McAllister State	65' FSL & 1587' FWL	N-25-17S-34E	52
McAllister State	65' FSL & 2350' FWL	N-25-17S-34E	53
NM Q State	7' FSL & 1693' FEL	O-25-17S-34E	54
NM N State	177' FSL & 52' FWL	M-30-17S-35E	55
State H-35	1370' FNL & 1135' FEL	A-35-17S-34E	63
NM O State NCT-1	1484' FNL & 204' FWL	E-36-17S-34E	64
NM O State NCT-1	1472' FNL & 1492' FWL	F-36-17S-34E	65

<u>LEASE NAME</u>	<u>LOCATION</u>	<u>ULSTR</u>	<u>VGWU WELL NO.</u>
NM O State NCT-1	1690' FNL & 2577' FWL	F-36-17S-34E	66
NM O State NCT-1	1435' FNL & 1408' FEL	G-36-17S-34E	67
NM O State NCT-1	1491' FNL & 280' FEL	H-36-17S-34E	68
Santa Fe Battery 2	1502' FNL & 1203' FWL	E-31-17S-35E	69
State H-35	2569' FSL & 1326' FEL	H-35-17S-34E	77
NM O State NCT-1	2491' FNL & 127' FWL	E-36-17S-34E	78
State VB	2461' FSL & 1351' FWL	K-36-17S-34E	79
NM O State NCT-1	2552' FNL & 2504' FEL	G-36-17S-34E	80
NM O State NCT-1	2466' FSL & 1505' FEL	J-36-17S-34E	81
NM O State NCT-1	2576' FSL & 82' FEL	I-36-17S-34E	82
M.E. Hale	1459' FSL & 1148' FEL	I-35-17S-34E	91
State I	1451' FSL & 149' FWL	L-36-17S-34E	92
State VB	1723' FSL & 1575' FWL	K-36-17S-35E	93
NM O State NCT-1	1525' FSL & 2591' FEL	J-36-17S-34E	94
NM O State NCT-1	1519' FSL & 1548' FEL	J-36-17S-34E	95
NM O State NCT-1	142' FSL & 214' FEL	I-36-17S-34E	96
Santa Fe Battery 2	1419' FSL & 1225' FWL	L-31-17S-35E	97
NM O State NCT-1	361' FSL & 300' FWL	M-36-17S-34E	104
NM O State NCT-1	403' FSL & 1340' FWL	N-36-17S-34E	105
NM O State NCT-1	310' FSL & 2542' FEL	O-36-17S-34E	106
NM O State NCT-1	184' FSL & 1382' FEL	O-36-17S-34E	107
NM O State NCT-1	213' FSL & 301' FEL	P-36-17S-34E	108
Warn State AC 2	96' FNL & 2498' FWL	C-6-18S-35E	109
NM R State NCT-1	74' FNL & 56' FEL	A-6-18S-35E	110
NM L State	1102' FNL & 1575' FEL	B-1-18S-34E	120
NM L State	1014' FNL & 140' FEL	A-1-18S-34E	121
Warn State AC 2	1000' FNL & 1136' FWL	D-6-18S-35E	122
Warn State AC 2	1080' FNL & 2344' FWL	C-6-18S-35E	123
NM R State NCT-1	1020' FNL & 1419' FEL	B-6-18S-35E	124

EXISTING WELL TO BE CONVERTED TO INJECTION

Bridges State No. 113 80' FNL & 830' FWL E-24-17S-34E 1