Chevron

Chevron U.S.A. Inc.
P.O. Box 670, Hobbs, NM 88240

R. C. Anderson
Division Manager
Production Department
Hobbs Division

October 5, 1988

APPLICATION TO DOWNHOLE
COMMINGLE CHEVRON'S
NANCY STEPHENS WELL NO. 2
LOCATED IN UNIT E
SECTION 24-T21S-R37E
LEA COUNTY, NEW MEXICO

Oil Conservation Division
P.O. Box 2088
Santa Fe, New Mexico 87501

Attention: W. J. LeMay

Gentlemen:

Pursuant to the provisions of Statewide Rule 303-C, Chevron U.S.A. Inc. respectfully requests administrative approval to commingle production from the Blinebry Oil & Gas and Tubb Oil & Gas pools within the subject wellbore.

The subject well was previously downhole commingled in the Blinebry and Drinkard pools, prior to recompletion of the Tubb Oil & Gas pool in September 1988. The Drinkard was subsequently abandoned and the Blinebry is currently temporarily abandoned in the tubing-casing annulus. Since both the Tubb and Blinebry are marginal producers, dual completion of the well cannot be economically justified. In the interest of conservation and prevention of waste, we propose to downhole commingle the Tubb and Blinebry Oil & Gas pools in the subject well.

Enclosed is pertinent data supporting this application as outlined in Rule 303-C. If additional information is required, please contact Byron Hebert at (505) 393-4121.

Yours very truly,

R. C. Anderson

BPH/dms

Attachments

cc: J. T. Sexton, District 1 Supervisor
Oil Conservation Division
P.O. Box 1980
Hobbs, New Mexico 88240

Offset Operators (list attached)
B. P. Hebert
C. L. Morrill

HOBBS DIVISION
CHEVRON U.S.A. INC.
DOWNHOLE COMMINGLE APPLICATION
NANCY STEPHENS WELL NO. 2
DATA SHEET

1. Operator:

Chevron U.S.A. Inc., P.O. Box 670, Hobbs, New Mexico 88240

2. Lease, Well, and Location:

Nancy Stephens No. 2, 1980' FNL and 660' FWL of Section 24-T21S-R37E, Lea County, New Mexico.

3. Producing Zones:

Blinebry Oil & Gas and Tubb Oil & Gas

4. Decline Curve:

The Blinebry was producing 1 BOPD, 1 BWPD, and 18 MCFGPD, prior to completion of the Tubb in September 1988 and is expected to continue to decline at 10% per year.

The well was recompleted in the Tubb in September 1988. The Tubb IP'd pumping (under a packer) at an average rate of 3 BOPD, 2 BWPD, and 4 MCFGPD over a 1-week period and is expected to decline at 10% per year.

5. Bottom Hole Pressure:

Tubb BHP buildup was conducted September 26-27, 1988. The static BHP was measured to be 567 psi at a mid-perf depth of 6360' from surface.

Blinebry BHP was calculated to be 287 psi at a mid-perf depth of 5770' from surface.

6. Fluid Characteristics:

The Blinebry and Tubb are currently surface commingled under surface commingling order PC-138 (3rd Amendment). There has been no evidence of fluid incompatibility to date.

7. Well History:

The subject well was spudded in April 1954 and drilled to a total depth of 7150'. Eight and five-eighths inch intermediate casing was set at 2999' and cemented with 1638 sacks. Subsequent top of cement was measured to be at 246'

from surface by temperature survey. Five and one-half inch production casing was set at 7149' and cemented to the surface with 1000 sacks.

June 1954 - Dually completed well in Abo and Blinebry. Perforated Abo at 6885'-7115' and acidized with 14,000 gals. 15% NEA. Perforated Blinebry at 5675'-5740' and acidized with 10,000 gals. 15% NEA.

December 1955 - Installed pumping equipment for Abo.

May 1957 - Abandoned Abo and reconditioned Blinebry. Set Dr plug in Model D packer at 6835' and capped with 20' of sand and 23' of cement. Perforated additional Blinebry pay at 5646'-5895'. Frac'd Blinebry perfs 5844'-5895' with 10,000 gals. lease oil and 10,000 lbs. sand. Frac'd Blinebry perfs 5646'-5794' with 16,000 gals. lease oil and 16,000 lbs. sand.

May 1963 - Dually completed well in Drinkard and existing Blinebry. Perforated Drinkard at 6524'-6627' and frac'd with 32,000 gals. gelled lease oil and 66,000 lbs. sand.

December 1963 - Installed pumping equipment for Drinkard.

March 1976 - Downhole commingled Drinkard and Blinebry pools.

September 1988 - Abandoned Drinkard and recompleted in Tubb pool. Set cement retainer at 6500' and squeezed Drinkard perfs with 100 sacks of cement. Perforated Tubb at 6262'-6457' and acidized with 4000 gals. 15% NEA. Frac'd Tubb perfs with 29,500 gals 40# crosslinked gel and 68,500 lbs. sand. Set lok-set packer at 6186' and ran pump and rods.

8. Value of Commingled Fluids:

The subject pools are surface commingled; therefore, downhole commingling will not affect the price.

9. Current Production:

The Tubb is currently producing at an average rate of 3 BOPD, 2 BWPD, and 4 MCFGPD (1-week average). The Blinebry was producing at an average rate of 1 BOPD, 1 BWPD, and 18 MCFGPD, prior to Tubb recompletion in September 1988.

10. Recommended Oil and Gas Allocations:

Based on expected IP's and decline rates

Blinebry		Tubb
25%	Oil	75%
82%	Gas	18%

11. Ownership and Royalty Interest:

Ownership of the two pools is common and correlative rights will not be violated.

12. Future Secondary Recovery Operations:

Commingling will not jeopardize the efficiency of future secondary recovery operations.

13. Production Methods:

The commingled production will be rod pumped. The fluid level will be monitored to maintain a pumped off condition and to eliminate the possibility of cross flow between reservoirs.

14. Notification:

Copies of this application have been furnished to all offset operators by certified mail.

OFFSET OPERATORS

Arco Oil & Gas Company
P.O. Box 1610
Midland, Texas 79702

Bison Petroleum Corp.
5809 South Western
Suite 200
Amarillo, Texas 79110

Conoco Inc.
P.O. Box 460
Hobbs, New Mexico 88240

Lynx Petroleum Consultants, Inc.
P.O. Box 1666
Hobbs, New Mexico 88240

Mobil Producing Texas and New Mexico, Inc.
Nine Greenway Plaza
Suite 2700
Houston, Texas 77046

Shell Western E & P Inc.
P.O. Box 1950
Hobbs, New Mexico 88240

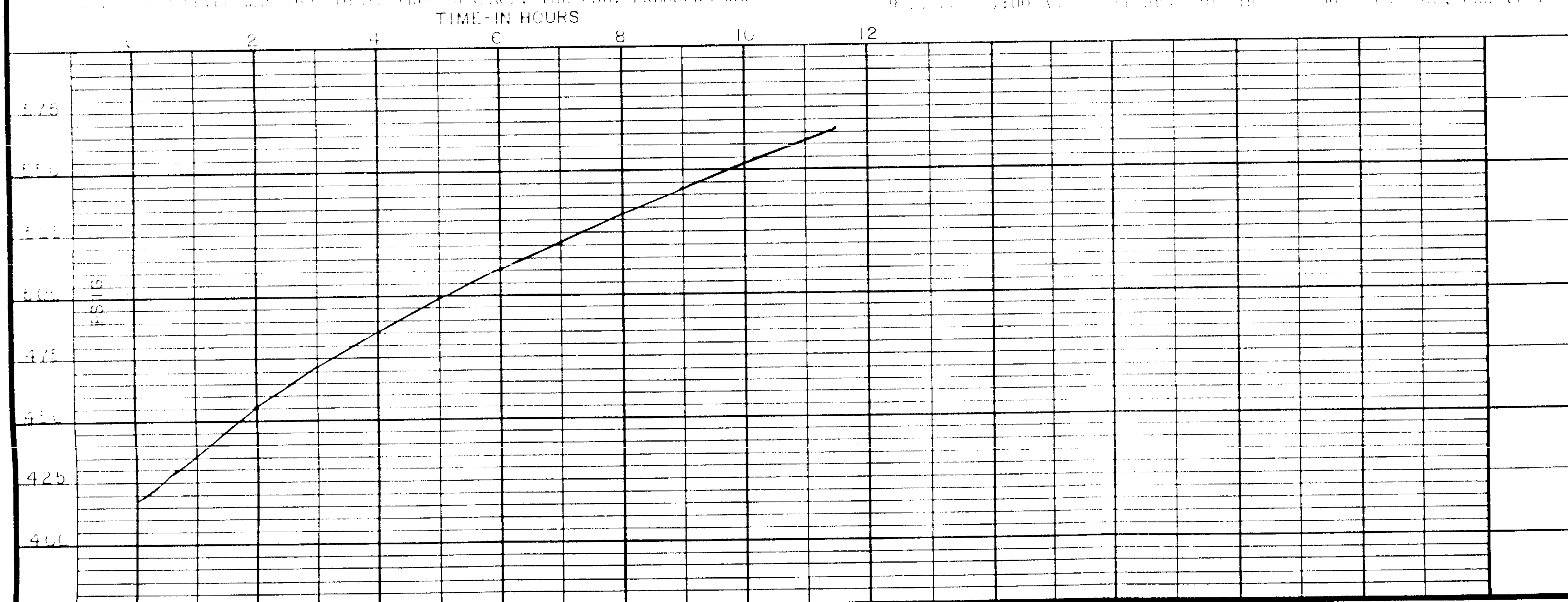
Certified Mail - Return Receipt Requested

[illegible], INC.
[illegible] No. [illegible]
[illegible] Pressure Build-up Curve

[illegible] Date:	Sept. 26 & 2[illegible], 1988
[illegible] Depth:	6,360 Feet
[illegible] No.:	[illegible]
Range:	0-[illegible] PSI
[illegible] No.:	[illegible]
Range:	0-[illegible] HOUR

[illegible] WELL SOUNDER WAS USED TO SHOOT THE FLUID LEVEL. [illegible] LEVEL WAS [illegible] JOINTS FROM SURFACE. THE CSG. PRESSURE WAS [illegible] PSIG.

DATE	TIME	[illegible] HRS. MIN.	PSIG @ 6,360 [illegible]
9-26-88	7:00 PM	[illegible] Hrs 00 Min	[illegible]
		[illegible] [illegible]0	[illegible]
		[illegible] [illegible]0	[illegible]
		[illegible] 00	[illegible]
		[illegible] 00	[illegible]
		[illegible] 00	[illegible]
9-2[illegible]-88	11:30 PM	[illegible] 00	[illegible]
9-27-88	12:30 AM	[illegible] 00	[illegible]
		[illegible] 00	511
		[illegible] 00	[illegible]
		[illegible] 00	533
		[illegible] 00	[illegible]
		[illegible] 00	553
9-2[illegible]	7:00 AM	[illegible] Hrs [illegible] Min	[illegible]



JOHN W. WEST ENGINEERING CO., HOBBS, NEW MEXICO

Date: 9-[illegible] | Drawn By: [illegible] | Scale: AS SHOWN

NANCY STEPHENS NO. 2
BLINEBRY OIL & GAS POOL
BHP CALCULATION

$$BHP = P_{Gas\ Column} + P_{Liquid\ Column}$$

1) $$P_{Gas} = P_{WH}\, e^{\frac{0.01875 \times SG \times D}{S_{avg} \times T_{avg}}}$$ (Craft & Hawkins Correlation)

2) $$P_{Liquid} = (.052)(MPD-D)\left[(\rho_{Oil})(\%\ Oil) + (\rho_{BW})(1 - \%\ Oil)\right]$$

Where:

P_{WH} = Static WH pressure = 25 psi

SG = Gas gravity approx. 0.65

D = Height of gas column or distance to fluid from acoustic measurement
= 169 jts x 30.4'/jt approx. 5138'

S_{avg} = Average gas deviation factor = 0.831

T_{avg} = Average temperature in degrees Rankine
= 90° + 460 = 550°R

MPD = Mid-perf depth = 5771'

ρ_{Oil} = Oil density for 40.8° API = 6.85 lbs./gal.

$\%_{Oil}$ = Decimal oil cut

ρ_{BW} = Brine water Density = 8.8 lbs./gal.

1) $$P_{Gas} = (25\, e^{\frac{(0.01875)(.65)(5138)}{(0.831)(550)}} = 28.7 \text{ psi approx. } 29 \text{ psi}$$

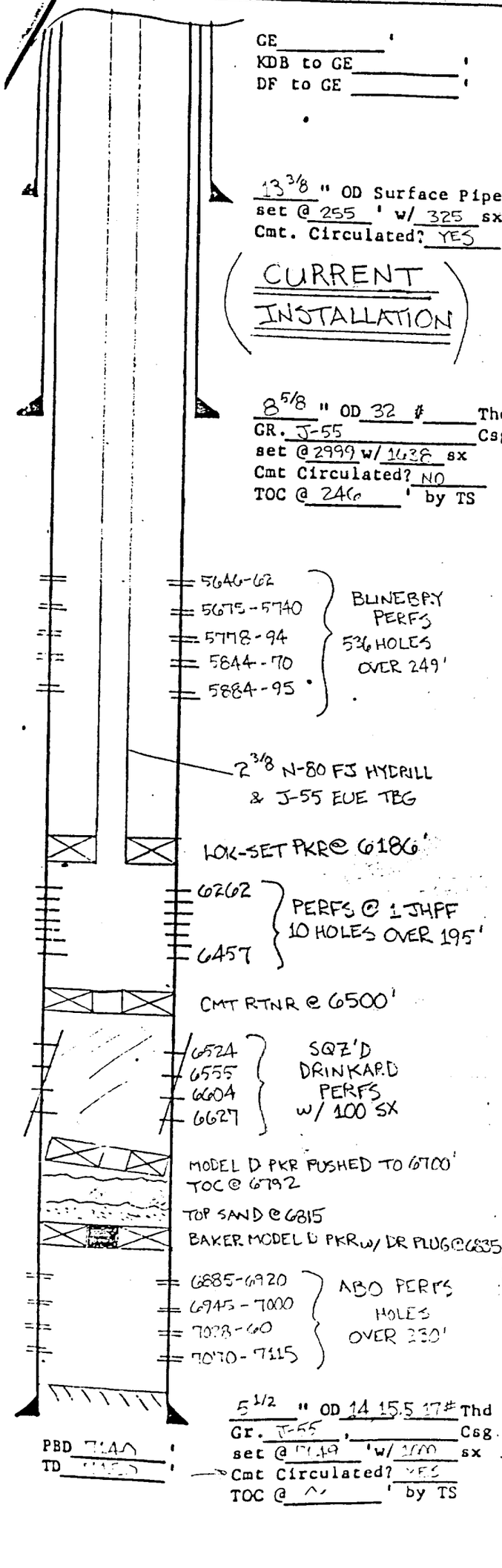
2) $$P_{Liquid} = (.052)(5771-5138)\ (6.85)(.5) + (8.8)(1-.5)$$
$$= 257.6 \text{ psi approx. } 258 \text{ psi}$$

BHP = 29 psi + 258 psi
= 287 psi

WELL NO. NANCY STEPHENS #2 FIELD/POOL BLINEBRY O&G - DRINKARD DATE 5/88

1980' FEET FROM NORTH LINE AND 660 FEET FROM WEST LINE

SECTION 24, T21S R37E UNIT E COUNTY LEA STATE N.M.



Date Completed SPUD APR '54

Initial Formation

From: ' to ' GOR

Initial: Production ☐ bopd bwp

Or: Injection ☐ bwpd @ psi

Completion Data:

(JUN '54) PERF'D ABO @ 6885-6920, 6945-7000, 702 & 7070-7115 w/ 4-½" JHPF. PERF'D BLINEBRY @ 5675- w/ 4-½" JHPF. ACID'Z ABO w/ A TOTAL OF 14000 GALS 15 NEA. ACID'Z BLINEBRY w/ A TOTAL OF 10,000 GALS 15% TUBED UP AS DUAL. ABO IPF 41 BOPD, O BW IN 5 HRS. 24 HR RATE OF 197 BOPD. BLINEBRY IPF 82 MCFGPD

(DEC '55) INSTALLED PPG EQUIP ON ABO. PPG 118 BOPD & O BA - FLG 1 BOPD

Subsequent Workover or Reconditioning:

(MAY '57) ABANDONED ABO & RECONDITIONED BLINE SET DR PLUG IN MODEL D PKR @ 6835, CAPPED w/ 20' SAND 23' CMT. PERF'D ADDT'L BLINEBRY @ 5646-62, 5778-94 5844-70, & 5884-95 w/ 4-½" JHPF. FRAC'D PERFS 584 5895 IN 2 STAGES w/ A TOTAL OF 10,000 GALS REF'D O & 10,000 # SAND @ 10 BPM. FRAC'D PERFS 5646-5794 IN 2 STAGES w/ A TOTAL OF 16,000 GALS REF'D OIL & 16,000 SAND @ 8 BPM. BLINEBRY IPF 72 BOPD, O BWPD & 3601 MCFGPD. BA - FLG 9 BOPD, O BWPD & 12 MCFGPD. ABO IA'D. BA PPG 3 BOPD

(MAY '63) DUALLY COMPLETED DRINKARD w/ EXISTING BLINEBRY. PERF'D DRINKARD @ 6524, 55, 6604 & 27 w/ 5-1" MONO PLANE JET SHOTS. BROKE DOWN w/ 500 GAL 15% NEA. FRAC'D w/ A TOTAL OF 32000 GALS GELLED LS OIL & 66,000 # SD IN 4 EQUAL STAGES @ 15 BPM & 53 SET MODEL D PKR @ 6465 & TUBED UP AS DUAL. DRINKARD IPF 67 BOPD, O BWPD & 145 MCFGPD. BLINEBRY FLG 14 BOPD, 3 BWPD & 483 MCFGPD.

(DEC '63) INSTALLED PPG EQUIP FOR DRINKARD. PPG 33 BOPD, 66 BWPD & 17 MCFGPD. BA - FLG 2% BOPD. 5% BWPD & 19 MCF/D.

(MAR '76) DHC DRINKARD & BLINEBRY. ACID'Z DRINKARD PERFS 6524-6627 w/ 2000 GALS 15% NEA. ACID'Z BLINEBRY PERFS 5646-5895 w/ 2000 GALS 15% NEA. PLACED ZONES ON PUMP TOGETHER. PPG 19 BOPD, & 4 BWPD

Present Inj. ☐ bwpd @ psi Date

Present Prod. ☐ bopd bwpd Date

GAS MCFPD

Remarks Or Additional Data:

(CUMS: AS OF 12-87) WANTZ ABO - 11 MBO 13 MMCFG
DRINKARD - 44 MBO 175 MMCFG
BLINEBRY - 77 MBO 17 MCFG

PRODUCTION AS OF FEBRUARY 1988: BLINEBRY - 1 BOPD, 1 BWPD, 18 M
DRINKARD - 1 " 0 " 3 "

WELL NO. NANCY STEPHENS #2 FIELD/POOL BLINEBRY O&G-DRINKARD DATE 5/88

TION 1980' FEET FROM NORTH LINE AND 660 FEET FROM WEST LINE

CTION 24, T21S R37E UNIT E COUNTY LEA STATE N.M.

GE ' Date Completed SPUD APR '54
KDB to GE ' Initial Formation
DF to GE ' From: ' to ' GOR
Initial: Production ☐ bopd bwpd
Or: Injection ☐ bwpd @ psi

Completion Data:
(JUN'54) PERF'D ABO @ 6885-6920, 6945-7000, 7028 & 7070-7115 w/ 4-½" JHPF. PERF'D BLINEBRY @ 5675-5 w/ 4-½" JHPF. ACID'Z ABO w/ A TOTAL OF 14000 GALS 15% NEA. ACID'Z BLINEBRY w/ A TOTAL OF 10,000 GALS 15% TUBED UP AS DUAL, ABO IPF 41 BOPD, O BW IN 5 HRS. 24 HR RATE OF 197 BOPD. BLINEBRY IPF 82 MCFGPD

(DEC'55) INSTALLED PPG EQUIP ON ABO, PPG 118 BOPD & O BA - FLG 1 BOPD

Subsequent Workover or Reconditioning:

(MAY'57) ABANDONED ABO & RECONDITIONED BLINE SET DR PLUG IN MODEL D PKR @ 6835, CAPPED w/ 20' SAND 23' CMT. PERF'D ADDT'L BLINEBRY @ 5646-62, 5778-94 5844-70, & 5884-95 w/ 4-½" JHPF. FRAC'D PERFS 584 5895 IN 2 STAGES w/ A TOTAL OF 10,000 GALS REF'D OI & 10,000 # SAND @ 10 BPM. FRAC'D PERFS 5646-5794 IN 2 STAGES w/ A TOTAL OF 16,000 GALS REF'D OIL & 16,000 SAND @ 8 BPM. BLINEBRY IPF 72 BOPD, O BWPD & 361 MCFGPD. BA - FLG 9 BOPD, 0 BWPD & 12 MCFGPD, ABO IA'D. PA PPG 3 BOPD

(MAY'63) DUALLY COMPLETED DRINKARD w/ EXISTING BLINEBRY. PERF'D DRINKARD @ 6524, 55, 6604 & 27 w/ 5-1" MONO PLANE JET SHOTS. BROKE DOWN w/ 500 GALS 15% NEA. FRAC'D w/ A TOTAL OF 32000 GALS GELLED LSE OIL & 66,000 # SD IN 4 EQUAL STAGES @ 15 BPM & 53 SET MODEL D PKR @ 6465 & TUBED UP AS DUAL. DRINK-ARD IPF 67 BOPD, O BWPD & 145 MCFGPD. BLINEBRY FLG 14 BOPD, 3 BWPD & 483 MCFGPD.

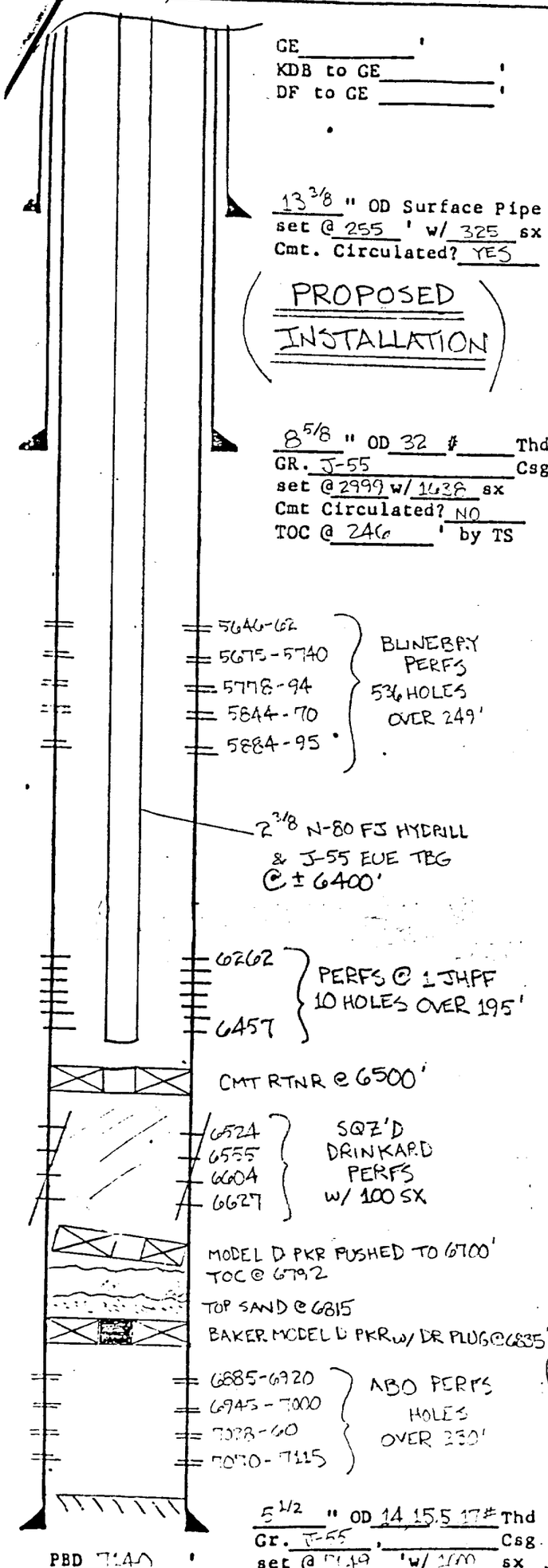
(DEC'63) INSTALLED PPG EQUIP FOR DRINKARD, PPG 33 BOPD, 66 BWPD & 17 MCF/D. BA - FLG 2½ BOPD, 5½ BWPD & 19 MCF/D.

(MAR'76) DHC DRINKARD & BLINEBRY. ACID'Z DRINK-ARD PERFS 6524-6627 w/ 2000 GALS 15% NEA. ACID'Z BLINEBRY PERFS 5646-5895 w/ 2000 GALS 15% NEA. PLACED ZONES ON PUMP TOGETHER. PPG 19 BOPD, & 4 BWPD

Present Inj. ☐ bwpd @ psi Date
Present Prod. ☐ bopd bwpd Date
GAS MCFPD

Remarks Or Additional Data:
CUMS: WANTZ ABO - 11 MBO 13 MMCFG
AS OF 12-87 DRINKARD - 44 MBO 175 MMCFG
BLINEBRY - 77 MBO 1.7 BCFG

PRODUCTION AS OF: BLINEBRY - 1 BOPD, 1 BWPD, 18 M
FEBRUARY 1988 DRINKARD - 1 " 0 " 3 "



EW MEXICO OIL CONSERVATION COM. ION

WELL LOCATION AND ACREAGE DEDICATION PLAT

Form C-102
Supersedes C-128
Effective 1-1-65

All distances must be from the outer boundaries of the Section.

hevron U.S.A. Inc.		Lease: Nancy Stephens		Well No.: 2
er	Section: 24	Township: 21S	Range: 37E	County: Lea

Footage Location of Well:
1980 feet from the North line and 660 feet from the West line

Ground Level Elev.	Producing Formation: Tubb	Pool: Tubb Oil and Gas	Dedicated Acreage: 40 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

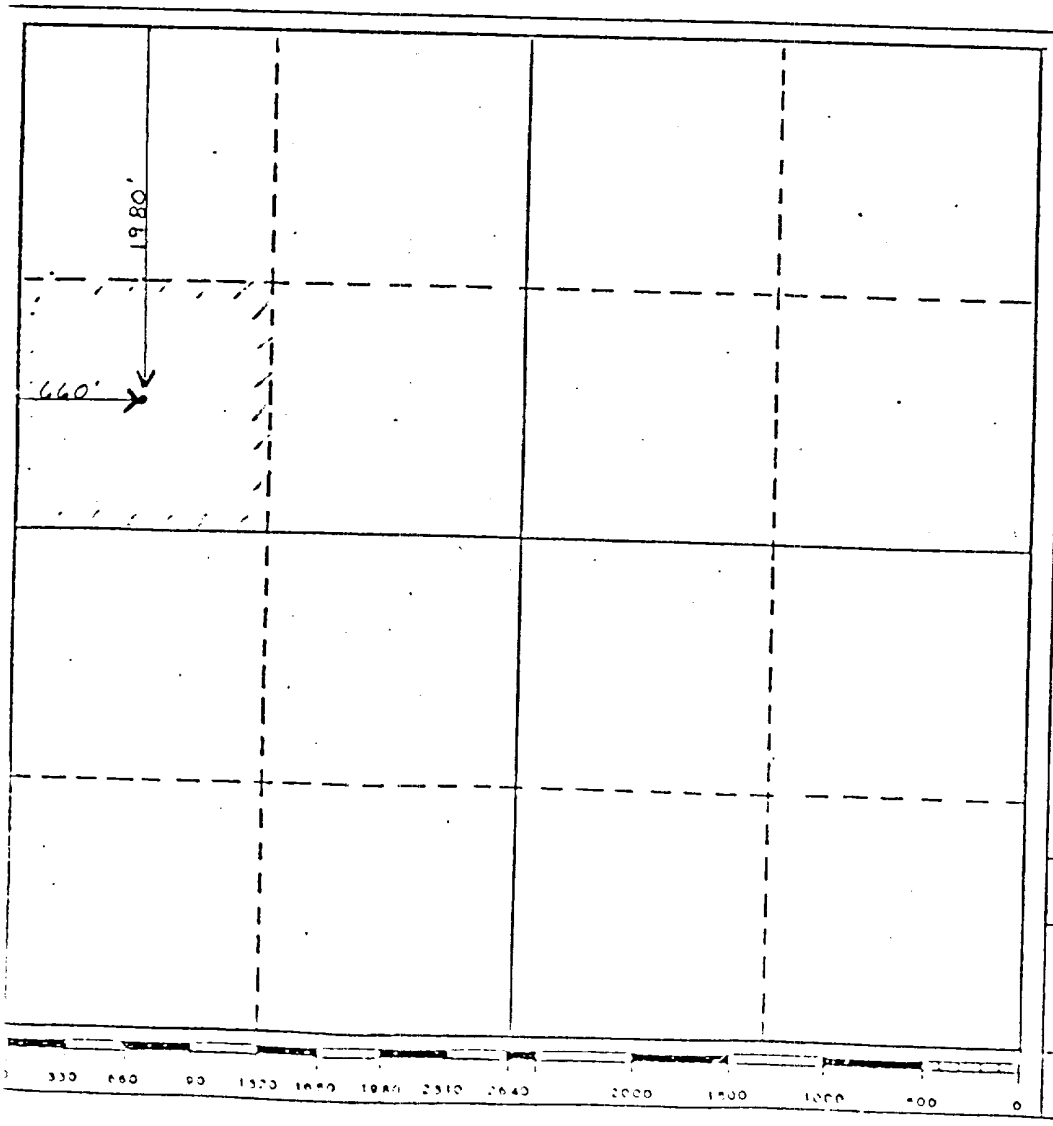
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interests of all owners been consolidated by communitization, unitization, force-pooling. etc?

☐ Yes ☐ No If answer is "yes," type of consolidation _____

If answer is "no," list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary.) _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interests, has been approved by the Commission.



CERTIFICATION

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

M. E. Akins

Name: M.E. Akins

Position: Staff Drilling Engr.

Company: Chevron U.S.A. Inc.

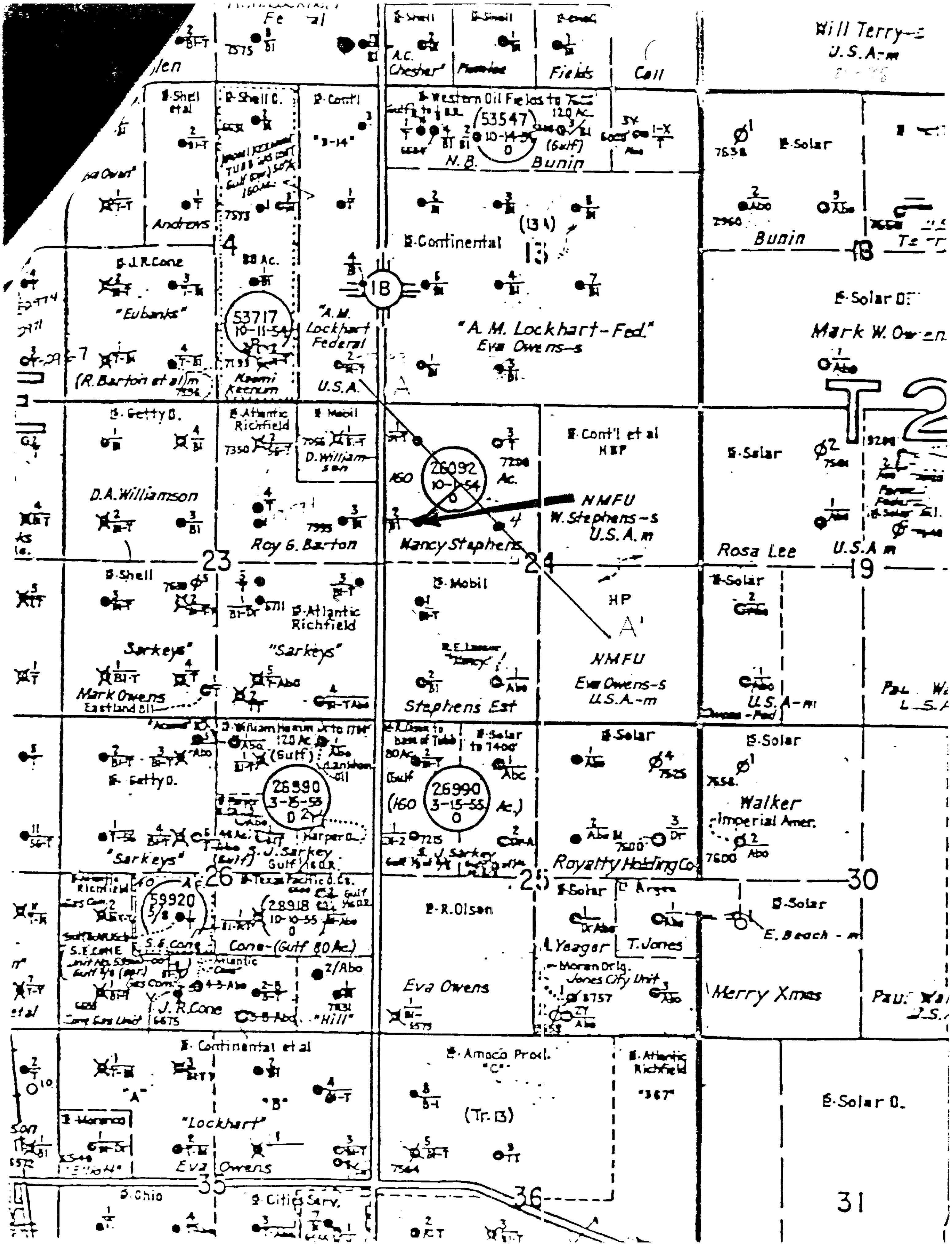
Date: JUNE 17, 1988

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

Registered Professional Engineer and/or Land Surveyor

Certificate No.

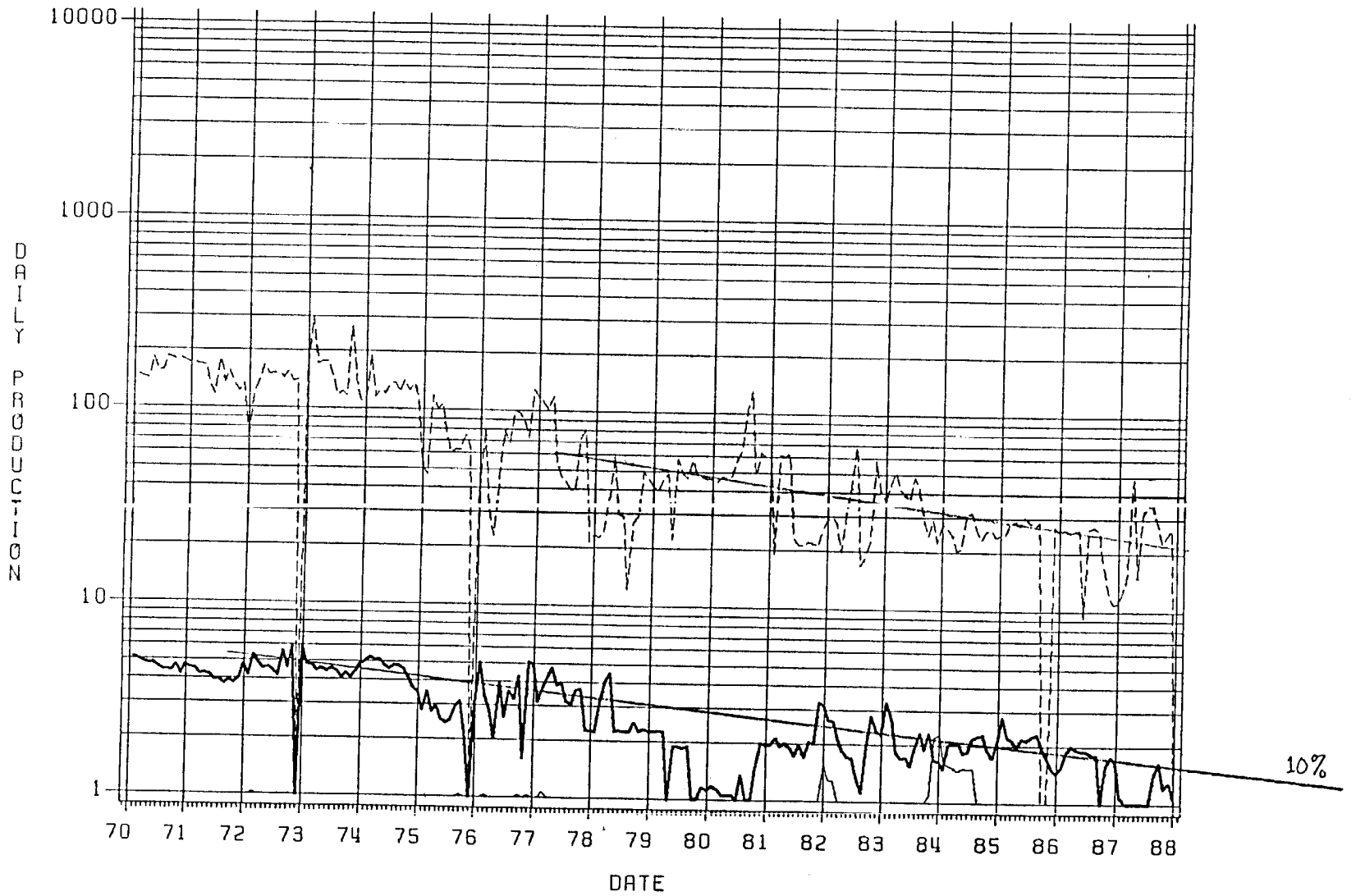


Will Terry-S
U.S.A-m
A.C. Chester
Fields
Cell
Western Oil Fields to
53547
10-14-54
120 Ac.
(Gulf)
N.B. Bunin
Solar
Bunin
Continental
13
J.R. Cone
"Eubanks"
53717
10-11-54
18
"A.M. Lockhart Federal"
"A.M. Lockhart-Fed."
Eva Owens-s
Solar Oil
Mark W. Owens
(R. Barton et al)m
Naomi Keenum
U.S.A.
A
Getty O.
Atlantic Richfield
Mobil
D. Williamson
Cont'l et al
HBP
26092
10-11-54
160
Ac.
D.A. Williamson
NMFU
W. Stephens-s
U.S.A.m
Roy G. Barton
Nancy Stephens
Rosa Lee
U.S.A.m
23
24
19
Shell
Mobil
HP
A'
Atlantic Richfield
"Sarkeys"
NMFU
Eva Owens-s
U.S.A.-m
Mark Owens
Eastland Oil
Stephens Est
Getty O.
26990
3-15-55
(Gulf)
(160 Ac.)
Walker
Imperial Amer.
"Sarkeys"
S.J. Sarkey
Royalty Holding Co.
26
25
30
Texas Pacific O.&G.
59920
28918
10-10-55
R. Olsen
Solar
T. Jones
E. Beach-m
S.E. Cone
Cone-(Gulf 80 Ac.)
Yeager
Moran Drlg.
Jones City Unit
Eva Owens
Merry Xmas
J.R. Cone
"Hill"
Continental et al
Amoco Prod.
"C"
Atlantic Richfield
"367"
"A"
"B"
(Tr. 13)
Solar O.
"Lockhart"
"Elliott"
Eva Owens
35
36
31
Ohio
Cities Serv.

PRODUCTION DATA PLOT

PETROLEUM INFORMATION

WELLNO=002 WELLNA=NANCY STEPHENS OPERNA=CHEVRON U.S.A. INC. FLDRESNA=BLINEBRY OIL AND GAS

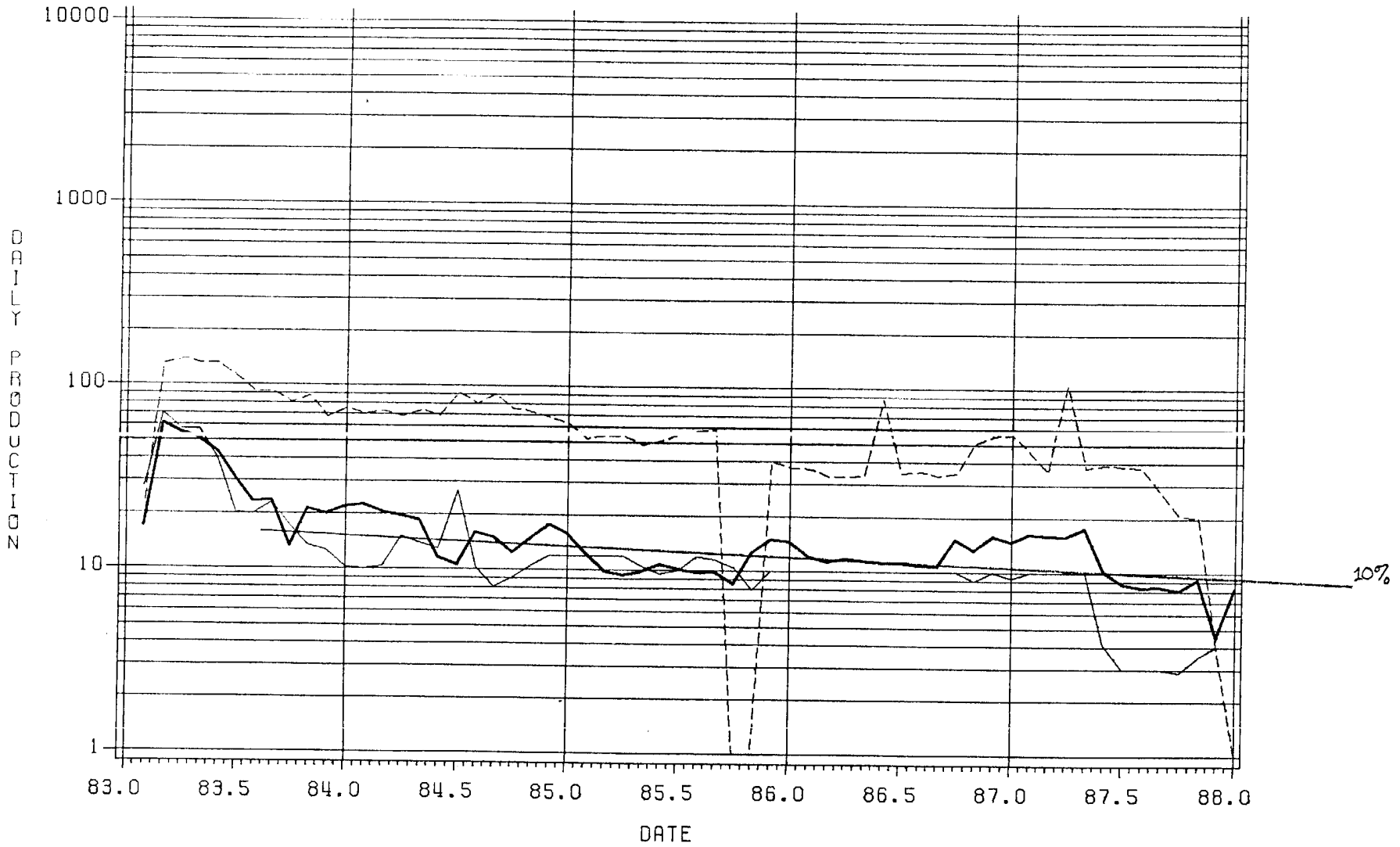


HEAVY SOLID LINE=BOPD
SOLID LINE=BWPD
LIGHT DASHED LINE=MCFD

PRODUCTION DATA PLOT

PETROLEUM INFORMATION

WELLNO=004 WELLNA=NANCY STEPHENS OPERNA=CHEVRON U.S.A. INC. FLDRESNA=TUBB OIL AND GAS

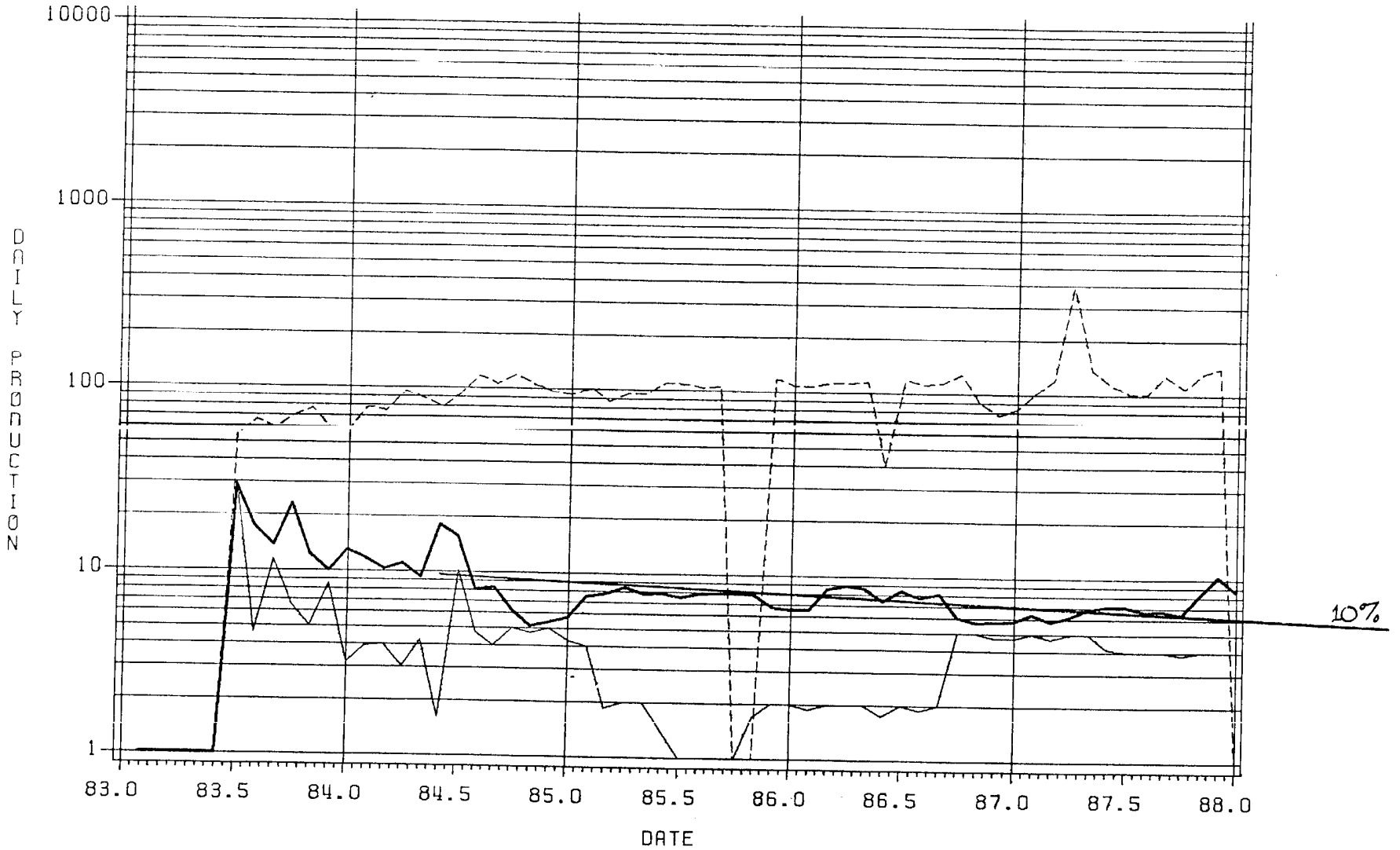


HEAVY SOLID LINE=BOPD
SOLID LINE=BWPD
LIGHT DASHED LINE=MCFD

PRODUCTION DATA PLOT

PETROLEUM INFORMATION

WELLNO=001 WELLNA=NANCY STEPHENS OPERNA=CHEVRON U.S.A. INC. FLDRESNA=TUBB OIL AND GAS



HEAVY SOLID LINE=BOPD
SOLID LINE=BWPD
LIGHT DASHED LINE=MCFD

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

Form C-116
Revised 10-1-78

GAS – OIL RATIO TESTS

Operator: CHEVRON, USA, INC.
Pool: Blinebry Tubbs
County: LEA
Address: P.O. BOX 670 HOBBS, N.M.
TYPE OF TEST – (X) Scheduled [ ] Completion [ ] Special [X]

LEASE NAME	WELL NO.	LOCATION U	S	T	R	DATE OF TEST	STATUS	CHOKE SIZE	TBG. PRESS.	DAILY ALLOWABLE	LENGTH OF TEST HOURS	PROD. DURING TEST WATER BBLS.	GRAV. OIL	OIL BBLS.	GAS M.C.F.	GAS – OIL RATIO CU.FT/BBL
Nancy Stephens	2	E	24	21	37	8/5/88	P	2"wo	35	1	24	1	38.0	1	18.0	18,000
						Above is Blinebry Test										
						Tubbs Test Below										
						10/3/88	P	2"wo	35	3	24	2	38.7	3	4.0	1333
				C-116 For CDH												

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowables when authorized by the Division.

Gas volumes must be reported in MCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report casing pressure in lieu of tubing pressure for any well producing through casing.

Mail original and one copy of this report to the district office of the New Mexico Oil Conservation Division in accordance with Rule 301 and appropriate pool rules.

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

P.R. Jennings
(Signature)
P.S.
(Title)
10/5/88