



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

3-14-89

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 1980
HOBBS, NEW MEXICO 88241-1980
(505) 393-6161

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

RE: Proposed:

MC _____
DHC ☒ _____
NSL _____
NSP _____
SWD _____
WFX _____
PMX _____

Gentlemen:

I have examined the application for the:

Sun E + P Co. Walter Lynch # 2-L 1-22-37
Operator Lease & Well No. Unit S-T-R

and my recommendations are as follows:

Yours very truly,

Jerry Sexton
Supervisor, District 1

/ed

3-14-89

Amended



COPY

**Sun Production
Operations Division**
Southwestern District

**Sun Exploration and
Production Company**
No 24 Smith Road
ClayDesta Plaza
PO Box 1861
Midland TX 79702 9970
915 688 0300

March 9, 1989

Mr. David Catanach
Energy & Mineral Dept.
Oil Conservation Division
P. O. Box 2088
Santa Fe, NM 87501

RE: Request for exception to Rule 303-A
Downhole Commingling
Sun Exploration & Production Company
Walter Lynch No. 2, Unit "L",
660' FWL & 1980' FSL, Sec 1,
T-22-S, R-37-E
Paddock
Brunson Drinkard-Abo, South
Wantz Granite Wash
Eunice San Andres, South
Lea County, New Mexico

Dear Mr. Catanach:

Sun Exploration and Production Company requests administrative approval for an exception to Rule 303-A to permit the downhole commingling of production in the subject well from the Paddock, South Brunson Drinkard-Abo, South Eunice San Andres and Wantz Granite Wash pools in Lea County, New Mexico.

Sun intends to perforate and test the San Andres interval 4155-4318 in the subject well. This geologically equivalent interval is currently being produced in the offsetting Sun-Elliott B-12 No. 1. This interval is anticipated to initially produce at ± 30 BOPD and 80 MCFPD.

Currently, the subject well is equipped as a dual producer with the upper tubing pumping the Paddock and the lower tubing pumping the Drinkard and Granite Wash (see attached well bore skematic). The Paddock completion was TA'd in February, 1984, due to lack of production. The Drinkard and Granite Wash were downhole commingled in August, 1979, per administrative order No. DHC-272 dated 02-09-79.

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The Paddock and San Andres have previously been approved for downhole commingling per administrative order No. DHC-634 dated 01-26-87 on the Elliott B-12 No. 1. No compatability problems have occurred as a result of this downhole commingling.

Production from the combined Drinkard and Granite Wash is currently testing ± 1 BOPD and 18 MCFPD. This is now uneconomic to produce separately. Although the Drinkard/Granite Wash receive a sweet crude pricing and the Paddock and San Andres receive a sour crude pricing, the alternative to downhole commingling is simply abandoning the Drinkard and Granite Wash completion. It is therefore requested that Sun be allowed to downhole commingle all four zones together.

All zones will require artificial lift and the well will be pumped with the SN at $\pm 7100'$. This will eliminate any possibility of fluid thieving by the Granite Wash completion and maximize well production. Total combined production following addition of the San Andres and downhole commingling with other zones is estimated to be ± 45 BOPD, 1 BWPB, and 200 MCFD.

The well will first be pump tested in the San Andres for approximately 2-3 weeks to establish a beginning rate for allocation purposes. Following this testing period a RBP will be removed and the well equipped to produce all four proposed zones.

Finally, all ownership (W.I., royalty and ORRI) in the wellbore is the same. Furthermore, commingling will not jeopardize any current or future secondary recovery operations. Additional information as requested in Section 2 follows below.

Sincerely,



Bruce Goodwin
Production Engineer
(915) 688-0419

pk

Attachment

Walter Lynch No. 2
Exception to Rule 303-A
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- c) Plat of area attached (attachment No. 1).
- d) Form C-116 for the Drinkard/Granite Wash completion attached (attachment No. 2).
Form C-116 for the Paddock completion attached; prior to TA in 2-84 (attachment No. 3).
- e) Production curve showing total production from subject well (both UT and LT completions) - attachment No. 4. See item (i) for additional discussion. Also attached is a complete well history for the subject well (attachment No. 5) and a well bore diagram showing the current and proposed wellbore configurations (attachments 6 and 7, respectively).
- f) Estimated BHP each zone:
 - 1. Granite Wash - 260 PSIA
 - 2. Drinkard - 250 PSIA
 - 3. Paddock - ?
 - 4. San Andres - 1200 PSIA
- g) Paddock and San Andres are currently commingled in the Sun-Elliott B-12 No. 1 and Drinkard/Granite Wash are currently commingled in the subject well. Commingling of the combinations should not produce any adverse effects.
- h) As previously stated in the body of this application, the Drinkard/Granite Wash will receive a sour price but is recommended as the alternative is completely abandoning these two reservoirs.
- i) It is recommended that an allocation percentage be devised following testing of the San Andres and subsequent DHC of all four reservoirs. At that time a production contribution for the Paddock can be inferred from the total well production following DHC. The San Andres volume will be known from testing and the Drinkard/Granite Wash will be known from production prior to the start of the workover.

Walter Lynch No. 2
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- j) All offset operators have been notified by a copy of this application. Companies notified are as follows:

Exxon Co., U.S.A.
P. O. Box 1600
Midland, TX 79702-1600
Attn: J. W. Achee - Production Manager

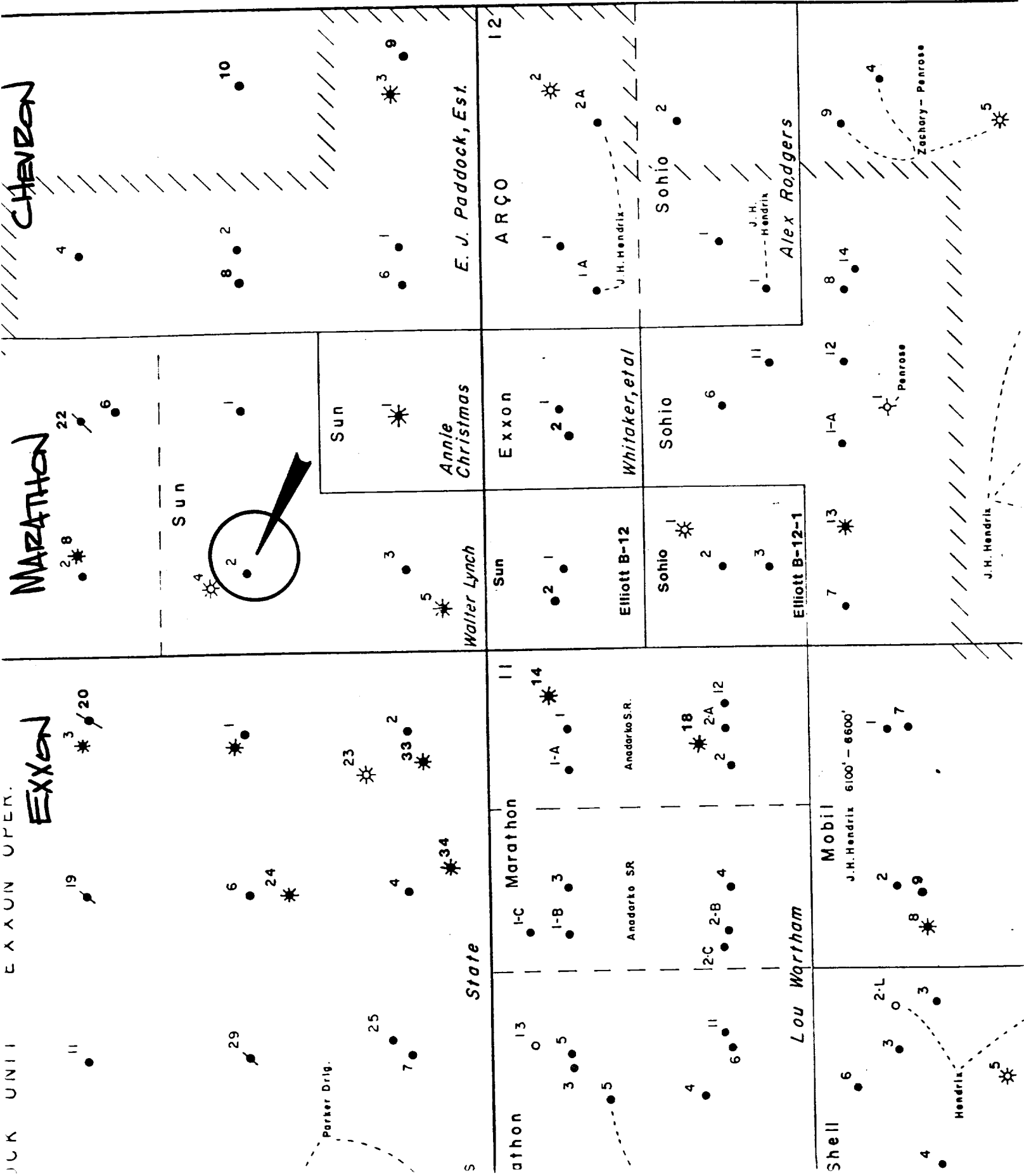
Chevron U.S.A., Inc.
P. O. Box 1150
Midland, TX 79702-1150
Attn: D. G. Simolke - Division Pet. Eng.

Marathon Oil Company
P. O. Box 552
Midland, TX 79702-552
Attn: J. F. Strong - Production Manager

NOTATION

EXX 7

T. 22 S.



Submit 2 copies to Appropriate District Office.
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240
DISTRICT II
P.O. Drawer DD, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-116
Revised 1/1/89

OIL CONSERVATION DIVISION

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

GAS - OIL RATIO TEST

Operator Sun Exploration & Production Co.		Pool Brunson Drinkard-Abo/Granite Wash		County Lea										
Address P. O. Box 1861 Midland, TX 79702-1861		TYPE OF TEST - (X)		Completion ☐ Scheduled ☐ Special ☒										
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST			GAS - OIL RATIO CU FT/BBL.	
		U	S	T						R	WATER BBL.	GRAV. OIL		OIL BBL.
Walter Lynch	2	L	1	22	37	2/15/89	P	-	24	1	39.2	1	18	18000
ALLOCATION FACTOR FOR DRINKARD AND GRANITE WASH:						50/50 OIL & GAS								
Brunson Drinkard-Abo, South												.5	9	18000
Wantz Granite Wash												.5	9	18000

Instructions:

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.

(See Rule 301, Rule 1116 & appropriate pool rules.)

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

Bruce Goodwin
Signature

Bruce Goodwin, Production Engineer

Printed name and title

3/10/89 915/688-0419

Date Telephone No.

ATTACHMENT 2

Submit 2 copies to Appropriate
District Office.

DISTRICT I

P.O. Box 1980, Hobbs, NM 88240

DISTRICT II

P.O. Drawer DD, Artesia, NM 88210

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-116
Revised 1/1/89

OIL CONSERVATION DIVISION

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

GAS - OIL RATIO TEST

Operator Sun Exploration & Production Co.		Pool Paddock		County Lea											
Address P. O. Box 1861 Midland, TX 79702-1861		TYPE OF TEST - (X)		Completion ☐ Special ☒											
LEASE NAME	WELL NO.	LOCATION			DATE OF TEST	CHOKE SIZE	TBG. PRESS.	DAILY ALLOW-ABLE	LENGTH OF TEST HOURS	PROD. DURING TEST			GAS - OIL RATIO CU FT/BBL.		
		U	S	T						R	WATER BBL.	GRAV. OIL		OIL BBL.	GAS MCF.
Walter Lynch	2	L	1	22	37	12/12/83	P	-	25	24	0	37°	12	32	2667
NOTE: LAST TEST OF PADDOCK COMPLETION PRIOR TO TA (2/84)															

Instructions:

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.

(See Rule 301, Rule 1116 & appropriate pool rules.)

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


Signature

Bruce Goodwin, Production Engineer
Printed name and title

3/10/89

Date

915/688-0419

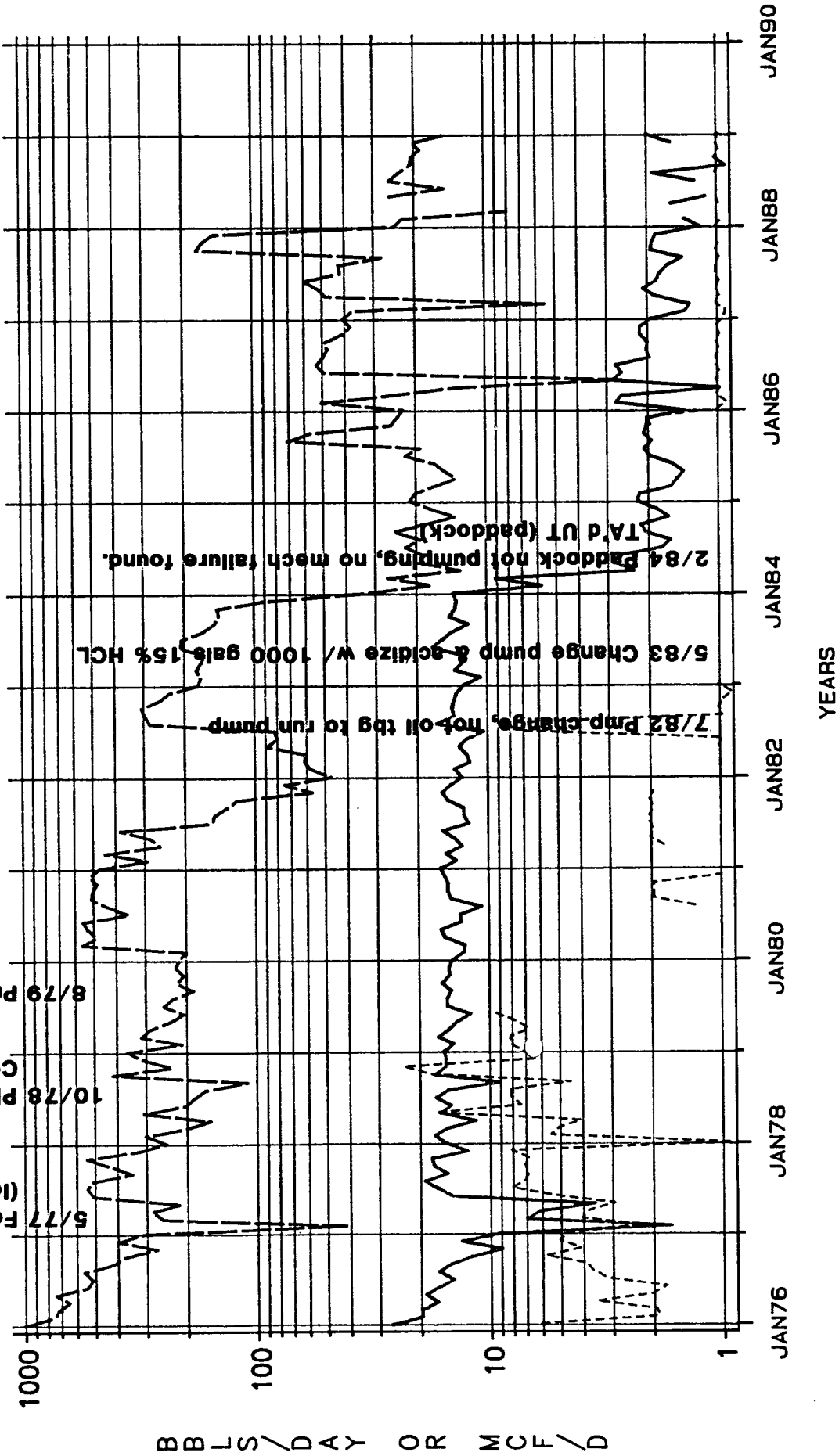
Telephone No.

ATTACHMENT 3

WALTER LYNCH NO. 2

SUN EXPLORATION AND PRODUCTION CO.

5/77 Found hole in tbgs (long string)
10/78 Pkr leak on LT
Change packer
8/79 Pump Drinkard/G.W.



ATTACHMENT 5

WALTER LYNCH NO. 2

WELL HISTORY

LOCATION: 660' FWL & 1980' FSL, SEC 1, T-22-S, R-37-E, UNIT "L", PADDOCK, SOUTH BRUNSON DRINKARD-ABO & GRANITE WASH FIELD, LEA COUNTY, NEW MEXICO

ELEVATION: KB - 3364 GL - 3354

DEPTHS: TD - 7150 TOL - 4896 PBTD - 7110

SPUD DATE: 08-30-45 COMPLETED: 10-13-45

CSG DATA: SURFACE - 13-3/8", 40#, SPIRAL WELD CSG. CS $\pm$ 338'. CMT'D W/350 SKS. ESTIMATE CMT CIRC TO SURFACE.

INTERMEDIATE - 9-5/8", 36#, ELECTRIC WELD CSG. CS $\pm$ 2865'. CMT'D W/2100 SKS. ESTIMATE CMT CIRC TO SURFACE.

PRODUCTION - 7", 23#, STD SMLS CSG. CS $\pm$ 5220. CMT'D W/350 SKS. NO TOC RECORDED.

LINER - 5", 15#, K-55, ABFL - 4S CSG. TOL $\pm$ 4896. LS $\pm$ 7150. CMT'D W/200 SKS. REVERSED OUT 60 SKS.

LOGS AVAILABLE:

1. SCHLUMBERGER SP/ELECTRIC LOG DATED 10-07-45 FROM 5215-2859.
2. LANE WELLS GR/NEUTRON/CCL DATED 10-26-64 FROM 5175-3000.
3. SCHLUMBERGER GR/CN-FDL DATED 07-08-74 FROM 7148-4800.
4. SCHLUMBERGER GR/DLL DATED 07-08-74 FROM 7134-5212.

WELL HISTORY:

10-13-45 WELL ORIGINALLY DRILLED AS A PADDOCK PRODUCER W/7" CSG SET AT 5220'. PERF PADDOCK 5100-5160, 4 SPF, TOTAL 238 HOLES. ACIDIZED W/500 GALS MUD ACID & 2000 GAL 15% HCL. I.P. 24 HRS F 789 BO, 603 MCF, 764-1 GOR.

04-04-59 WORKOVER NO. 1 TO ACIDIZE PADDOCK. PULL RODS & PUMP. ACIDIZED PADDOCK 5100-5160 W/10000 GALS 15% XLST ACID + 240 RCN BS DN 2" TBG. MP 4000, MP 3900, AVG P 4000, AIR 7.5 BPM. 5 MIN SIP 0 PSI. BEFORE: 6 BO, 0 BW, 50 MCF. AFTER: 42 BO, 12 BLW, 107 MCF.

10-09-64 24 HRS P 10 BO, 0 BW.

10-27-64 WORKOVER NO. 2 TO ADD ADD'L PADDOCK PERFS AND FRAC. POH W/RODS & PMP. RAN GR/NEUTRON LOG. PERF 5060-62, 73-75, 80-82, 92-96, 2 JSPF, 26 HOLES. FRAC PADDOCK PERFS 5060-5160 W/20,000 GAL REF. OIL & 22,000 LBS 20-40 SAND DN 3-1/2" TBG. AIR 17 BPM. MP 6000, MP 5100, ISIP 2000, 10 MIN 1700. CO SAND AND POP.

11-03-64 24 HRS P 81 BO, 12 BW, NO GAS TEST, 1-1/4X54X10.

06-22-74 WORKOVER NO. 3 TO DEEPEN WELLBORE TO 7150' AND TEST THE DRINKARD AND GRANITE WASH. POH W/RODS, PUMP & TBG. DO 6-1/4 HOLE FROM 5220 TO 7150 TD. SCHLUM RAN GR/CN-FDL & GR/DLL. RAN 5" FLUSH JT LINER, TOL ± 4896 , LS ± 7150 . CMT'D W/200 SKS, REV OUT 60 SKS.

07-28-74 BEGAN COMPLETION OF GRANITE WASH. DO CMT TO 7112 PBTB W/4-1/4 BIT & SCRAPER. RAN PKR ON 2-3/8" TBG. PERF GRANITE WASH 7094, 96, 98, 7100, & 7102, TOTAL 5 HOLES W/1-9/16" OD STRIP GUN. BROKE DOWN PERFS W/3000 GALS LSE OIL. ISIP 2150, 5 MIN 1500, 10 MIN 1000, AIR 4-1/4 BPM. FLOW & SWAB BACK LOAD OIL. WILL FLOW @ ± 300 MCF RATE, SI TP ± 2000 PSI, FTP ± 200 PSI. SET PLUG IN PKR & RLSE OSTSD.

08-03-74 PERF DRINKARD W/3-1/8" GUN @ 6770, 87, 88, 90, 92, 6801, 16, 20, 24, 25 & 26, 1 JSPF, 11 HOLES. ACIDIZED DRINKARD 6770-6826 W/1500 GALS 15% NEFEHCL + 16 RCN BS. BDP 3000, MP 3950, AP 3400, FP 3300, AIR 4.2 BPM. ISIP 1900, 5 MIN 800, 10 MIN 800. SWAB & FLOW 1-1/2 HRS, REC 55 BLW, FL 0-4500'. SDFN. 11 HR SITP 2000 PSI. 8 HRS F 1200 MCF, 2 BW, TP 2000-340. SDFN & SUNDAY. 40 HR SITP 2000 PSI. KILLED WELL. SET RBP ABOVE PERFS 6770-6826. PERF DRINKARD 6576, 77, 91, 92, 6608, 09, 10 & 6681, 1 JSPF, 8 HOLES USING 3-1/8" OD CSG GUN. ACIDIZED W/1500 GALS 15% NEFEHCL + 13 RCN BS. BDP 2700, MP 2900, AP 2800, FP 2900, AIR 4 BPM. ISIP 1500. 10 MIN 700 PSI. FLOW & SWAB L&AW. SDFN. 13 HR SITP 2000 PSI. 4-1/2 HRS F 785 MCF, TP 180 PSI. SDFN. 18 HR SITP 1900 PSI. KILLED WELL, RAN PROD PKR W/PLUG IN PLACE.

08-09-74 PERF PADDOCK 5018, 25, 26, 29, 31 & 46, 1 JSPF, 6 HOLES. ACIDIZED 5018-5046 W/1500 GALS 15% NEFEHCL + 9 RCN BS. BDP 2700, MP 4200, AP 3700, FP 3500, AIR 5.1 BPM, ISIP 1000, 5 MIN VAC. 4 HRS SWAB 108 BLAW, 4.5 BO, FL 1000-4200. SDFN. 6 HRS SWAB 20 BO, 19 BW, FL SURF-4000.

08-11-74 RAN DUAL TBG STRINGS TO PRODUCE DRINKARD & PADDOCK SEPARATELY. PUT PADDOCK ON PUMP.

09-10-74 PADDOCK (UT) 24 HRS P 19 BO, 11 BW, 223 MCF.
DRINKARD (LT) 24 HRS F 14 BO, 3 BW, 1035 MCF.

01-30-78 72 HR SIBHP 652 PSI @ 6701, SITP 460 PSI.

06-07-79 WORKOVER NO. 4 TO DHC GRANITE WASH (TA'D) & DRINKARD (LT). PULLED 'N' PLUG FROM NIPPLE IN PKR @ 6939. PUT LT ON PUMP. PROD SAME BEFORE & AFTER @ ± 3 BO, 0 BW, 226 MCF (290 MCF BEFORE).

05-17-83 ACIDIZED PADDOCK DN TBG W/1000 GALS 15% NEFEHCL, FLUSHED W/30 BBLs 2% KCL WTR. BEFORE: 9 BO, 0 BW. AFTER: 15 BO, 0 BW.

02-28-84 PADDOCK (UT) TA'D FOLLOWING 2 SUCCESSIVE WELL SERVICINGS W/O A MECHANICAL PROBLEM FOUND. BEFORE: 15 BO, 1 BW, 150 MCF. AFTER: 2 BO, 1 BW, 20 MCF.

ATTACHMENT 6

WELL COMPLETION SKETCHES SUN-5036-4-A

WELL	FIELD	DATE
Walter Lynch No.2	S. Brunson Field	March 7, 1989

☒ PRESENT COMPLETION ☐ SUGGESTED COMPLETION

PERMANENT WELL BORE DATA

13 3/8", 40#, SPIRAL
WELD SURFACE CSG.
CS ± 338'. CMT'D W/
350 SKS. CIRC TO SURF

9 7/8", 36#, ELECTRIC
WELD INTERMEDIATE CSG.
CS ± 2865'. CMT'D W/
2100 SKS. CIRC TO SURF.

7", 23#, J-55, LTIC
PRODUCTION CSG. CS ±
5220'. CMT'D W/ 350
SKS. NO TOC RECORDED.

5", 15.5#, K-55,
ABFL-43 LINER. TOL
± 4896', LS ± 7150'.
CMT'D W/ 200 SKS.
REVERSED OUT 60 SKS.

TD ± LS: 7150

DATA ON THIS COMPLETION

KB: 336A
GL: 335A

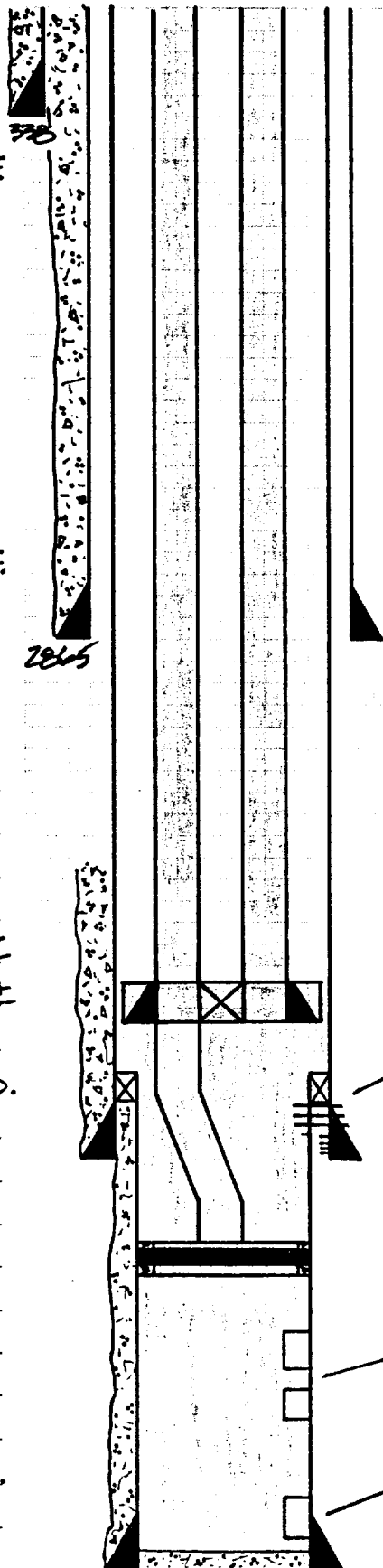
DUAL COMPLETION
PADDOCK ≠
DRINKARD - GRANITE WASH

PADDOCK TA'D 2/84.
DRINK/G.W. - DHC

PADDOCK: CURRENT SCIB-
SC46, 1 SPF, 6 HOLES.
ORIGINAL (BEHIND LINER)
SC40-62, 73-75, 80-82, 92-94,
2 SPF, 5100-60, 4 SPF, 238H

DRINKARD 6576-6681,
6710-6826, 1 SPF, SELECTIVE,
TOTAL 19 HOLES.

GRANITE WASH 7094-7102
1 JSPF, SELECTIVE, 5 HOLES.
PSTD: 7110



ATTACHMENT 7

WELL COMPLETION SKETCHES SUN-5036-4-A

WELL	FIELD	DATE
Walter Lynch No.2	S.Brunson Field	March 7, 1989

☐ PRESENT COMPLETION ☒ SUGGESTED COMPLETION

PERMANENT WELL BORE DATA

DATA ON THIS COMPLETION

13 3/8", 40#, SPIRAL
WELD SURFACE CSG.
CS ± 338'. CMT'D W/
350 SKS. CIRC TO SURF.

KB: 336A
GL: 335A

9 7/8", 36#, ELECTRIC
WELD INTERMEDIATE CSG.
CS ± 2865'. CMT'D W/
2100 SKS. CIRC TO SURF.

DHC SAN ANDRES,
PADDOCK, DRINKARD
& GRANITE WASH.

7", 23#, J-55, LTIC
PRODUCTION CSG. CS ±
5220'. CMT'D W/ 350
SKS. NO TOC RECORDED.

SAN ANDRES 4155-4166, 4178-
88, 4225-45, 4286-4318
1 JSF 2F, TOTAL 37 HOLES

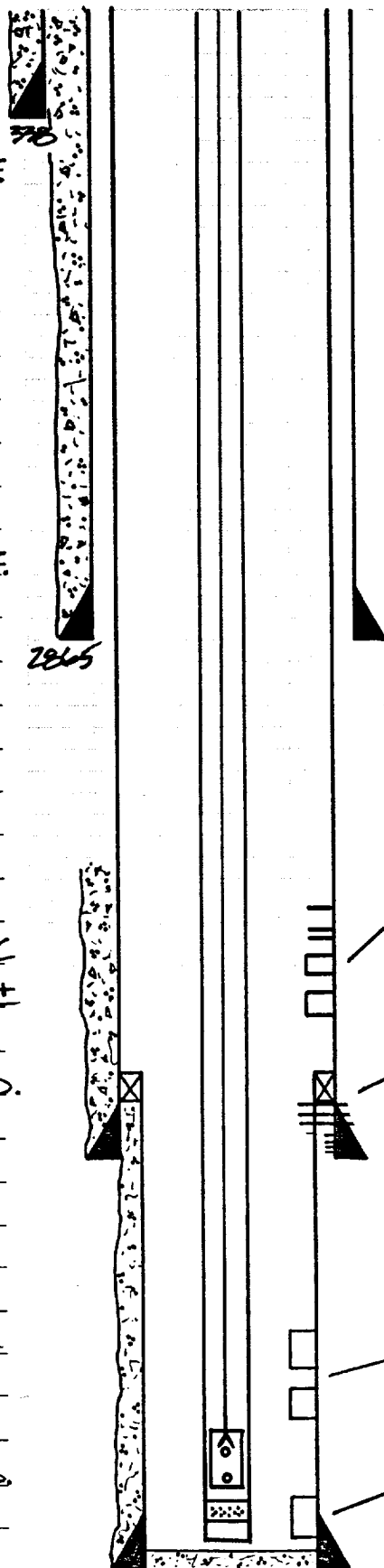
PADDOCK: CURRENT 5018-
5046, 1 SPF, 6 HOLES.
ORIGINAL (BEHIND LINER)
5060-62, 73-75, 80-82, 92-94
2 SPF, 5100-60, 4 SPF, 238H

5", 15.5#, K-55,
ABFL-4S LINER. TOL
± 4896', LS ± 7150'.
CMT'D W/ 200 SKS.
REVERSED OUT 60 SKS.

DRINKARD 6576-6681,
6710-6826, 1 SPF, SELECTIVE,
TOTAL 19 HOLES.

TD ± LS: 7150

GRANITE WASH 7094-7102
1 JSF, SELECTIVE, 5 HOLES.
FBSD: 7110



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