

WELLS WITHIN 1/2 MILE RADIUS OF HORIZONTAL INJECTORS

Wells penetrating the Abo*

WELL #	to 136	to 213	to 156	TD
NVAU 96		x		12,390
NVAU 112			x	10,230
NVAU 116			x	10,436
NVAU 117		x	x	10,414
NVAU 118	x	x		8,700
NVAU 128			x	8,580
NVAU 129			x	8,600
NVAU 136H	x	x		8,700 ¹ / 9,376 ²
NVAU 137	x	x	x	8,700
NVAU 138	x			8,700
NVAU 143	x			8,745
NVAU 151			x	12,180
NVAU 156H	x	x	x	8,750 ¹ / 9,413 ²
NVAU 157	x			12,500
NVAU 210	x	x		8,800
NVAU 213H	x	x	x	8,800 ¹ / 9,423 ²
NVAU 220	x			8,800
NVAU 234			x	8,700
NVAU 237		x	x	8,700
NVAU 238			x	8,700
NVAU 242	x	x		8,700
NVAU 243	x	x		8,700
NVAU 244H	x	x	x	8,700 ¹ / 9,188 ²
NVAU 245	x	x	x	8,711
NVAU 248			x	8,700
NVAU 249	x	x		8,720
NVAU 277	x			8,800
NVAU 278H	x	x		8,800 ¹ / 9,769 ²
NVAU 280			x	8,800

* All wells in this category are now completed in the Abo
Those wells with TDs deeper than the Abo have been plugged back

¹ Indicates the measured depth of the original vertical portion of the well

² Indicates the measured depth of the horizontal lateral portion of the well. Please see the attached directional data for more complete information on the horizontal portion of the well.

Wells NOT penetrating the Abo

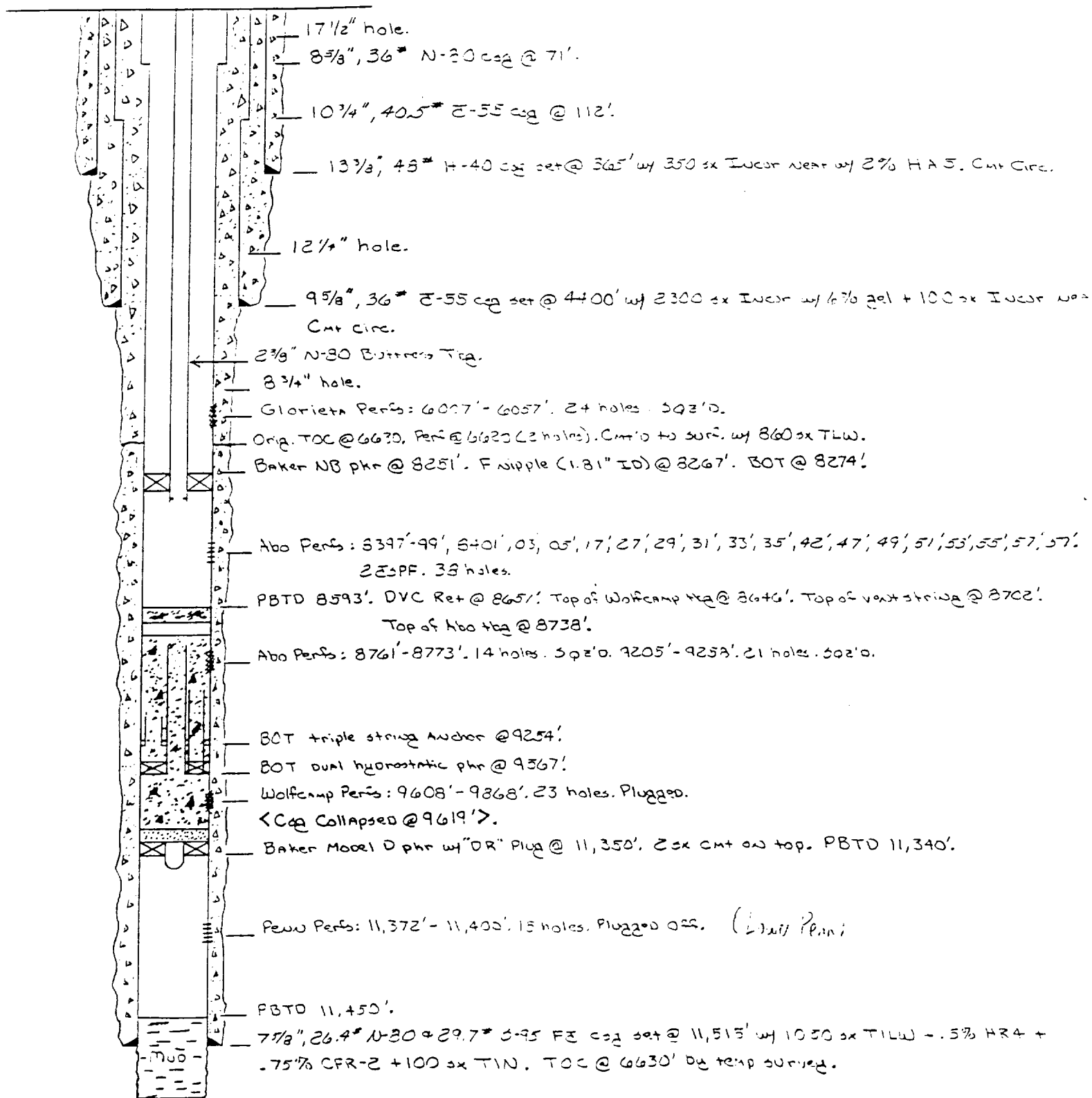
WELL #	to 136	to 213	to 156	TD	Deepest Formation
BS 3	x	x	x	4,608	San Andres
BS 4	x	x	x	6,977	Blinebry
BS 5	x	x		4,750	San Andres
BS 7			x	4,700	San Andres
BS 8	x	x	x	4,740	San Andres
BS 9			x	4,682	San Andres
BS 10			x	4,706	San Andres
BS 20			x	4,690	San Andres
BS 23			x	4,700	San Andres
BS 27		x		7,000	San Andres
BS 28	x	x		4,740	San Andres
BS 30	x	x		6,800	Blinebry
BS 36			x	6,900	Blinebry
BS 38		x	x	6,795	Blinebry
BS 39	x			4,744	San Andres
BS 41		x	x	4,720	San Andres
BS 43			x	4,704	San Andres
BS 49	x			4,644	San Andres
BS 52	x			4,900	San Andres
BS 53			x	4,655	San Andres
BS 55			x	4,666	San Andres
BS 58			x	6,800	Blinebry
BS 105		x	x	6,150	Glorieta
BS 113			x	6,225	Glorieta
BS 127			x	4,850	San Andres
BS 132w	x	x		4,812	San Andres
BS 168	x	x		4,800	San Andres
BS 189			x	4,750	San Andres
BS 190			x	4,750	San Andres
BS 191			x	4,800	San Andres
BS 192			x	4,761	San Andres
BS 193			x	4,800	San Andres
BS 196			x	4,800	San Andres
BS 197			x	4,800	San Andres
BS 199			x	4,800	San Andres
BS 500	x	x	x	4,800	San Andres
BS 511	x	x	x	5,650	San Andres
J 1	x	x		4,750	San Andres
VA 1	x	x	x	4,700	San Andres
VA 2	x	x		4,700	San Andres
VA 3	x	x	x	4,700	San Andres
VA 6w	x	x		4,700	San Andres

Well:	NVAU #96
Location:	SECT 26 - T17s-R34e
Date Drilled:	12/3/62
TD:	12,390'
PBTD:	8,593"

Current status:	Abo WIW
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Completion history:	See attached
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Well construction:	See attached
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DATE 3-30-88WELL NO. 96LEASE AlbuquerqueFIELD V-1LOCATION H-26-175-34ESIGNED J G ElwoodG.L. 4013'D.F. 4030'K.B. 4031'ZERO 12' 390'1980' FNL AND 510' FEL
Lea County, New Mexico

TD 12,390'

2

- 4/21/71 Contact to WPM
Run flow curve using 4711 and 4712. Results: 4711
3145, 4712 3145. 4712 4712. 4712 4712. 4712 4712.
and a number of 4712. 4712 4712. 4712 4712.
Model NR per sec: 4712. 4712 4712. 4712 4712.
271 lbs C-125 4712. 4712 4712. 4712 4712.
4712-4712 4712. 4712 4712. 4712 4712.
4712. 4712 4712. 4712 4712. 4712 4712.
- 5/14/71 Repair communication with 4712. 4712 4712. 4712
4712 4712. 4712 4712. 4712 4712. 4712 4712.
2-3/2" 4712 4712 and 4712-4712. 4712 4712.
C-125-4712, 4712 4712. 4712 4712. 4712 4712.
lead away @ 4712; inj. 4712 4712. TP 950
- 5/30/71 Profile log revealed scaled-up or slightly cork-
screwed tbg; rec to pick-up tbg and acidize; if
lose any line weight when running tools, pull out.

ILLEGIBLE

Well:	NVAU #112
Location:	SECT. 25 – T17s-R34e
Date Drilled:	3/31/66
TD:	10,230'
PBTD:	9,710'

Current status:	Abo WIW
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Completion history:	See attached
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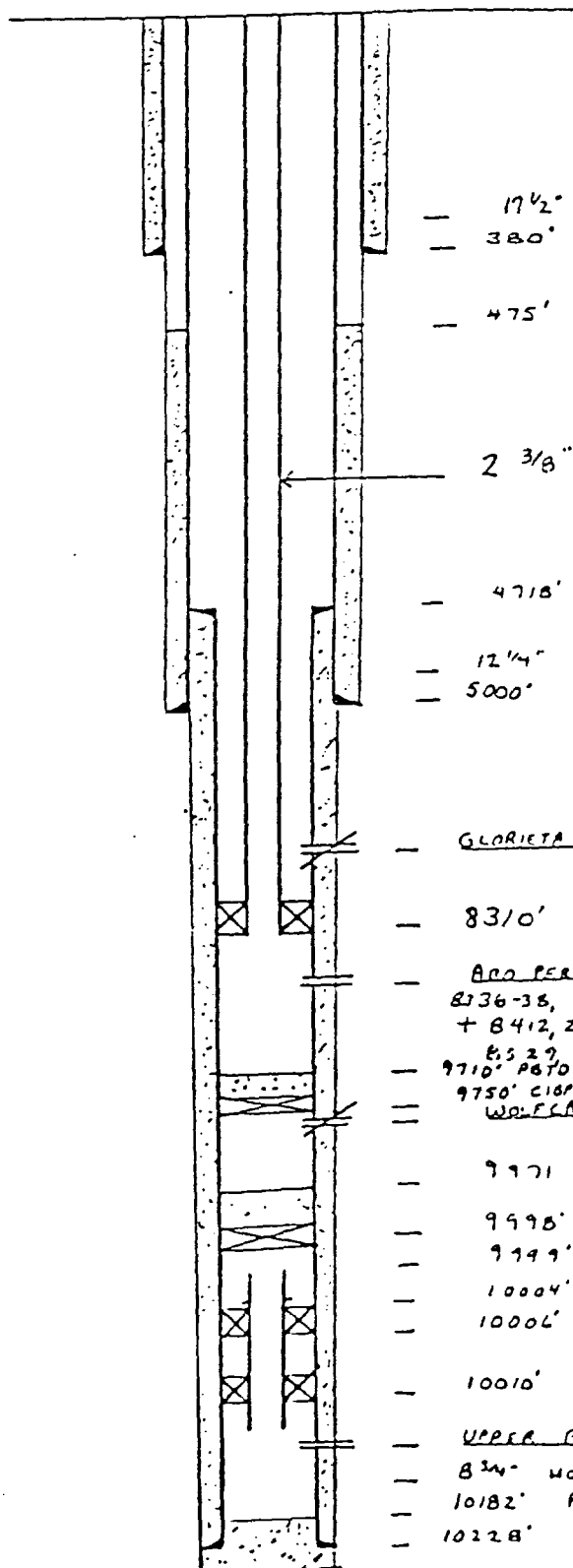
Well Construction:	See attached
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DATE 3-30-88 WELL NO. 112 LEASE NVAU FIELD VACUUM

LOCATION D 25 - T 175 - R 34 E
LEA CO, N.M.

SIGNED D. G. Elwood

G.L. 4011
D.F. 4021
K.B. 4022
ZERO 11 AGU



- 17 1/2" HOLE
- 380' 13 1/2" 48" CSG SET W/ 350 S. CMT LIN
- 475' TOP OF CEMENT (T.S.)
- 2 3/8" TBG
- 4718' TOP OF LINER
- 12 1/4" HOLE
- 5000' 9 5/8" 36" 40" CSG SET W/ 2600 S. CMT
(J-SS, H-50)
- 6007-38 D.A. (13 HOLES) SQZD W/ 200 S.
- 6011-36' D.A. (11 HOLES) SQZD W/ 100 S.
- GLORIETA PERFS
- 8310' PERM PKR
- ARO PERFS W/ 17SPF 8392, 93, 94, 97, 8400, 01, 10, 11, 15-17, 21, 22, 27, 29-31
- 8336-38, 40, 42, 44, 46-48, 50, 52
- + 8412, 25, 28, 34, 41, 45, 49, 61, 60, 86, 94, 97, 8514, 15, 16, 23, 24, 25,
- 8529, 30, 31, 33 W/ 17SPF (22 HOLES)
- 9710' PBD
- 9750' CIBP CAPED W/ 40" CMT
- WO-FLAME PERFS 9523-9991 D.A. (21 HOLES) SQZD W/ 200 S.
- 9971 PBD
- 9998' CIBP
- 9999' TOP OF FISH 23" TBG
- 10004' SN
- 10006' GUID TYPE A PKR
- 10010' GUID TYPE A PKR
- UPPER PENN PERFS 10043-10121 D.A.
- 8 3/4" HOLE
- 10182' PBD
- 10228' 7" 23" S-75 LINER SET W/ 1000 S. CMT LIN

LEASE North Vacuum Abo Unit WELL NO. 112

INITIAL COMPLETION DATE: 5-25-66 TD 10230 PBDT 10182'

CURRENT COMPLETION DATE: 6-13-66 CURRENT PBDT 9971'

CURRENT PRODUCING INTERVAL(S): 8411'-8447' 8392'-8452'

CURRENT TESTS:

DATE	6-1-85	5-4-85	4-12-85
METHOD(F,P,GL)	P	P	P
BOPD/BWPD	63 / 57	75 / 73	73 / 63
MCF/D(FORM.)	46	54	53

OFFSET WELL TESTS IN ZONE OF INTEREST

COMPANY	MPTM	MPTM	MPTM
LEASE & WELL NO.	NVAU# 239	NVAU# 237	NVAU# 236
DATE	6-7-85	6-13-85	6-12-85
METHOD(F,P,GL)	P	P	P
BOPD/BWPD	41 / 6	66 / 57	29 / 72
MCF/D	30	52	27

WELL HISTORY

REMARKS: (INCLUDE DATA PERTINENT TO W/O, SQZD. PFS, ETC.)

3-31-66 Spud 17 1/2" hole TD'd @ 10230' 5-23-66
 Perf Wolfcamp 9823'-9991' OA 1JSF 29holes Sqzd w/ 200sx cmt.
 6-13-66 Perf Abo @ 8411' 22' 30' 32' 37' 42' 47' w/ 1JSF 7holes Acidize w/1000
 gals 15% NEA, BDTP 3900, TTP 4000, AIR 0.3, ISIP 3800, 5min 2200
 6-14-66 Acidize w/2500 gal 15% NEA + 6RCNBS, TTP 4600, AIR 3, ISIP 4600,
 5min 2800
 6-16-66 Treat w/7500 gal gelled 15% acid + 3500* 2 3/4" OHcw. sand, BDTP 6900,
 TTP 7200, AIR 8.3, ISIP 3950, 10min 2600
 6-17-66 NMOC Pot: F 78BNO/6hrs on 2 3/4" CK, GOR 711:1, Gv 39.0° API @ 60°F TP 250
 6-18-66 Perf Glorieta 6011'-6038' w/ 1JSF 13holes OA. sqzd w/ 200sx cmt.
 Reperf Glorieta 6011'-6036' OA. 1JSF 11holes. Acidize w/1000gals acid.
 8-66 Perf U. Penn 10043'-10121' OA 1JSF NMOC Pot: F 78BNO/6hrs
 7-8-66 Glorieta NMOC Pot: P 95BNO + 0BWO/24hrs
 3-23-76 Cut U. Penn tbg @ 9999'. Set CIBP @ 9998' capped w/ 5sx cmt. PBDT 9
 3-25-76 Perf Abo @ 8392'-93' 96'-97' 8400'-01' 10' 15' 17' 21' 22' 27' 29' 31'
 36' 38' 40' 42' 44' 46' 48' 50' 52' w/ 1JSF 25holes - Continued -

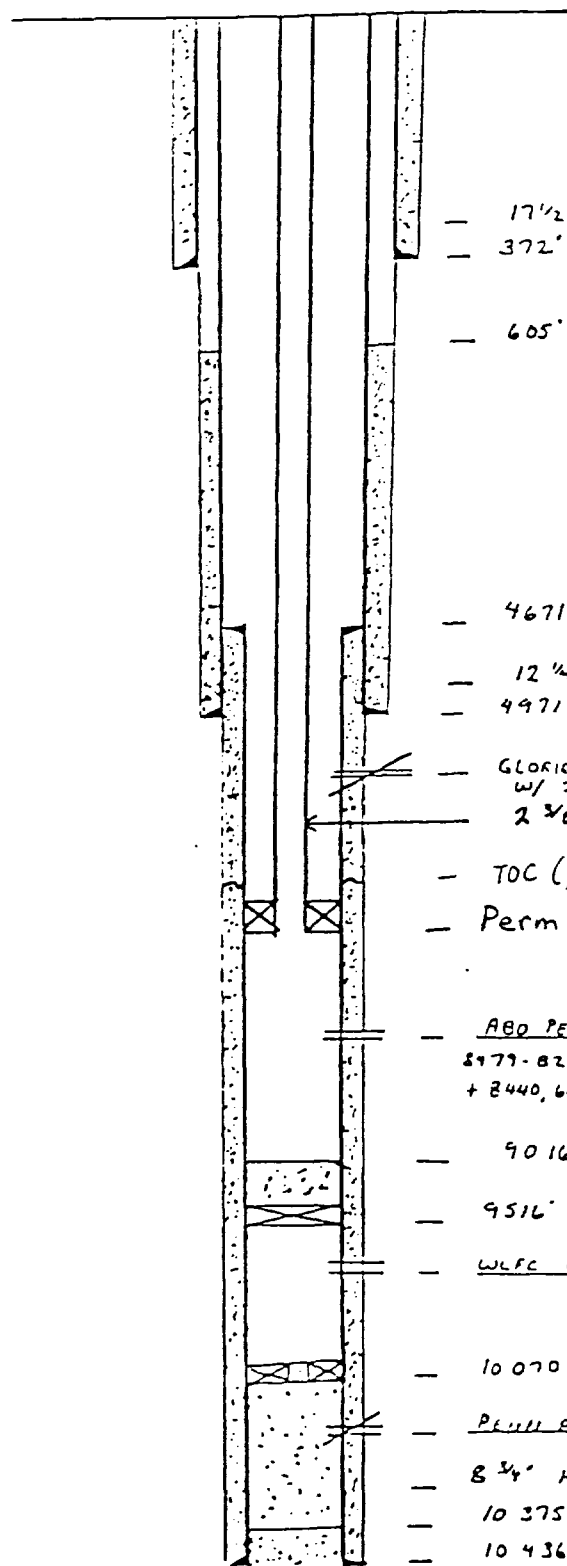
EASE NVAU WELL NO. 112 FIELD Vacuum Abo North

3-24-76 | Acidize Abo w/10,000 gals NEA + 5[#] FR/mgals + 40 ACNBS. TTP:
AIR 3.5, ISIP 3300, 10min 1600, 20min zero. Before w/o 15980-
After w/o: P 15080 + 8.8LWPD

9-2-82 | Acidize Abo w/3000 gals 15% NaFe HCl. TTP 1500-3600. Had
tbg leak w/1200 gals acid in form

9-7-82 | Sg = Glorietta perfs 6011-36 w/100 sx cmt Glorietta PSA 9-7-

Well:	NVAU #116
Location:	SECT. 24 - T17s-R34e
Date Drilled:	8/7/66
TD:	10,436'
PBTD:	9,016"
Current status:	Abo WIW
Completion history:	See attached
Well Construction:	See attached

DATE 3-30-88WELL NO. 116LEASE NVAUFIELD VACUUMLOCATION 24 - TNS - R 34E
LEA CO., N.M.SIGNED D. G. ElwoodG.L. 4018D.F. 4024K.B. 4030ZERO 12 442

10436' TD

— 17 1/2" HOLE
— 372' 13 3/8" 45° S-40 CSG SET W/ 350 Sx CMT CIRC

— 605' TOP OF CEMENT (T.S.)

— 4671' TOP OF LINER SQUEEZED W/ 600 SXS

— 12 1/4" HOLE
— 4971' 9 5/8" 40° + 36° J55 CSG SET W/ 2300 Sx CMT

— GLORIA PERFS 6060, 62, 65, 67, 79, 81, 83, 85, 87, 91, 93, 95, 97, 1001, 03, 08, 10 S22
W/ 200 Sx CMT. REV OUT 95 Sx. GLOR REPERFED. RE S220 W/ 85 Sx CMT
2 3/8" TBG

— TOC (primary cmt) @ 8185'

— Perm PKr @ 8350'

— ABQ PERFS W/ 1 JSPF 8438, 91, 45, 46, 48-51, 63, 67, 69, 71, 72, 74-76,
8179-82, 84, 85, 87, 88, 91, 92, 95-97 (17 HOLES)
+ 8440, 60, 64, 67, 77, 98, 99, 8504, 05, 21, 22, 23, 24, 25, 28, 46, 50, 51, 70, 71, 73, 85, 86
W/ 2 JSPF (46 HOLES)

— 9016' PBTD

— 9516' CIBP CAPPED W/ 35 Sx CMT

— WLF PERFS 9605, 09, 11, 17, 31, 35, 43, 47, 50, 53, 57, 9945, 49,
10024, 26, 30, 45, 52, 54

— 10070 BAKER MODEL D PKR

— PERM PERFS 10087, 89, 91, 93, 99, 10101, 103, 106, 109, 113, 120, 123, 127, 137, 135,
10139, 141 S220 BELOW BAKER PKR W/ 100 Sx CMT.

— 8 3/4" HOLE

— 10375' PBTD

— 10436' 7" 23° SAS LINER SET W/ 965 Sx CMT CIRC

ILLEGIBLE

WELL HISTORY North Vacuum Abo Unit #116

- 8-18-85 Well completed. Perf Upper Penn 10057-10141 .
1 SPF, 17 holes.
NMOCOD Pot Upper Penn: F 64/0 6 hrs
Perf Abo 8441. 45, 48, 51, 72, 75, 80, 85, 88
1 SPF, 9 holes. Acidized Abo w/1000 gal 15%.
0.9 BPM, 3000 psi. Reacidized Abo w/3000 gal 15%
+ RCBS, 2.1 BPM, 3000 psi.
NMOCOD Pot Abo: F 72/16 6 hrs
Perf Glorieta 6060-6110', 1 SPF, 17 holes.
Squeezed w/105 sks. reperf same interval.
squeezed w/85 sks. Perf squeeze holes @ 6125',
6053', squeezed w/120 sks. Reperf Glorieta
6060-6110' w/17 holes, squeezed w/250 sks. Perf
Wolfcamp 9603-10054' 1 SPF, 19 holes.
NMOCOD Pot Wolfcamp: F 76/0 6 hrs
Squeezed Upper Penn w/75 sks, R&A'd zone.
- 7-75 Abandon Wolfcamp, set OISF @ 9516', cap w/75 sks
cmt. Perf Abo 8438, 45, 48, 50, 63, 67, 69, 71,
72, 74-76, 79-82, 84, 85, 87, 91, 92, 95, 96, 97
1 SPF, 24 holes. Acidized w/10000 gal 15% +
RCBS, 5.5 BPM, 3400 psi, little ball action.
Before: P 26/0 After: P 47/40
- 4-29-82 Installed hydraulic jet pump, acidized w/500 gal
15%.
Before: P 163/109 After: P 182/169
- 8-7-86 Conv to WIW. Perf Abo 2 SPF 8440, 60, 64, 65, 77,
99, 99; 8504, 05, 21-25, 28, 46, 50, 51, 70, 71,
73, 85, 86' 46 holes. Acidized w/6000 gal 15% +
300 gal mutual solvent, 4.4 BPM, 4500 psi, little
ball action.
Test: 300 BWPD @ 550 psi TP

DGE 5-31-90

Well:	NVAU #117
Location:	SECT. 23 - T17s-R34e
Date Drilled:	7/30/66
TD:	10,414'
PBTD:	9,495'

Current status:	Abo WIW
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Completion history:	See attached
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Well Construction:	See attached
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DATE 3-30-88 WELL NO. 117 LEASE No. Vacuum Abo Unit FIELD Vacuum Abo North

LOCATION D-23-173-34E

SIGNED D. G. Elwood

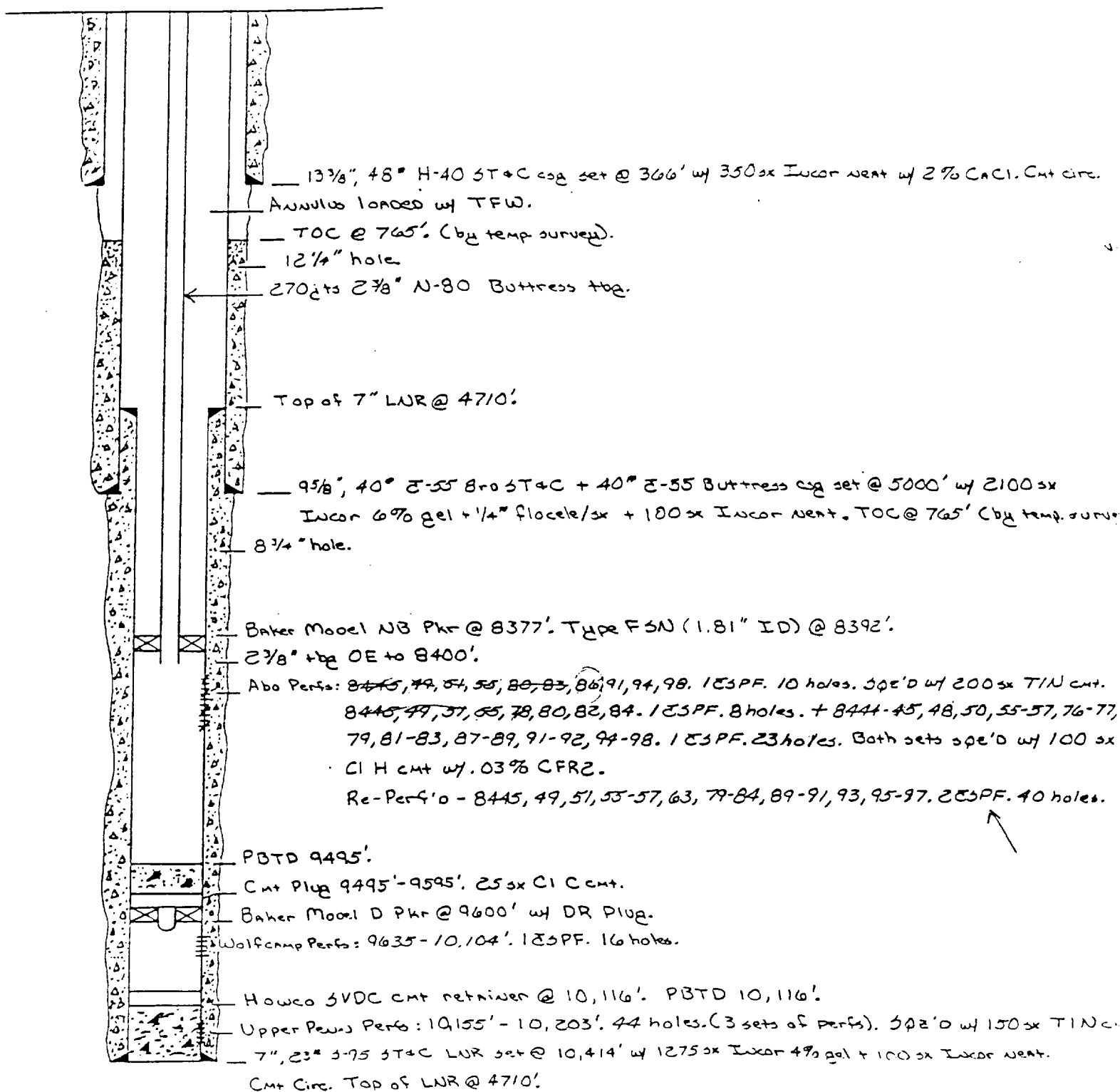
G.L. 4023'

D.F. 4035'

K.B. 4036'

ZERO 12' hgl

660' FSL and 460' FEL



TD 10,414'

7/24/73 Convert to WIM;
Spotted 25 #1's in 100' hole; 100' hole
gal 15% NEA @ 40' - 100' hole; 100' hole
50, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67,
68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100
treated perfs w/ 5000 gal 15% NEA @ 40' - 100' hole;
TTP 0, Air 3.0 BPM, ISIP 2500; ran 2-3/8 tbg to
3000 gal 15% NEA @ 40' - 100' hole; 100' hole
4500-5150, Air 3.5 BPM, ISIP 2500; ran 2-3/8 tbg to
6000 gal 15% NEA @ 40' - 100' hole; 100' hole
Model NE set @ 8377-80
Inj 600 BW/24 hrs

12/10/74 Eliminate channeling, also 600 perfs 8444-8445;
w/100x Class H set w/0.03% CFR2, perfs 8445
49, 51, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66,
67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100
new perfs w/ 5000 gal 15% NEA @ 40' - 100' hole;
4450, Air 3.5 BPM, ISIP 2500; ran 2-3/8 tbg to
8400, Baker Model D set @ 8377-80
Test: 600 BW/24 hrs

ILLEGIBLE

Well:	NVAU #118
Location:	SECT. 26 – T17s-R34e
Date Drilled:	6/16/ 70
TD:	8,700'
PBTD:	8,650'

Current status:	Abo WIW
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Completion history:	See attached
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Well Construction:	See attached
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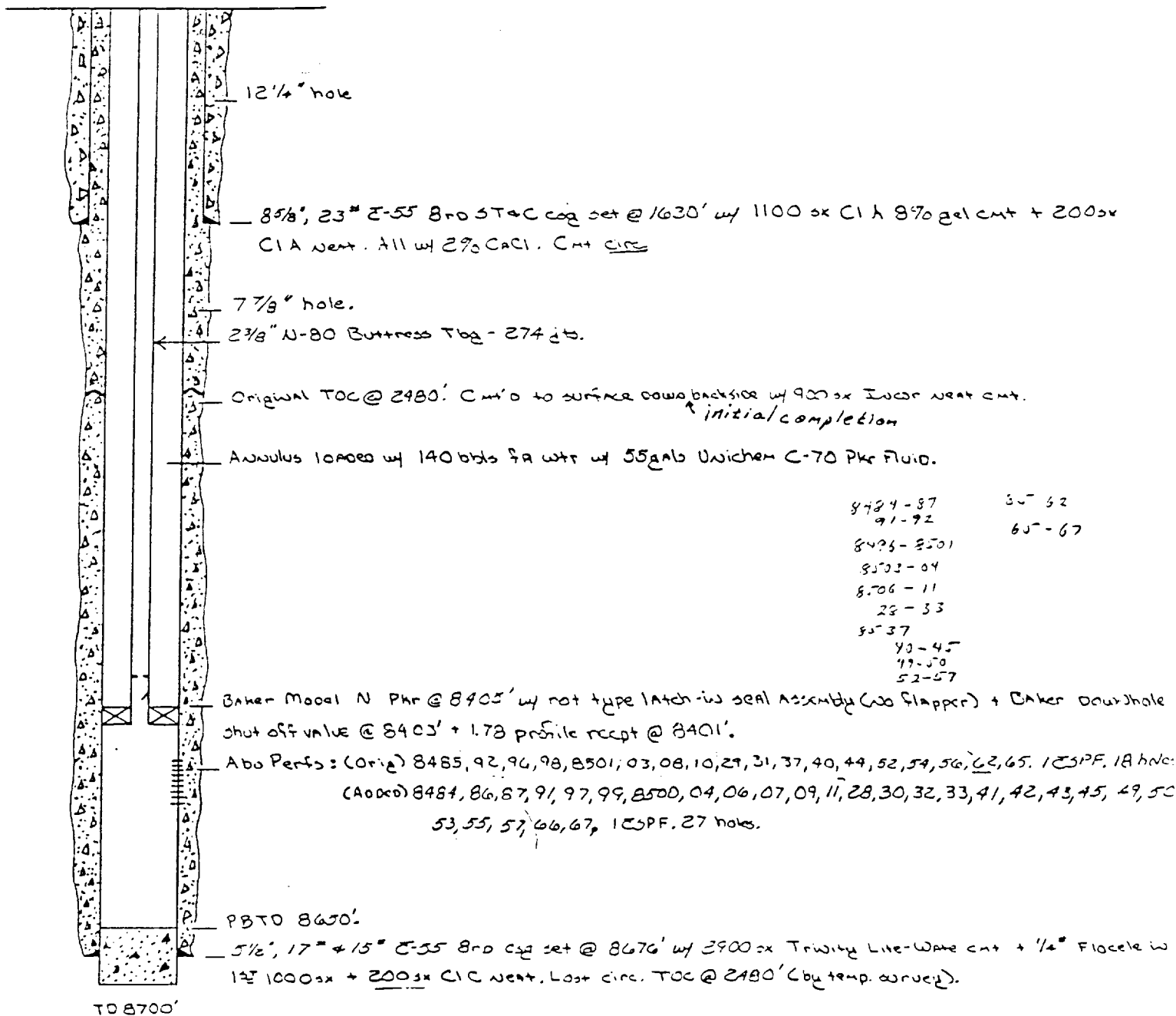
DATE 3-30-88 WELL NO. 118 LEASE No. Vacuum Abo North FIELD Vacuum Abo North

LOCATION E-26-175-34E
1980' FNL and 1980' FNL
Lea County, New Mexico

SIGNED D. G. Elwood

G.L. 4030'
D.F. 4044'
K.B. 4045'
ZERO 14' AGL

~~API~~ 300252352500



LEASE North Vacuum Abn Unit WELL NO. 132
 INITIAL COMPLETION DATE: 7-15-70 TD 9700' PBTD 8650'
 CURRENT COMPLETION DATE: 10-1-73 CURRENT PBTD 8650'
 CURRENT ^{Injecting} PRODUCING INTERVAL(S): 8485, 92, 96, 98, 9501, 07, 09, 10, 27, 31, 37, 40, 44, 52, 54, 56, 62, 65,
18 holes. + 8484, 86-87, 91, 97, 49, 8500, 04, 06, 07, 07, 11, 28, 30, 32-33, 41-43,
50, 53, 55, 57, 66-67. 183 PF 27 hrs.
 CURRENT TESTS:
 DATE 1/83 12/82 11/82
 METHOD(F,P,GL) Inject. Inject. Inject.
 BOPD/BWPD 310/0 372/0 374/0
 MCF/D(FORM.) — — —

OFFSET WELL TESTS IN ZONE OF INTEREST

COMPANY	<u>MPTM</u>	<u>MPTM</u>	<u>MPTM</u>
LEASE & WELL NO.	<u>NIVAU # 136</u>	<u>NIVAU # 137</u>	<u>NIVAU # 138</u>
DATE	<u>1-17-83</u>	<u>1-21-83</u>	<u>1-30-83</u>
METHOD(F,P,GL)	<u>P</u>	<u>P</u>	<u>P</u>
BOPD/BWPD	<u>158/3</u>	<u>259/0</u>	<u>90/0</u>
MCF/D	<u>131</u>	<u>188</u>	<u>121</u>

WELL HISTORY

REMARKS: (INCLUDE DATA PERTINENT TO W/O, SQZD. PFS, ETC.)

7-15-70: Initial Completion Date - Abn Completion.

10-1-73: Conversion to WIW Completion. Injecting 500 RWD @ 0*TP.

M. W. DEER

3-24-83

Well: NVAU #128
Location: SECT. 23 -T17s-R34e
Date Drilled: 1/6/69
TD: 8,580'
PBD: 8,530'

Current status: Abo WIW

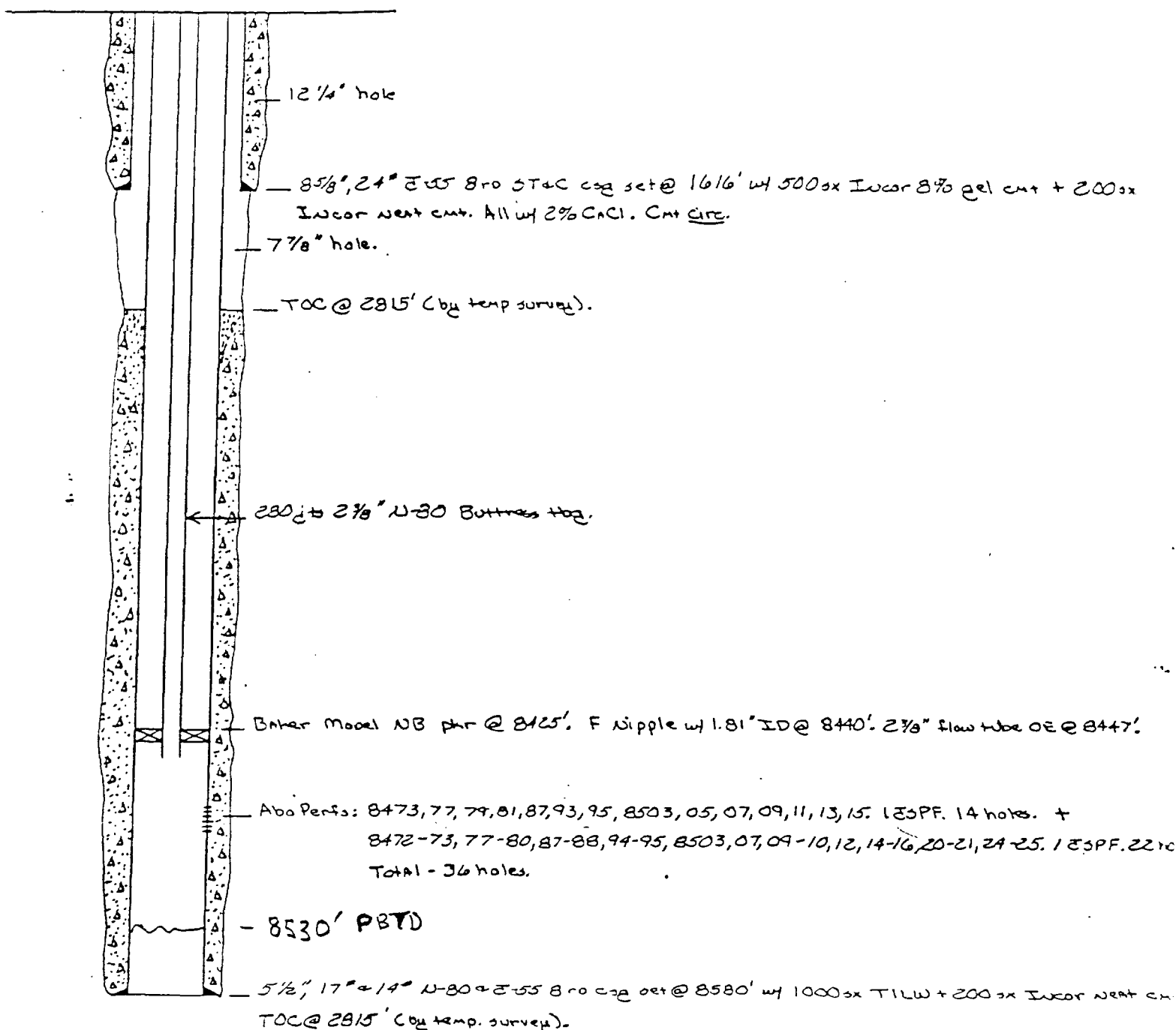
Completion history: See attached

Well Construction: See attached

DATE 3-30-88WELL NO. 129LEASE Do. Vacuum Abq UnitFIELD Vacuum Abq UnitLOCATION H-23-173-34ESIGNED D. S. ElwoodG.L. 4024'D.F. 4036'K.B. 4037'ZERO 13' AGL

2005' FUL AND 535' FEL

Len County, New Mexico



TD 8580'

NVAU #128 COMPLETION HISTORY

1/6/69	Spud well as Bridges State #128
2/5/69	Perf and acidize Abo. 1spf 8473',77,79,81,87,93,95,8503,05,07,09,11,13,15 total of 14 shots 10,000 gal – 15% HCl w/15 ball sealers – balled out
5/8/73	Perf and stimulate. 1 spf 8472'-73,77-80,87-88,94-95,8503,07,09,10,12,14-16,20,21,24,25, total of 22 holes pump 800 gals xylene, 200 gals – 15% HCl - SION pump 500 gals 15% HCl w/50 ball sealers overflushed w/15,000 gals FW
5/14/73	Convert to WIW

Well:	NVAU #129
Location:	SECT. 23 -T17S-R34E
Date Drilled:	4/15/69
TD:	8.600'
PBTD:	8.577'

Current status:	Abo WIW
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Completion history:	See attached
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Well Construction:	See attached
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LOCATION

23-B T-17-S R-34-E

360 FNL 1930 FSL

LEA CO., N.M.

SIGNED

D. G. Elwood

G.L.

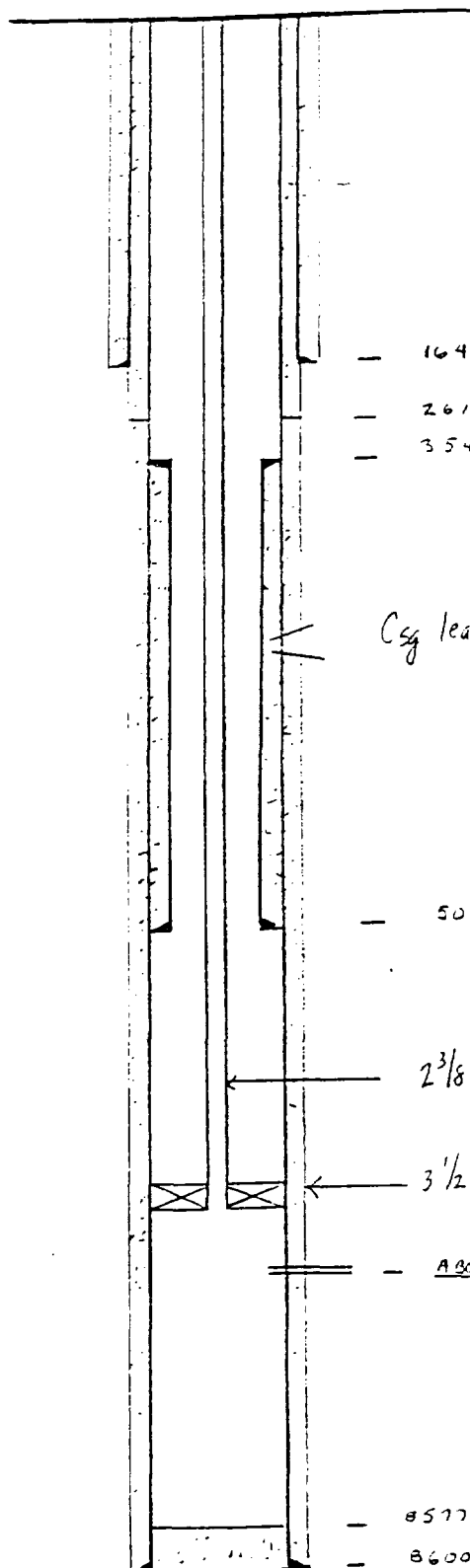
D.F.

K.B.

ZERO

15' AGC

AIC # 3032-23107



— 1641' 8 5/8" 24# CS4 SET W/ 1000 SY CMT CIRC

— 2615' ORIGINAL TDC (T.S.) HOWE CMTD W/ 600 SY THRU 1" PIPE CIRC

— 3545' LINER TOP

Csg leak 4513-50' squeezed

— 5086' 4 1/2" LINER CMTD TWICE W/ 40 SY CMT - (10.23 16/FE FI lin
I.D. 3.952"

2 3/8" tbg

3 1/2" Inflatable Pkr w/on-off tool @ 8440' (Baker ^{Liner} ~~Liner~~ Pkr)— ABO PERFS 8493, 99, 8500, 02, 08, 09, 16, 17, 19, 23, 24, 27, 29, 30-33,
3543, 45, 53, 57, 59 w/ 1550F (32 HOLES)
8501, 03, 10, 11, 20, 24, 28, 30, 42, 44, 46, 47, 56, 59, 60 25PF
30 HOLES

— 8577 P&TD

— 8600' 5 1/2" 17# + 15.5# CS4 SET W/ 1700 SY CMT. + 600 SY
THRU 1" PIPE CIRC (J-55)

8600 TO

LEASE NORTH VACUUM ABO UNIT WELL NO. 129
 INITIAL COMPLETION DATE: 6-10-69 TD 5600 PBDT 3577
 L. ENT COMPLETION DATE: 4-28-81 CURRENT PBDT 3577
 CURRENT PRODUCING INTERVAL(S): ABO
8493, 99, 8500, 02, 08, 09, 16, 17, 19, 23, 26, 27, 29, 30-39, 43, 45, 55, 57, 84
W/ 1 JSPP (32 HOLES).

CURRENT TESTS:

DATE	2/86	3/86	4/86
METHOD(F,P,GL)	Pump	Pump	Pump
BOPD/BWPD	19/0	17/2	18/4
MCF/D(FORM.)	13	13	13

OFFSET WELL TESTS IN ZONE OF INTEREST

COMPANY	MPTM	MATM	MATM	MPTM
LEASE & WELL NO.	NVAH #280	NVAH #281	NVAH #282	NVAH #2
DATE	4/86	3/86	3/86	
METHOD(F,P,GL)	Pump	Pump	Pump	
BOPD/BWPD	10/1	39/0	30/1	
MCF/D	7	30	23	

WELL HISTORY

REMARKS: (INCLUDE DATA PERTINENT TO W/O, SQZD. PFS, ETC.)

4-15-69 SPUD DATE
 5-29-69 PERFORATE ABO ZONE 8493-8538 O.A. (20 HOLES)
 5-30-69 ACIDIZE W/ 10,000 GAL 15% NEA + 5" / 1000 GAL FR AIR 5.1 BPM ISIP 4200
 6-10-69 NMDCL POT: P 61 BD + 2 BW / 24 HRS. GOR III:1 GTY 39.6 @ 60"
 12-8-69 PERFORATE ADDITIONAL HOLES IN ABO 8493-8458 O.A. (32 TOTAL HOLES)
 12-10-69 ACIDIZE ABO ZONE W/ 10,000 GAL 15% HCL AIR 6 BPM ISIP 4000.
 BEFORE 12 BD + 2 BSW AFTER P 27 BND + 4 BAW / 24 HRS
 11-14-70 SD-FRAC ABO 8493-5580 O.A. W/ 20,000 GAL MY-T-FRAC + 42,000 # 20/40 SD.
 + 6000 GAL WTR PAD. AIR 10 BPM ISIP 5400. BEFORE 12/0 AFTER 5/1
 1-7-75 REPAIR CSG LEAK. BEFORE 16/1 AFTER 4/16
 4-16-81 ACIDIZE ABO W/ 10,000 GAL 15% NE FE HCL. AIR 1.6 BPM ISIP 2800.
 BEFORE W O 25/1 AFTER W O 40/16

7-90 Attach profile 12, set down in pits (need to check under 10)

8-19-85 M E VASICEK

Well:	NVAU #137
Location:	SECT. 26 - T17s-R34e
Date Drilled:	6/15/70
TD:	8,700'
PBTD:	8,600'
Current status:	Abo WIW
Completion history:	See attached
Well Construction:	See attached

LOCATION E-26-175-3+ESIGNED J. G. ElwoodG.L. D.F. K.B. ZERO

API BOOK# 3352700

PRESENT

ILLEGIBLE

— 1655' 8 7/8", 23" log set w/ Class A cement w/ 87% gel + 200 sx
Class A neat, all cement contained 2% CaCl₂ cement, 12 1/2%

TOC @ 2620' (Bond Log) 900 sr cement special
down annular. By temp survey, cement
went into formation from 1760' to 1655'.

← 2 3/8" log

— 8377 Permanent pkr

Abc perf: 8421, 83, 89, 95, 97, 8504, 09, 13, 15, 19, 23, + 3525
2 JSPF, 24 holes

+8458, 82, 84, 85, 90, 94, 96, 98, 8503, 05, 08, 14, 16, 22, 24, 30, 31,
32, 33, 34, 44, 46, 55, 80 15PF 48 holes

Date?

— 8600' PBD

— 8690' 5 1/2", 17' x 15.5" 32-10, 271, set w/ 2900 sx
Trinity Lite-Water cement, 1/4" Floe/sx in 15" 1000 sx
+ 200 sx Class C Neat lost returns @ start of displ,
stopped plug after 32 vol of displ.

— 8700 TD

continued from 8 7/8" log w/ 800 sx Inner Neat cement

WELL DATA

PAGE

LEASE NORTH VACUUM ABO UNIT WELL NO. 137
 INITIAL COMPLETION DATE: 7-27-70 TD 3700 PBTD 5-20
 CURRENT COMPLETION DATE: 4-19-85 CURRENT PBTD 3600
 ABO
 CURRENT PRODUCING INTERVAL(S): 3491 33 39 45 47 3504, 30 13 15 16 23 25 w/233PF (2440LBS)

CURRENT TESTS:

DATE	6-5-85	5-4-85	4-12-85
METHOD(F,P,GL)	P	P	P
BOPD/BWPD	99 / 0	117 / 0	112 / 1
MCF/D(FORM.)	72	85	82

OFFSET WELL TESTS IN ZONE OF INTEREST

COMPANY	MPTM	MPTM	MPTM
LEASE & WELL NO.	NVAU 243	NVAU 242	NVAU 237
DATE	6-2-85	6-4-85	6-13-85
METHOD(F,P,GL)	P	P	P
BOPD/BWPD	78 / 111	111 / 50	66 / 57
MCF/D	58	82	52

WELL HISTORY

REMARKS: (INCLUDE DATA PERTINENT TO W/O, SQZD. PFS, ETC.)

6-15-70 SPUD DATE
 7-18-70 PERFORATE ABO 8481-3525 OA.
 7-20-70 ACIDIZE ABO PERFS W/ 10,000 GAL 15% NEA + 20 KENBS. AIR 6.8 BPM 151P200
 7-27-70 NMOC TEST : P 167 BND + 27 BAW / 24 HRS GOR 378 / 1 GTY 37.8 @ 60"
 10-5-82 ACIDIZE ABO PERFS W/ 1500 GAL 15% DI ACID
 10-9-82 ACIDIZE ABO PERFS W/ 1000 GAL 15% DI FLD AIR 3 BPM TP 3300#. 151P2600
 10-14-82 NMOC TEST : P 292 BND + 2 BW / 24 HRS ON JET PMP. GOR 725 / 1 GTY 37.5 @ 60"
 10-26-83 CLEAN OUT HOLE P 30 BND + 24 BND + 78 BLW / 13 HRS
 4-2-85 ACIDIZE ABO PERFS W/ 1000 GAL 15% NEHCL + 2 DRUMS TH-756 / SCALE INHIBITOR
 + 1 DRUM TC-405 (MUTUAL SOLVENT) @ 3.5 BPM
 4-19-85 P 112 BND + 18 BW / 24 HRS

8-2-85 M.E. VASICEK

Well:	NVAU #138
Location:	SECT. 26 - T17s-R34e
Date Drilled:	7/12/70
TD:	8,700'
PBTD:	8,651'

Current status:	Abo WIW
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Completion history:	See attached
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Well Construction:	See attached
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LOCATION L-26-175-345

1990' FS - 860' FV -

SIGNED D. G. Elwood

API= 30025235405

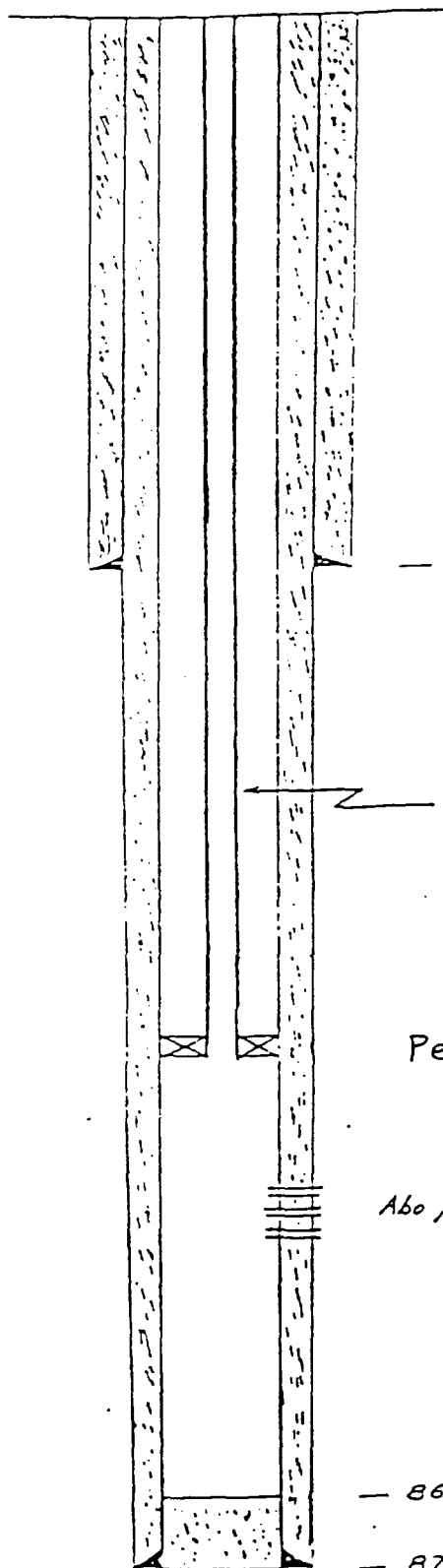
C.L. 2236

D. F. 24-0

К.В. 454

ZERO 15 261

PRESENT



— 16/5' E 3/8", 23" J-55 End cap, 45 jts. set w/ 1000 ss C/las.
87% gel + 27% CaCl_2 + 200 ss Incon Neat cmt w/ 27%
cmt. circ. 12 1/4" hole

 $2\frac{3}{8} + 69$

Perm PKr @ ±8420'

8500-08

8639 -

16-18

34

21-26

—

29-31

24-39

42

47-49

6.5-70

77-76

79-82

72-69

33 27

91

9600

8422-

99-517-1

Abo perf's: 8508, 17, 20, 22, 24, 30, 34, 36, 38, 42, 48, 65, 67, 69,
73, 75, 81, 82, 91, 90, & 8600 w/ 1 JS PF, 21 holes
8506, 07, 16, 18, 21, 23, 25, 29, 31, 35, 37, 39, 47, 49,
66, 68, 70, 72, 74, 76, 79, & 8521 w/ 1 JS PF, 22 holes
+ 8526, 80, 82, 89, 8627, 28, 30, 31, 32, 34, 44, 45, 46, 26 holes

— 8651' PBTD

- 8700' TD 5 1/2", 17", 15", N-80, J-55 8.12 233 sat w/
2500 ss TILW. 1" 1000 ss contained 1/4" Fiocele
+ 200 ss class C Neat. cont. etc. 7 3/4" h/c

WELL DATA

HO-125
PAGE

LEASE NORTH VASICK A20 UNIT WELL NO. 133

INITIAL COMPLETION DATE: 8-12-70 TD 5700 PBD 3351

CURRENT COMPLETION DATE: 9-3-76 CURRENT PBD 335

CURRENT PRODUCING INTERVAL(S): ACD
3508 17 20 22 24 70 74 76 78 79 82 85 87 89 93 95 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59 61 63 65 67 69 71 73 75 77 79 81 83 85 87 89 91 93 95 97 99 101 103 105 107 109 111 113 115 117 119 121 123 125 127 129 131 133 135 137 139 141 143 145 147 149 151 153 155 157 159 161 163 165 167 169 171 173 175 177 179 181 183 185 187 189 191 193 195 197 199 201 203 205 207 209 211 213 215 217 219 221 223 225 227 229 231 233 235 237 239 241 243 245 247 249 251 253 255 257 259 261 263 265 267 269 271 273 275 277 279 281 283 285 287 289 291 293 295 297 299 301 303 305 307 309 311 313 315 317 319 321 323 325 327 329 331 333 335 337 339 341 343 345 347 349 351 353 355 357 359 361 363 365 367 369 371 373 375 377 379 381 383 385 387 389 391 393 395 397 399 401 403 405 407 409 411 413 415 417 419 421 423 425 427 429 431 433 435 437 439 441 443 445 447 449 451 453 455 457 459 461 463 465 467 469 471 473 475 477 479 481 483 485 487 489 491 493 495 497 499 501 503 505 507 509 511 513 515 517 519 521 523 525 527 529 531 533 535 537 539 541 543 545 547 549 551 553 555 557 559 561 563 565 567 569 571 573 575 577 579 581 583 585 587 589 591 593 595 597 599 601 603 605 607 609 611 613 615 617 619 621 623 625 627 629 631 633 635 637 639 641 643 645 647 649 651 653 655 657 659 661 663 665 667 669 671 673 675 677 679 681 683 685 687 689 691 693 695 697 699 701 703 705 707 709 711 713 715 717 719 721 723 725 727 729 731 733 735 737 739 741 743 745 747 749 751 753 755 757 759 761 763 765 767 769 771 773 775 777 779 781 783 785 787 789 791 793 795 797 799 801 803 805 807 809 811 813 815 817 819 821 823 825 827 829 831 833 835 837 839 841 843 845 847 849 851 853 855 857 859 861 863 865 867 869 871 873 875 877 879 881 883 885 887 889 891 893 895 897 899 901 903 905 907 909 911 913 915 917 919 921 923 925 927 929 931 933 935 937 939 941 943 945 947 949 951 953 955 957 959 961 963 965 967 969 971 973 975 977 979 981 983 985 987 989 991 993 995 997 999 1001 1003 1005 1007 1009 1011 1013 1015 1017 1019 1021 1023 1025 1027 1029 1031 1033 1035 1037 1039 1041 1043 1045 1047 1049 1051 1053 1055 1057 1059 1061 1063 1065 1067 1069 1071 1073 1075 1077 1079 1081 1083 1085 1087 1089 1091 1093 1095 1097 1099 1101 1103 1105 1107 1109 1111 1113 1115 1117 1119 1121 1123 1125 1127 1129 1131 1133 1135 1137 1139 1141 1143 1145 1147 1149 1151 1153 1155 1157 1159 1161 1163 1165 1167 1169 1171 1173 1175 1177 1179 1181 1183 1185 1187 1189 1191 1193 1195 1197 1199 1201 1203 1205 1207 1209 1211 1213 1215 1217 1219 1221 1223 1225 1227 1229 1231 1233 1235 1237 1239 1241 1243 1245 1247 1249 1251 1253 1255 1257 1259 1261 1263 1265 1267 1269 1271 1273 1275 1277 1279 1281 1283 1285 1287 1289 1291 1293 1295 1297 1299 1301 1303 1305 1307 1309 1311 1313 1315 1317 1319 1321 1323 1325 1327 1329 1331 1333 1335 1337 1339 1341 1343 1345 1347 1349 1351 1353 1355 1357 1359 1361 1363 1365 1367 1369 1371 1373 1375 1377 1379 1381 1383 1385 1387 1389 1391 1393 1395 1397 1399 1401 1403 1405 1407 1409 1411 1413 1415 1417 1419 1421 1423 1425 1427 1429 1431 1433 1435 1437 1439 1441 1443 1445 1447 1449 1451 1453 1455 1457 1459 1461 1463 1465 1467 1469 1471 1473 1475 1477 1479 1481 1483 1485 1487 1489 1491 1493 1495 1497 1499 1501 1503 1505 1507 1509 1511 1513 1515 1517 1519 1521 1523 1525 1527 1529 1531 1533 1535 1537 1539 1541 1543 1545 1547 1549 1551 1553 1555 1557 1559 1561 1563 1565 1567 1569 1571 1573 1575 1577 1579 1581 1583 1585 1587 1589 1591 1593 1595 1597 1599 1601 1603 1605 1607 1609 1611 1613 1615 1617 1619 1621 1623 1625 1627 1629 1631 1633 1635 1637 1639 1641 1643 1645 1647 1649 1651 1653 1655 1657 1659 1661 1663 1665 1667 1669 1671 1673 1675 1677 1679 1681 1683 1685 1687 1689 1691 1693 1695 1697 1699 1701 1703 1705 1707 1709 1711 1713 1715 1717 1719 1721 1723 1725 1727 1729 1731 1733 1735 1737 1739 1741 1743 1745 1747 1749 1751 1753 1755 1757 1759 1761 1763 1765 1767 1769 1771 1773 1775 1777 1779 1781 1783 1785 1787 1789 1791 1793 1795 1797 1799 1801 1803 1805 1807 1809 1811 1813 1815 1817 1819 1821 1823 1825 1827 1829 1831 1833 1835 1837 1839 1841 1843 1845 1847 1849 1851 1853 1855 1857 1859 1861 1863 1865 1867 1869 1871 1873 1875 1877 1879 1881 1883 1885 1887 1889 1891 1893 1895 1897 1899 1901 1903 1905 1907 1909 1911 1913 1915 1917 1919 1921 1923 1925 1927 1929 1931 1933 1935 1937 1939 1941 1943 1945 1947 1949 1951 1953 1955 1957 1959 1961 1963 1965 1967 1969 1971 1973 1975 1977 1979 1981 1983 1985 1987 1989 1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015 2017 2019 2021 2023 2025 2027 2029 2031 2033 2035 2037 2039 2041 2043 2045 2047 2049 2051 2053 2055 2057 2059 2061 2063 2065 2067 2069 2071 2073 2075 2077 2079 2081 2083 2085 2087 2089 2091 2093 2095 2097 2099 2101 2103 2105 2107 2109 2111 2113 2115 2117 2119 2121 2123 2125 2127 2129 2131 2133 2135 2137 2139 2141 2143 2145 2147 2149 2151 2153 2155 2157 2159 2161 2163 2165 2167 2169 2171 2173 2175 2177 2179 2181 2183 2185 2187 2189 2191 2193 2195 2197 2199 2201 2203 2205 2207 2209 2211 2213 2215 2217 2219 2221 2223 2225 2227 2229 2231 2233 2235 2237 2239 2241 2243 2245 2247 2249 2251 2253 2255 2257 2259 2261 2263 2265 2267 2269 2271 2273 2275 2277 2279 2281 2283 2285 2287 2289 2291 2293 2295 2297 2299 2301 2303 2305 2307 2309 2311 2313 2315 2317 2319 2321 2323 2325 2327 2329 2331 2333 2335 2337 2339 2341 2343 2345 2347 2349 2351 2353 2355 2357 2359 2361 2363 2365 2367 2369 2371 2373 2375 2377 2379 2381 2383 2385 2387 2389 2391 2393 2395 2397 2399 2401 2403 2405 2407 2409 2411 2413 2415 2417 2419 2421 2423 2425 2427 2429 2431 2433 2435 2437 2439 2441 2443 2445 2447 2449 2451 2453 2455 2457 2459 2461 2463 2465 2467 2469 2471 2473 2475 2477 2479 2481 2483 2485 2487 2489 2491 2493 2495 2497 2499 2501 2503 2505 2507 2509 2511 2513 2515 2517 2519 2521 2523 2525 2527 2529 2531 2533 2535 2537 2539 2541 2543 2545 2547 2549 2551 2553 2555 2557 2559 2561 2563 2565 2567 2569 2571 2573 2575 2577 2579 2581 2583 2585 2587 2589 2591 2593 2595 2597 2599 2601 2603 2605 2607 2609 2611 2613 2615 2617 2619 2621 2623 2625 2627 2629 2631 2633 2635 2637 2639 2641 2643 2645 2647 2649 2651 2653 2655 2657 2659 2661 2663 2665 2667 2669 2671 2673 2675 2677 2679 2681 2683 2685 2687 2689 2691 2693 2695 2697 2699 2701 2703 2705 2707 2709 2711 2713 2715 2717 2719 2721 2723 2725 2727 2729 2731 2733 2735 2737 2739 2741 2743 2745 2747 2749 2751 2753 2755 2757 2759 2761 2763 2765 2767 2769 2771 2773 2775 2777 2779 2781 2783 2785 2787 2789 2791 2793 2795 2797 2799 2801 2803 2805 2807 2809 2811 2813 2815 2817 2819 2821 2823 2825 2827 2829 2831 2833 2835 2837 2839 2841 2843 2845 2847 2849 2851 2853 2855 2857 2859 2861 2863 2865 2867 2869 2871 2873 2875 2877 2879 2881 2883 2885 2887 2889 2891 2893 2895 2897 2899 2901 2903 2905 2907 2909 2911 2913 2915 2917 2919 2921 2923 2925 2927 2929 2931 2933 2935 2937 2939 2941 2943 2945 2947 2949 2951 2953 2955 2957 2959 2961 2963 2965 2967 2969 2971 2973 2975 2977 2979 2981 2983 2985 2987 2989 2991 2993 2995 2997 2999 3001 3003 3005 3007 3009 3011 3013 3015 3017 3019 3021 3023 3025 3027 3029 3031 3033 3035 3037 3039 3041 3043 3045 3047 3049 3051 3053 3055 3057 3059 3061 3063 3065 3067 3069 3071 3073 3075 3077 3079 3081 3083 3085 3087 3089 3091 3093 3095 3097 3099 3101 3103 3105 3107 3109 3111 3113 3115 3117 3119 3121 3123 3125 3127 3129 3131 3133 3135 3137 3139 3141 3143 3145 3147 3149 3151 3153 3155 3157 3159 3161 3163 3165 3167 3169 3171 3173 3175 3177 3179 3181 3183 3185 3187 3189 3191 3193 3195 3197 3199 3201 3203 3205 3207 3209 3211 3213 3215 3217 3219 3221 3223 3225 3227 3229 3231 3233 3235 3237 3239 3241 3243 3245 3247 3249 3251 3253 3255 3257 3259 3261 3263 3265 3267 3269 3271 3273 3275 3277 3279 3281 3283 3285 3287 3289 3291 3293 3295 3297 3299 3301 3303 3305 3307 3309 3311 3313 3315 3317 3319 3321 3323 3325 3327 3329 3331 3333 3335 3337 3339 3341 3343 3345 3347 3349 3351 3353 3355 3357 3359 3361 3363 3365 3367 3369 3371 3373 3375 3377 3379 3381 3383 3385 3387 3389 3391 3393 3395 3397 3399 3401 3403 3405 3407 3409 3411 3413 3415 3417 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3819 3821 3823 3825 3827 3829 3831 3833 3835 3837 3839 3841 3843 3845 3847 3849 3851 3853 3855 3857 3859 3861 3863 3865 3867 3869 3871 3873 3875 3877 3879 3881 3883 3885 3887 3889 3891 3893 3895 3897 3899 3901 3903 3905 3907 3909 3911 3913 3915 3917 3919 3921 3923 3925 3927 3929 3931 3933 3935 3937 3939 3941 3943 3945 3947 3949 3951 3953 3955 3957 3959 3961 3963 3965 3967 3969 3971 3973 3975 3977 3979 3981 3983 3985 3987 3989 3991 3993 3995 3997 3999 4001 4003 4005 4007 4009 4011 4013 4015 4017 4019 4021 4023 4025 4027 4029 4031 4033 4035 4037 4039 4041 4043 4045 4047 4049 4051 4053 4055 4057 4059 4061 4063 4065 4067 4069 4071 4073 4075 4077 4079 4081 4083 4085 4087 4089 4091 4093 4095 4097 4099 4101 4103 4105 4107 4109 4111 4113 4115 4117 4119 4121 4123 4125 4127 4129 4131 4133 4135 4137 4139 4141 4143 4145 4147 4149 4151 4153 4155 4157 4159 4161 4163 4165 4167 4169 4171 4173 4175 4177 4179 4181 4183 4185 4187 4189 4191 4193 4195 4197 4199 4201 4203 4205 4207 4209 4211 4213 4215 4217 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4619 4621 4623 4625 4627 4629 4631 4633 4635 4637 4639 4641 4643 4645 4647 4649 4651 4653 4655 4657 4659 4661 4663 4665 4667 4669 4671 4673 4675 4677 4679 4681 4683 4685 4687 4689 4691 4693 4695 4697 4699 4701 4703 4705 4707 4709 4711 4713 4715 4717 4719 4721 4723 4725 4727 4729 4731 4733 4735 4737 4739 4741 4743 4745 4747 4749 4751 4753 4755 4757 4759 4761 4763 4765 4767 4769 4771 4773 4775 4777 4779 4781 4783 4785 4787 4789 4791 4793 4795 4797 4799 4801 4803 4805 4807 4809 4811 4813 4815 4817 4819 4821 4823 4825 4827 4829 4831 4833 4835 4837 4839 4841 4843 4845 4847 4849 4851 4853 4855 4857 4859 4861 4863 4865 4867 4869 4871 4873 4875 4877 4879 4881 4883 4885 4887 4889 4891 4893 4895 4897 4899 4901 4903 4905 4907 4909 4911 4913 4915 4917 4919 4921 4923 4925 4927 4929 4931 4933 4935 4937 4939 4941 4943 4945 4947 4949 4951 4953 4955 4957 4959 4961 4963 4965 4967 4969 4971 4973 4975 4977 4979 4981 4983 4985 4987 4989 4991 4993 4995 4997 4999 5001 5003 5005 5007 5009 5011 5013 5015 5017 5019 5021 5023 5025 5027 5029 5031 5033 5035 5037 5039 5041 5043 5045 5047 5049 5051 5053 5055 5057 5059 5061 5063 5065 5067 5069 5071 5073 5075 5077 507

Well:	NVAU #143
Location:	SECT. 27 - T17s-R34e
Date Drilled:	9/1/70
TD:	8,745'
PBTD:	8,730'
Current status:	Abo WIW
Completion history:	See attached
Well Construction:	See attached

DATE 4-1-88

WELL NO.

LEASE

LOCATION

27 - 17 S - 134 E
SEA COUNTY, IN

SIGNED

D. G. Elwood

API # 30025-23545-01

PRESENT

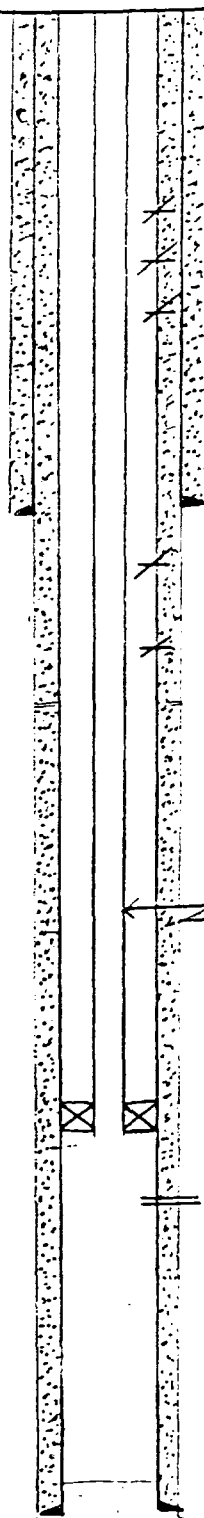
G.L. - 125'

D.F. - 151'

K.B. - 155'

ZERO 25' AGL

LLEGIBLE



575' PERFORATE 2 HOLES. 3000' W/ 200 G. CMT. 200
 800' PERFORATE 2 HOLES. UNABLE TO PUMP INTO 300' HOLE. PRESS
 1400' PERFORATE 2 HOLES. 3000' W/ 200 G. CMT

12' HOLE
 1655' 8 5/8" 23# 1000' W/ 1000 G. CMT. 200
 1655' PERFORATE 2 HOLES. 3000' W/ 200 G. CMT
 2300' PERFORATE 4 HOLES. 3000' W/ 500 G. CMT
 2340' ORIGINAL TOP OF SEGMENT (T.S.)

209 JTS = 3 1/8" TUB + 62 JTS 2 7/8" TUB + TPA SN + PERFORATION

Permanent Pkr @ 8579'

ALO PERFS 8405, 03, 10, 19, 25, 27, 31, 37, 39, 43, 45, 47, 49, 50,
 36 53, 55, 59, 64, 69, 73, 75, 8480 (22 HOLES)
 + 8611, 26, 28, 29, 30, 38, 40, 41, 42, 44, 46, 48, 52, 58,
 63, 65, 70, 74' ISPF 36 holes

7 7/8" HOLE
 8730 PRTD
 8745' 5 1/2" CMT SET W/ 3100 G. CMT
 (15.5#)

8745 TD

5405
 8608
 8710-11
 17
 25-31
 37-51
 52
 55
 57-59
 63-65
 67-70
 73-75

LEASE NORTH VACUUM ABO UNIT WELL NO. 143
 INITIAL COMPLETION DATE: 10-5-70 TD 8745 PBTD 8730
 CURRENT COMPLETION DATE: 8-7-81 CURRENT PBTD 8745
ABO PERFS
 CURRENT PRODUCING INTERVAL(S): 8605, 08, 10, 17, 25, 27, 31, 37, 39, 43, 45, 47, 49, 51, 53, 55, 57, 64, 67, 69, 71, 73, 75, 77, 79, 81, 83, 85, 87, 89, 91, 93, 95, 97, 99, 101, 103, 105, 107, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 133, 135, 137, 139, 141, 143, 145, 147, 149, 151, 153, 155, 157, 159, 161, 163, 165, 167, 169, 171, 173, 175, 177, 179, 181, 183, 185, 187, 189, 191, 193, 195, 197, 199, 201, 203, 205, 207, 209, 211, 213, 215, 217, 219, 221, 223, 225, 227, 229, 231, 233, 235, 237, 239, 241, 243, 245, 247, 249, 251, 253, 255, 257, 259, 261, 263, 265, 267, 269, 271, 273, 275, 277, 279, 281, 283, 285, 287, 289, 291, 293, 295, 297, 299, 301, 303, 305, 307, 309, 311, 313, 315, 317, 319, 321, 323, 325, 327, 329, 331, 333, 335, 337, 339, 341, 343, 345, 347, 349, 351, 353, 355, 357, 359, 361, 363, 365, 367, 369, 371, 373, 375, 377, 379, 381, 383, 385, 387, 389, 391, 393, 395, 397, 399, 401, 403, 405, 407, 409, 411, 413, 415, 417, 419, 421, 423, 425, 427, 429, 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1193, 1195, 1197, 1199, 1201, 1203, 1205, 1207, 1209, 1211, 1213, 1215, 1217, 1219, 1221, 1223, 1225, 1227, 1229, 1231, 1233, 1235, 1237, 1239, 1241, 1243, 1245, 1247, 1249, 1251, 1253, 1255, 1257, 1259, 1261, 1263, 1265, 1267, 1269, 1271, 1273, 1275, 1277, 1279, 1281, 1283, 1285, 1287, 1289, 1291, 1293, 1295, 1297, 1299, 1301, 1303, 1305, 1307, 1309, 1311, 1313, 1315, 1317, 1319, 1321, 1323, 1325, 1327, 1329, 1331, 1333, 1335, 1337, 1339, 1341, 1343, 1345, 1347, 1349, 1351, 1353, 1355, 1357, 1359, 1361, 1363, 1365, 1367, 1369, 1371, 1373, 1375, 1377, 1379, 1381, 1383, 1385, 1387, 1389, 1391, 1393, 1395, 1397, 1399, 1401, 1403, 1405, 1407, 1409, 1411, 1413, 1415, 1417, 1419, 1421, 1423, 1425, 1427, 1429, 1431, 1433, 1435, 1437, 1439, 1441, 1443, 1445, 1447, 1449, 1451, 1453, 1455, 1457, 1459, 1461, 1463, 1465, 1467, 1469, 1471, 1473, 1475, 1477, 1479, 1481, 1483, 1485, 1487, 1489, 1491, 1493, 1495, 1497, 1499, 1501, 1503, 1505, 1507, 1509, 1511, 1513, 1515, 1517, 1519, 1521, 1523, 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2853, 2855, 2857, 2859, 2861, 2863, 2865, 2867, 2869, 2871, 2873, 2875, 2877, 2879, 2881, 2883, 2885, 2887, 2889, 2891, 2893, 2895, 2897, 2899, 2901, 2903, 2905, 2907, 2909, 2911, 2913, 2915, 2917, 2919, 2921, 2923, 2925, 2927, 2929, 2931, 2933, 2935, 2937, 2939, 2941, 2943, 2945, 2947, 2949, 2951, 2953, 2955, 2957, 2959, 2961, 2963, 2965, 2967, 2969, 2971, 2973, 2975, 2977, 2979, 2981, 2983, 2985, 2987, 2989, 2991, 2993, 2995, 2997, 2999, 3001, 3003, 3005, 3007, 3009, 3011, 3013, 3015, 3017, 3019, 3021, 3023, 3025, 3027, 3029, 3031, 3033, 3035, 3037, 3039, 3041, 3043, 3045, 3047, 3049, 3051, 3053, 3055, 3057, 3059, 3061, 3063, 3065, 3067, 3069, 3071, 3073, 3075, 3077, 3079, 3081, 3083, 3085, 3087, 3089, 3091, 3093, 3095, 3097, 3099, 3101, 3103, 3105, 3107, 3109, 3111, 3113, 3115, 3117, 3119, 3121, 3123, 3125, 3127, 3129, 3131, 3133, 3135, 3137, 3139, 3141, 3143, 3145, 3147, 3149, 3151, 3153, 3155, 3157, 3159, 3161, 3163, 3165, 3167, 3169, 3171, 3173, 3175, 3177, 3179, 3181, 3183, 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3849, 3851, 3853, 3855, 3857, 3859, 3861, 3863, 3865, 3867, 3869, 3871, 3873, 3875, 3877, 3879, 3881, 3883, 3885, 3887, 3889, 3891, 3893, 3895, 3897, 3899, 3901, 3903, 3905, 3907, 3909, 3911, 3913, 3915, 3917, 3919, 3921, 3923, 3925, 3927, 3929, 3931, 3933, 3935, 3937, 3939, 3941, 3943, 3945, 3947, 3949, 3951, 3953, 3955, 3957, 3959, 3961, 3963, 3965, 3967, 3969, 3971, 3973, 3975, 3977, 3979, 3981, 3983, 3985, 3987, 3989, 3991, 3993, 3995, 3997, 3999, 4001, 4003, 4005, 4007, 4009, 4011, 4013, 4015, 4017, 4019, 4021, 4023, 4025, 4027, 4029, 4031, 4033, 4035, 4037, 4039, 4041, 4043, 4045, 4047, 4049, 4051, 4053, 4055, 4057, 4059, 4061, 4063, 4065, 4067, 4069, 4071, 4073, 4075, 4077, 4079, 4081, 4083, 4085, 4087, 4089, 4091, 4093, 4095, 4097, 4099, 4101, 4103, 4105, 4107, 4109, 4111, 4113, 4115, 4117, 4119, 4121, 4123, 4125, 4127, 4129, 4131, 4133, 4135, 4137, 4139, 4141, 4143, 4145, 4147, 4149, 4151, 4153, 4155, 4157, 4159, 4161, 4163, 4165, 4167, 4169, 4171, 4173, 4175, 4177, 4179, 4181, 4183, 4185, 4187, 4189, 4191, 4193, 4195, 4197, 4199, 4201, 4203, 4205, 4207, 4209, 4211, 4213, 4215, 4217, 4219, 4221, 4223, 4225, 4227, 4229, 4231, 4233, 4235, 4237, 4239, 4241, 4243, 4245, 4247, 4249, 4251, 4253, 4255, 4257, 4259, 4261, 4263, 4265, 4267, 4269, 4271, 4273, 4275, 427

Well:	NVAU #151
Location:	SECT. 23 – T17s-R34e
Date Drilled:	1/5/71
TD:	12,180'
PBTD:	9,480

Current status:	Abo WIW
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Completion history:	See attached
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Well Construction:	See attached
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DATE 4-1-88

WELL NO. 151

LEASE 1/2 Section 36, T2N, R10E, S10E

FIELD 1/2 Section 36, T2N, R10E, S10E

LOCATION = 22-175-24E

SIGNED D. G. Elwood

G.L. 1732

D.F. 1000

K.B. 1000

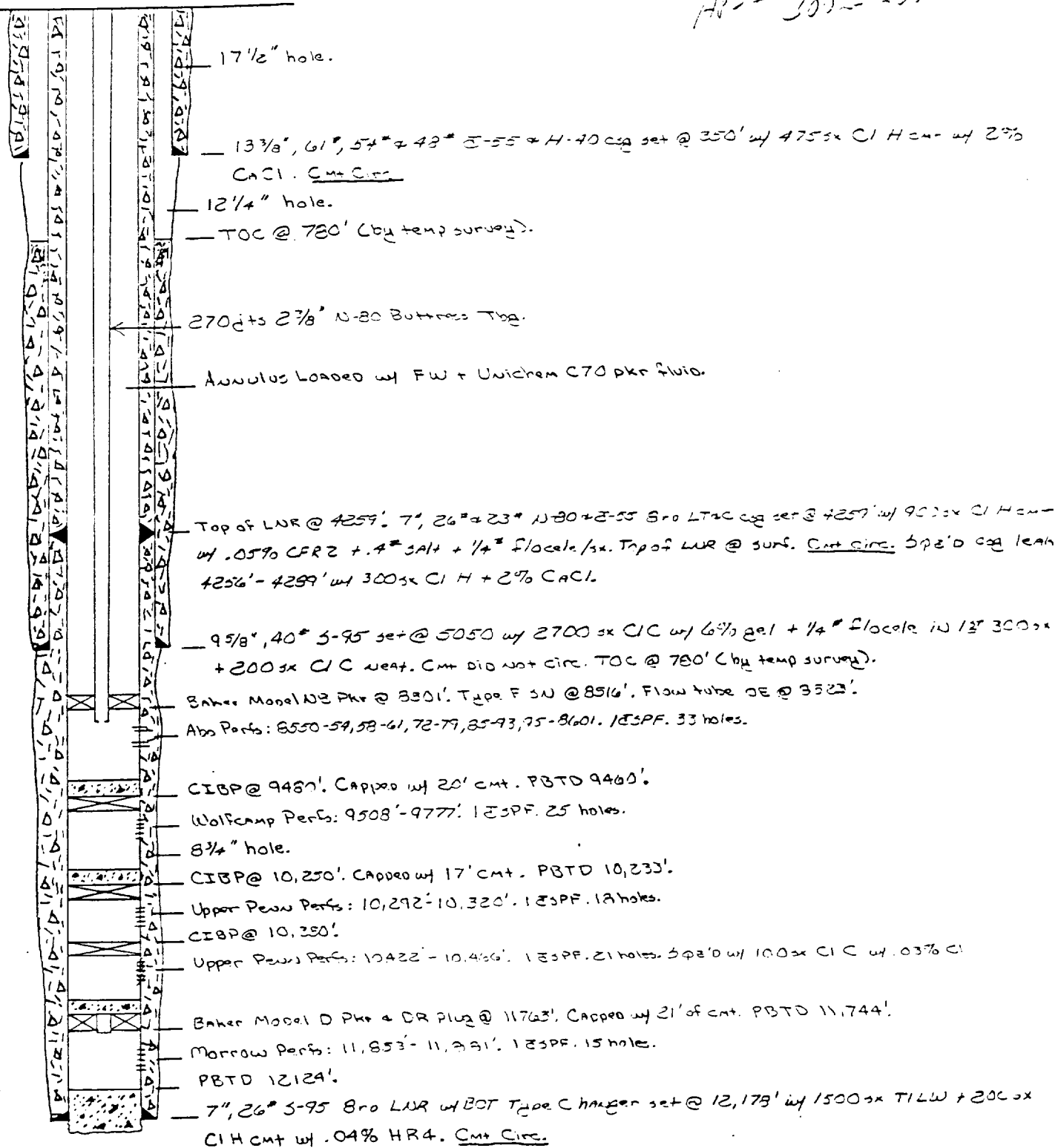
ZERO 1000

1730' FANL and 2130' FWL

Lea County, New Mexico

PRESENT

H/E = 3002-236500



TO 12130'

LEASE North Vacuum Abo Unit WELL NO. 131 W

INITIAL COMPLETION DATE: 3-18-71 TD 12,180' PBTD 12,124'

RECENT COMPLETION DATE: 4-28-73 CURRENT PBTD 9460'

CURRENT PRODUCING INTERVAL(S): 8550-54, 58-61, 72-79, 85-93, 95-8601, 33 holes.
(Schl GR - Sonic Log - 3/10/71)

CURRENT TESTS:

DATE 10-5-82

METHOD(F,P,GL) Ini.

BOPD/BWPD 15 BWPD @ 4400 psi

MCF/D(FORM.) —

OFFSET WELL TESTS IN ZONE OF INTEREST

COMPANY	<u>Mobil</u>	<u>Mobil</u>	<u>Mobil</u>
LEASE & WELL NO.	<u>NVAU #208</u>	<u>NVAU #128</u>	<u>NVAU #213</u>
DATE	<u>10-5-82</u>	<u>10-4-82</u>	<u>10-6-82</u>
METHOD(F,P,GL)	<u>Ini.</u>	<u>Ini.</u>	<u>Ini.</u>
BOPD/BWPD	<u>30 BWPD @ 4500 psi</u>	<u>116 BWPD @ 4450 psi</u>	<u>123 BWPD @ 4400 psi</u>
MCF/D	<u>—</u>	<u>—</u>	<u>—</u>

WELL HISTORY

REMARKS: (INCLUDE DATA PERTINENT TO W/O, SQZD. PFS, ETC.)

3/18/71: Initial completion in Morrow. 24 hr test: F 2.10 MMCFG +
4 1/6 BNO, 1" cb, TP 1600-1260', Gas Vol 3.1 to 1.9.

4/21/72: Performed "Dowell" Gas Frac & set compressor. F 12 BNO + OP
24 hrs, GV 600 MCFPD, Suction Press. 640', Discharge 740'.
Before - OBO + 100 MCFPD.

4/15/73: Plugged Morrow zone - perf. Upper Penn.

4/24/73: Plugged Upper Penn. - perf. Wolfcamp.

4/27/73: Plugged Wolfcamp.

4/28/73: Spotted 500 gals 15% NE Acid @ 8606'. Perf 7" liner @ 8550-54, 58,
61, 72-79, 85-93, 95-8601, 33 holes. Displ. Acid into foam, BDTP 2,
TP 3300-3500, AIR 2.0 RPM, ITP 2750.
Treated perfs w/ 800 gals Xylene, 200 gals 15% NE Acid, 2 gals
Aerfoam. TTP 3750-3800, AIR 1.5 RPM, flushed w/ 32 bbls TE

5/1/73: Acidized perfs 8550-8601 w/ 5000 gals 15% FE Acid, Flushed &
Overflushed w/ 15000 gals fr. wtr treated w/ 2 gals Adamal/1000 g
m.w. DEER (continued)

WELL HISTORY

(Cont from previous page)

5/3/73: Lost csg w/ fr. wtr. treated w/ Cement 2207.

1/20/75: Ran BOT wire guide w/ 121 ft 7" OD 26" & 23" A-97 & B-55
Ran LT&C csg. Set in top of 7" liner at 4259'. Cut csg w/ 900
x Cl H Cut w/ .05% CFRZ + .4" salt + 1/4" Siocel/x

12/17/80: Csg leak found between 4256 & 4289 - possibly in BOT tie
back sleeve @ 4259. 602' O leak w/ 300 x Cl H + 29% CaCl -
Max press 4000* - rev out 60 x cmt.

9/83 Acidize the Abd w/ 5000 gals of 15% HCL. ATR: 16 BPM @ 5100*
Before: Inj 34 BWPD @ 4350 psi After: Inj 75 BWPD @ 4350 psi
D.A. Howell 7-24-87

M.W. DEER

2-11-83

Well:	NVAU #157
Location:	SECT. 27 – T17s-R34e
Date Drilled:	5/25/71
TD:	12,500'
PBTD:	10,490'

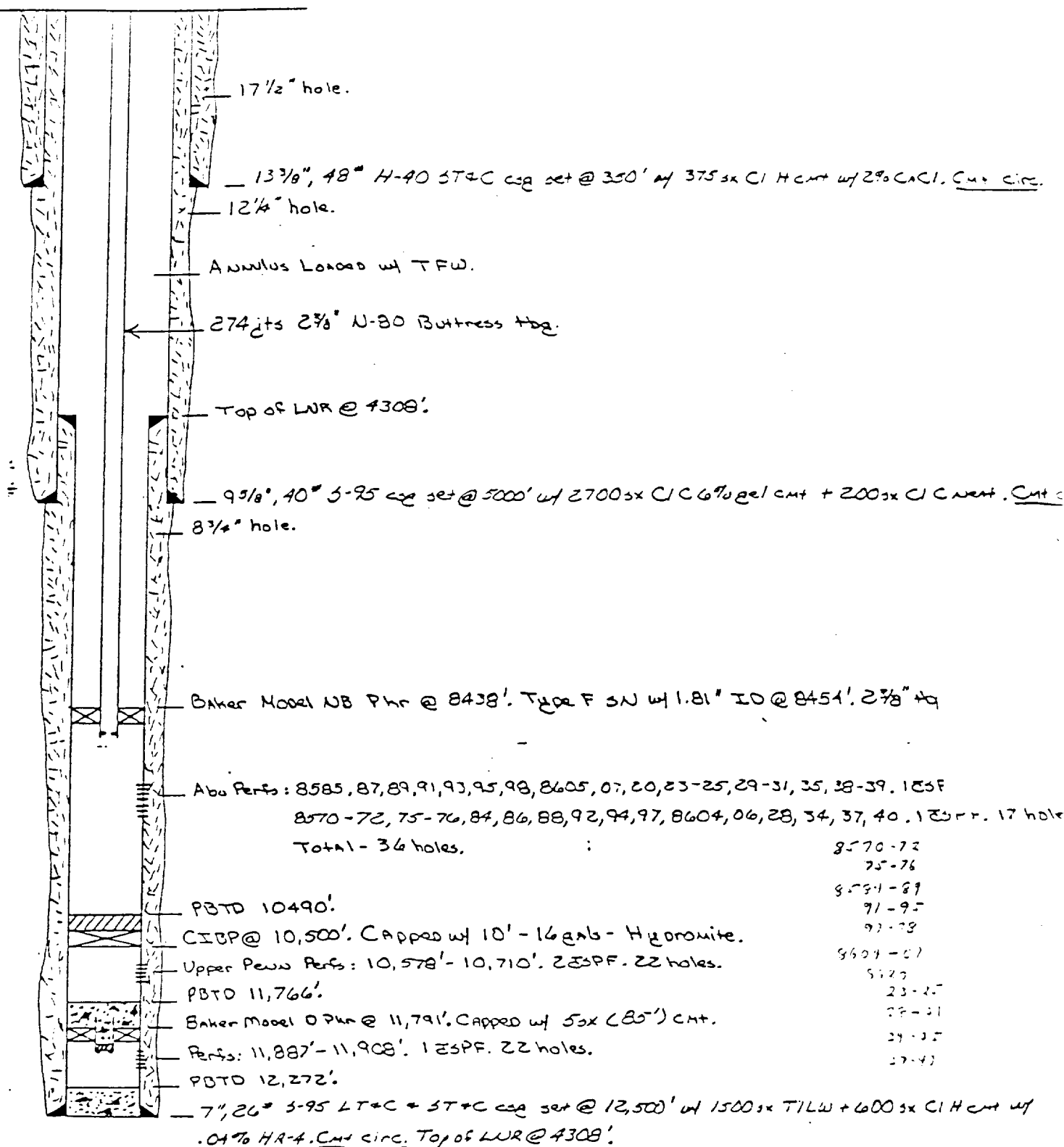
Current status:	Abo WIW
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Completion history:	See attached
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Well Construction:	See attached
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DATE 4-4-88WELL NO. 157LEASE 157FIELD 157LOCATION 4-27-174-34ESIGNED D.G. ElwoodG.L. 4-27-174-34ED.F. 4-27-174-34EK.B. 4-27-174-34EZERO 4-27-174-34E2180' FUL AND 600' FE -
Lea County, New MexicoAPI 300252378200

PRESENT



TD 12500'

Well: NVAU #210
Location: SECT. 23 - T17S-R34e
Date Drilled: 2/28/72
TD: 8,800'
PBD: 8,764'

Current status: Abo WIW

Completion history: See attached

Well Construction: See attached

G.L. 4018'
K.B. 4032'
Zero 14' AGL



12-3/4" casing set @ 290'
Cemented with 450 sxs. Class 'C'
Cement circulated to surface
17-1/2" hole

8-5/8", 28 & 24 lb/ft casing set @ 3045'
Cemented with 1200 sxs. TILW + 200 sxs. Class 'C'
Cement circulated to surface
11" hole

265 fts. of 2-7/8" IJ 3-SS Atlas Bradford tubing

5-1/2" Otis 'TB' packer @ 8492'

Abo Perforations:

8539', 40', 53'-55', 61'-63', 83'-87', 94'-96', 8607'-09' with 1 JSPF (19 holes)

8533', 35', 38', 47', 69'-71', 8618', 19', 28', 30', 34', 41', 52', 63'-67', 88', 93',
98', 99', 8700', 06', 15'-17' with 1 JSPF (56 holes)

Total - 75 holes

5-1/2", 17 lb/ft, N-80 & J-55 casing set @ 8800'
Cemented with 2100 sxs. TILW + 200 sxs. Class 'C'
TOC @ 3050' (Temp Survey)
7-7/8" hole

PBTD 8764
TD 8800'

Mobil Exploration & Producing U.S., Inc.
Current Completion

LEASE North Vacuum Abo Unit			WELL NO 210
COUNTY Lea	STATE NM	API # 30-025-2404400	
LEGAL LOCATION 1840' FSL & 800' FEL Sect 22 T-17-S R-34-			
DRAWN BY C.M. Jones			DATE 06 April 1995

Well ID # 0008959

North Vacuum Abo Unit #210
Well History

02/28/72	Well spudded as State 'KK' #12.
03/21/72	Perforated in the Abo formation at 8539', 40', 53', 54', 55', 61', 62', 63', 83', 84', 85', 86', 87', 94', 95', 96', 8607', 08', and 09' with 1 JSPF (19 holes). Acidized Abo perfs (8539'-8609') with 10,000 gallons 15% HCl containing 5#/1000 gallons friction reducer and 20 RCNBS. TTP: 4700 psig - 5300 psig. AIR: 4.8 BPM. ISIP: 4000 psig. 15 min SIP: 3600 psig. IP: 25 BCPD & 1 BWPD
07/11/77	Acidized Abo perfs (8539'-8609') with 10,000 gallons 60 quality foam acid in 5 stages + 28 RCNBS. TTP: 4400 psig - 5900 psig. AIR: 4.5 BPM. ISIP: 5300 psig. 15 min SIP: 4800 psig. Before: 9 BCPD & 1 BWPD After: 13 BCPD & 3 BWPD
03/29/83	Spot 150 gallons Xylene + 150 gallons Calcium Sulfate scale converter. SI for 24 hrs.
03/30/83	Acidized Abo perfs (8539'-8609') with 10,000 gallons 15% HCl. Flush with 35 bbl 2% KCl. AIR: 3.0 BPM @ 2735 psig. Max. press: 3440 psig. 5 min SIP: 2710 psig. 10 min SIP: 1120 psig. 15 min SIP: 470 psig. Before: 16 BOPD & 0 BWPD After: 18 BOPD & 6 BWPD
05/09/86	Perforate in the Abo formation at 8533', 35', 38', 47', 69'-71', 8618', 19', 28', 30', 34', 41', 52', 63'-67', 88', 93', 8698'-8700', 06', 15'-17' with 2 JSPF (56 holes).
05/11/86	Acidized Abo perfs (8533'-8717') with 5,000 gallons 15% HCl + 250 gallons Mutual Solvent + 125 (1.3 SG) RCNBS. TTP: 100 psig - 5350 psig. AIR: 4.0 BPM. Excellent ball action. Ball out @ 5350 psig (with some leakage). ISIP: 1900 psig. 10 min SIP: 0 psig.
05/13/86	Well converted to WMW IJ: 154 BWMPD @ 1775 psig TP
01/10/87	Sand Frac'd Abo perfs (8533'-8717') with 14,600 gallons 30# X-Linked 2% KCl + 15,500# 20/40 Resin Coated sand. TTP: 850 psig - 7000 psig. AIR: 31.2 BPM @ 7000 psig. Flushed with 81 bbls gelled water. ISIP: 4000 psig. 5 min SIP 3900 psig. 10 min SIP: 3810 psig. 70 hour SIP: 1700 psig. Before: 11 BWMPD After: 17 BWMPD @ 2700 psig TP

Well:	NVAU #220
Location:	SECT. 22 - T17S-R34E
Date Drilled:	5/20/74
TD:	8,800'
PBTD:	8,760'

Current status:	Abo WIW
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Completion history:	See attached
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Well Construction:	See attached
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SL 4035
 ASL 4044
 12m 3' AGL

Surface casing set @ 159'

Surface casing set @ 159'
 Cemented with 400 sxs Class 'C'
 Cement simulated to surface
 159' 10" 1/2"

Surface casing set @ 2015'
 Cemented with 1400 sxs 17 1/2" x 200 sxs Class 'C'
 Cement simulated to surface
 2015' 4"

2015' 4" 17 1/2" event tubing

Baker-Miller 18" packer @ 3532' Model 17 SN (1 31" ID) @ 3532'
 2 3/4" 17 1/2" @ 3534'

App. perforations
 37' 11" 17 1/2" 35-38" 41-44" 52-57" 60-64" with 1 USPR (27 holes)

Surface casing set @ 3800'
 Cemented with 1400 sxs 17 1/2" x 200 sxs Class 'C'
 Cement simulated
 3800' 4"

PBTD 8760
 TD 3800'

Mobil Exploration & Producing Co., Inc.
 Current Completion

Well		North Vacuum App Unit		Well No.	220
County	Lea	State	NM	Well No.	20-013-247-800
Well Location					
860' FSL & 860' FEL Sect 22 T-11 S R-34-E					
Driller				Date	06 April 1945
C. M. Jones					

Well ID # 0008960

North Vacuum Abo Unit #220
Well History

05/20/74 Well spudded

06/29/74 Perforated in the Abo formation at 8613'-18', 27', 35'-38', 41'-45', 52'-57', and 60'-64' with 1 JSPP (27 holes).

07/02/74 Acidized Abo perms (8613'-8664') with 5000 gallons 15% HCl with 5#/1000 gallons friction reducer and 30 RCNBS. BDTP: 3700 psig. TTP: 4200 psig - 4850 psig. AIR: 5.5 BPM. ISIP: 2900 psig. 5 min SIP: 1500 psig. 10 min SIP: 600 psig. IJ: 350 BWMPD @ 800 psig TP

09/13/83 Acidized Abo perms (8613'-8664') with 5000 gallons 15% HCl. TTP: 4900 psig - 5500 psig. AIR: 2 BPM. Flashed acid with 40 bbls fresh water. ISIP: 5000 psig. 5 min SIP: 4200 psig. 10 min SIP 4200 psig. 15 min SIP: 4150 psig. Flowed back 150 bbls water.
Before: 94 BWMPD @ 4450 psig TP
After: 148 BWMPD @ 3750 psig TP

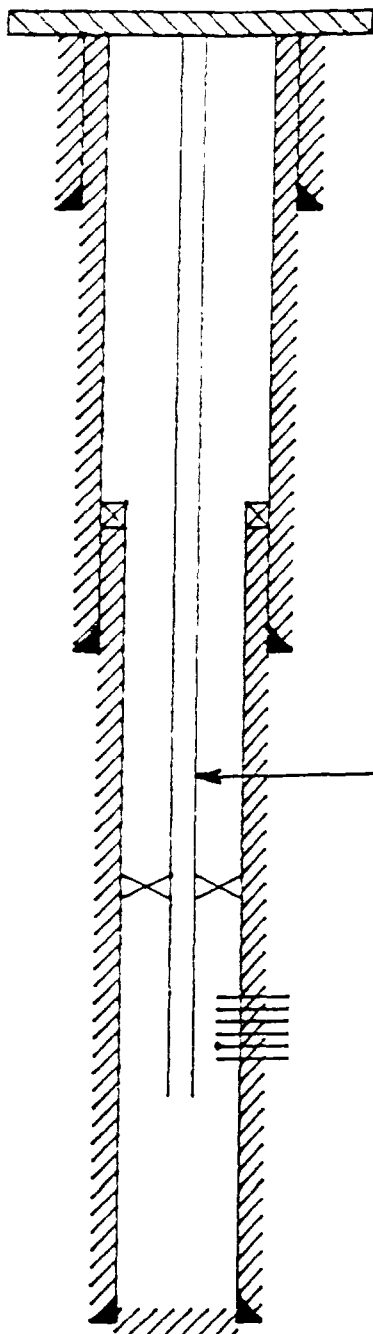
Well:	NVAU #234
Location:	SECT. 23 - T17S-R34e
Date Drilled:	11/17/83
TD:	8,700'
PBTD:	8,680'

Current status:	Abo Producer - Oil
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Completion history:	See attached
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Well Construction:	See attached
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G.L. 4024'
K.B. 4036'
ZERO 12' AGL



13-3/8", 48 LB/FT, H-40 CASING SET AT 400'
CEMENTED WITH 400 SXS. CLASS 'C'
CEMENT CIRCULATED
17-1/2" HOLE

BOT TYPE 'C' LINER HANGER AT 4174'

8-5/8", 32 LB/FT, S-80 & K-55 CASING SET AT 5000'
CEMENTED WITH 3900 SXS. CLASS 'C'
TOP OF CEMENT AT 1635' (TEMP SURVEY)
SQZD. 13-3/8" X 8-5/8" ANNULUS WITH 1300 SXS. CLASS 'C'
12-1/4" HOLE

275 JTS. 2-7/8", 6.5 LB/FT, J-55 TUBING
SN @ 8634'

5-1/2" TAC AT 8317'

ABQ PERFS:
8470'-72', 8479'-81', 8484'-88', 8496'-8505', 8510'-13',
8519'-21', 8523'-27', 8576'-79', 8590'-94', 8599'-8602',
8604'-06', 8608'-10', 8619'-22' WITH 1 JSPF (56 HOLES)

5-1/2", 15.5 & 17 LB/FT, K-55 CASING SET AT 8700'
CEMENTED WITH 1125 SXS. CLASS 'H'
CEMENT CIRCULATED
7-7/8" HOLE

PBD 8680'
TD 8700'

MOBIL EXPLORATION & PRODUCING U.S., INC.
PRESENT COMPLETION

LEASE & WELL NO.		NORTH VACUUM ABQ UNIT #234	
LOCATION		1980' FSL & 543' FEL. SECT 23 T17S R34E	
COUNTY		LEA	STATE NEW MEXICO
APL NO		300252831400	APPROX DATE
DATE		17 FEBRUARY 1995	BY C.M. JONES

✓
L243
P2

LEASE Meth Vacuum Abo Unit WELL NO. 234
 INITIAL COMPLETION DATE: 2-15-84 TD 8700' PBTD 8680'
 CURRENT COMPLETION DATE: 2-15-84 CURRENT PBTD 8680'
 CURRENT PRODUCING INTERVAL(S): 8576'-8622' 8470'-8527' CP
 CURRENT TESTS:
 DATE 2-14-85 3-11-85 3-20-85
 METHOD(F,P,GL) P P P
 BOPD/BWPD 56/85 44/106 62/101
 MCF/D(FORM.) _____

ILLEGIBLE

OFFSET WELL TESTS IN ZONE OF INTEREST

COMPANY	<u>MPTM</u>	<u>MPTM</u>	<u>MPTM</u>
LEASE & WELL NO.	<u>NVAU# 116</u>	<u>NVAU# 156</u>	<u>NVAU# 244</u>
DATE	<u>3-16-85</u>	<u>3-5-85</u>	<u>3-4-85</u>
METHOD(F,P,GL)	<u>P</u>	<u>P</u>	<u>P</u>
BOPD/BWPD	<u>59/102</u>	<u>42/15</u>	<u>104/57</u>
MCF/D	_____	_____	_____

WELL HISTORY

REMARKS: (INCLUDE DATA PERTINENT TO W/O, SQZD. PFS, ETC.)

11-17-83 Spud 17 1/2" hole TD'd @ 8700' 12/13/83
 1-24-84 Perf Abo @ 8576' 79' 90'-94' 99' 8602' 14'-06' 08'-10' 19'-22' ISIPF 2
 1-25-84 Acidize w/1000 gals 15% FE NEA PDTP 3200, ISIP 3500 Acidize w/
 1000 gals 15% NEA FE + 36 RCNPS TTP 3800-5800 AIP 5, ISIP 3700
 5min 3600 10min 3500 Good ball action
 1-27-84 Acidize w/4600 gals 15% NEA FE + 46 RCNPS TTP 3700-4700 AIP 5.5 EC
 ISIP 3400 5min 3300 10min 3300
 1-28-84 Perf Abo @ 8470'-72' 79'-81' 84'-88' 96'-8505' 10'-13' 19'-21' 23'-27' 17
 33 holes Acidize 8470'-8527' w/1500 gals 15% DINE FE HCl acid +
 RCNPS PDTP 3100 TTP 3100-4300 AIP 5.3 BOP 5500 w/1356 gals acid + 34 C
 ISIP 3000 10min 3000
 1-28-84 Acidize 8470'-8527' w/4600 gals 15% NEA FE + 46 RCNPS TTP 3700-4700
 AIP 5.5 Good ball action ISIP 2900 5min 2000 10min 1700
 1-28-84 N/A CD P+ P 166 EC + 94 ESW/24 hrs 7-134 x 144" GPM GOR 560/1

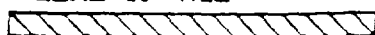
Well:	NVAU #237
Location:	SECT. 26 - T17s-R34e
Date Drilled:	10/19/83
TD:	8,700'
PBTD:	7,645'

Current status:	Abo Producer - Oil
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Completion history:	See attached
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Well Construction:	See attached
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G.L. 4026'
K.B. 4035'
ZERO 10' AGL



13-3/8', 54.5 & 48 LB/FT, H-40 CASING SET AT 405'
CEMENTED WITH 400 SXS. CLASS 'C'
CEMENT CIRCULATED
17-1/2' HOLE

BOT TYPE 'C' LINER HANGER AT 4182'

8-5/8', 32 LB/FT, S-80 & K-55 CASING SET AT 4918'
CEMENTED WITH 3825 SXS. CLASS 'C'
CEMENT CIRCULATED
12-1/4' HOLE

2-7/8', 6.5 LB/FT, J-55 TUBING
SN @ 8588'

5-1/2' TAC AT 8271'

ABO PERFS:
8425'-30', 8460'-62', 8482'-91, 8540'-43', 8549'-52',
8562'-65', 8571'-73', 8576'-84' WITH 1 JSPF (43 HOLES)
8402'-10', 8422'-30', 8434'-62', 8468'-96' WITH
2 JSPF (152 HOLES)

5-1/2', 15.5 & 17 LB/FT, N-80 & K-55 CASING SET AT 8699'
CEMENTED WITH 1200 SXS. CLASS 'H'
CEMENT CIRCULATED
7-7/8' HOLE

PSTD 8645'
TD 8700'

MOBIL EXPLORATION & PRODUCING U.S., INC.
PRESENT COMPLETION

LEASE & WELL NO.		NORTH VACUUM ABO UNIT #237	
LOCATION		530' FNL & 660' FEL. SECT 26 T17S R34E	
COUNTY	LEA	STATE	NEW MEXICO
APL #	300252831760	PERM ID	
DATE	17 FEBRUARY 1995	DRILL BY	C.M. JONES

WELL HISTORY
North Vacuum Abo Unit #237

12-30-83 Well completed. Perf Abo 1 JSPF 8540-43, 49-52, 8562-65, 71-73, 76-84' 24 holes. Spot 1000 gal 15% over perfs, acidized w/spot acid + 36 RCBS. 4.9 BPM, TTP = 2800-4900 psi. Swab 32 BO/8 BW 8 hrs. Reacidized w/4800 gal 15% + 48 RCBS, 5 BPM, 2500-4500 psi. Add perfs 1 JSPF 8425-30, 8460-62, 82-91' 19 holes. Spot 100 gal 15% across 8420-8520', pumped into form 4.5 BPM, 4100-4600 psi. O G W
NMOCD Pot: P 178/139/91
(NOTE: Geol report rec 2 JSPF)

1-22-85 Acidized Abo 8425-8584' w/2000 gal 15% + 2 drums TH 756 scale inhibitor, 3 BPM, 0 psi.
Before: P 58/40 After: P 66/79

3-15-90 *✓* *✓* *✓*
Add Abo 8402-12, 22-25, report 25-30, 34-60, report 60-62 62-82.
1120' 8482-91, 91-95' 2525. Acid w/1000 gal 15% + 7000 gal x-linked
15% + 1.3 Spgr 2000. Minor bull action. AIR = 5.3 BPM. 1620-2900 psi TH.
Install 5100' 1 1/8" Glass rods + 1675' steel (1") + 1675' steel (1 1/8") +
1 1/4 pump. (had 1800' FL)
B: 65/42/100 A: 103/40/280

Well:	NVAU #238A
Location:	SECT. 24 - T17S-R34e
Date Drilled:	9/18/83
TD:	8,700'
PBTD:	8,651'

Current status:	Abo Producer - Oil
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Completion history:	See attached
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Well Construction:	See attached
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G.L. 4000'
K.B. 4010'
ZERO 10' AGL



13-3/8", 48 LB/FT, H-40 CASING SET AT 400'
CEMENTED WITH 400 SXS. CLASS 'C'
CEMENT CIRCULATED
17-1/2" HOLE

BOT TYPE 'C' LINER HANGER AT 4203'

8-5/8", 32 LB/FT, S-80 & K-55 CASING SET AT 5000'
CEMENTED WITH 3300 SXS. CLASS 'C'
CEMENT CIRCULATED
12-1/4" HOLE

2-7/8", 6.5 LB/FT, J-55 TUBING
SN # 8594'

5-1/2" TAC AT 8279'

ABO PERFS:
8459'-79', 8467'-79', 8530'-36' WITH 1 JSPF (26 HOLES)

64

5-1/2", 15.5 & 17 LB/FT, N-80 & K-55 CASING SET AT 8700'
CEMENTED WITH 1200 SXS. CLASS 'H'
CEMENT CIRCULATED
7-7/8" HOLE

PBTD 8651'
TD 8700'

MOBIL EXPLORATION & PRODUCING U.S., INC.
PRESENT COMPLETION

LEASE & WELL NO.		NORTH VACUUM ABO UNIT #238-A	
LOCATION		780' FWL & 643' FSL. SECT 24 T17S R34E	
COUNTY		LEA	NEW MEXICO
APR #		300252846600	PROD #
DATE		17 FEBRUARY 1995	DRILLER
			C.M. JONES

NVAU #238 COMPLETION HISTORY
(& 238A)

9/18/83	Spud well as 238
10/8/83	Drilling ceased @ 5000 ft., due to 8 5/8" csg. failure @ +/-3700 ft. – well plugged
10/9/83	Spud 238A
11/5/83	T.D.'d hole @ 8700 ft.
11/9/83	Perf and acidize Abo 1spf 8530'-36' Total of 7 shots 2,000 gals – 15% HCl w/ 14 ball sealers – balled out @1750 gals.
11/28/83	Perf and acidize Abo 1spf 8459'-8464', 8467'-8479' Total of 19 shots 35 gals – 15% HCl per perf with PPI pkr. Followed with 5865 gals 15% HCl & 42 ball sealers – balled out after 3900 gals, and 30 balls
3/24/85	Scale Job: Acidize 1,000 gals. – 15% HCl – w/52 ball sealers, followed by 1000 gals. 15% HCl

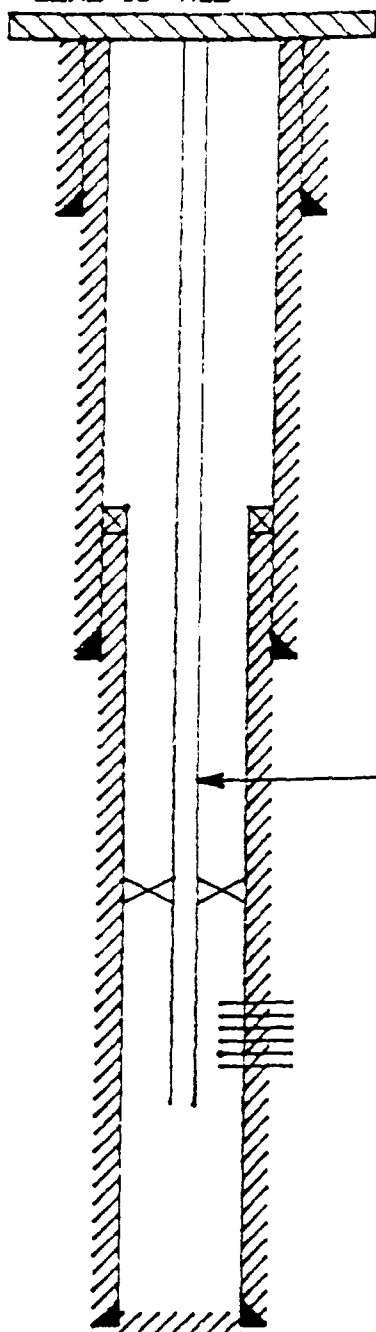
Well:	NVAU #242
Location:	SECT. 26 - T17s-R34e
Date Drilled:	6/6/84
TD:	8,700'
PBTD:	8,655'

Current status:	Abo Producer - Oil
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Completion history:	See attached
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Well Construction:	See attached
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G.L. 4019'
K.B. 4035'
ZERO 16' AGL



13-3/8", 48 LB/FT, H-40 CASING SET AT 400'
CEMENTED WITH 400 SXS. CLASS 'C'
CEMENT CIRCULATED
17-1/2" HOLE

BOT TYPE 'C' LINER HANGER AT 4186'

8-5/8", 32 LB/FT, S-80 & K-55 CASING SET AT 5000'
CEMENTED WITH 3400 SXS. CLASS 'C'
CEMENT CIRCULATED
12-1/4" HOLE

2-7/8" TUBING
SN # 8607'

5-1/2" TAC AT 8297'

ABO PERFS:
8472'-75', 8488'-94', 8503'-06', 8564'-67', 8510'-14',
8600'-08' WITH 1 JSPF (33 HOLES)

5-1/2", 15.5 & 17 LB/FT, K-55 CASING SET AT 8699'
CEMENTED WITH 1030 SXS. CLASS 'H'
CEMENT CIRCULATED
7-7/8" HOLE

PBTD 8655'
TD 8700'

MOBIL EXPLORATION & PRODUCING U.S., INC.
PRESENT COMPLETION

LEASE & WELL REG		NORTH VACUUM ABO UNIT #242	
LOCATION		1809' FNL & 1890' FEL SECT 26 T17S R34E	
COUNTY	LEA	STATE	NEW MEXICO
API #	3002528602	WELL ID	
DATE	17 FEBRUARY 1995	DRILLER	C.M. JONES

NVAU #242 COMPLETION HISTORY

6/6/84 Spud

7/27/84 Perf and acidize Abo
 1spf 8564'-67', & 8600'-8608'
 Total of 13 shots
 2,900 gals – 15% HCl w/ 26 ball sealers – balled out.

7/31/84 Perf and acidize Abo
 1spf 8472'-8475', 8488'-8494', 8503'-8506', 8510'-8514'
 Total of 20 shots
 7100 gals – 15% HCl & 49 ball sealers – good ball action

7/15/91 Frac Abo:
 Screened out @ 26,880 gal & 30,000 lbs. 20/40 sand.

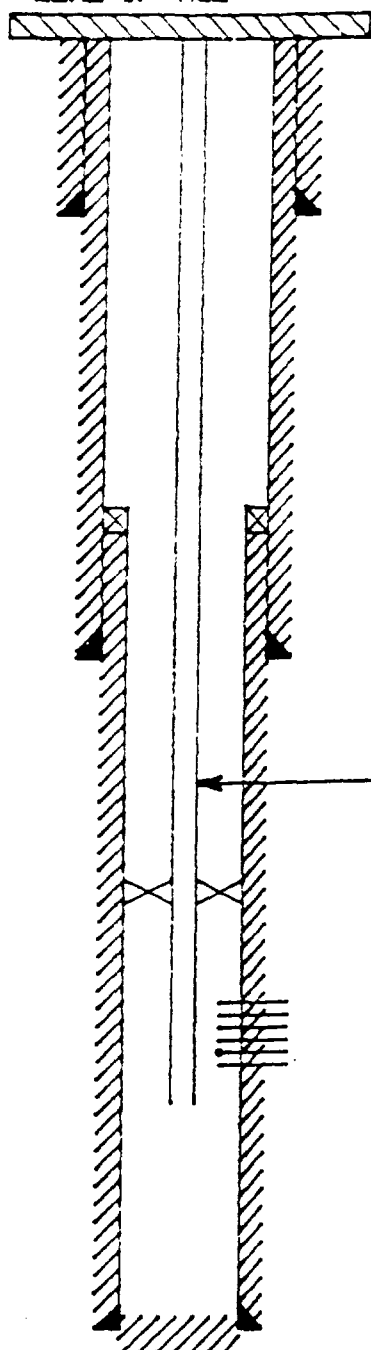
Well: NVAU #243
Location: SECT. 26 - T17s-R34e
Date Drilled: 3/10/84
TD: 8.700'
PBTD: 8.695'

Current status: Abo Producer - Oil

Completion history: See attached

Well Construction: See attached

G.L. 4000'
K.B. 4017'
ZERO 17' AGL



13-3/8", 48 LB/FT, H-40 CASING SET AT 400'
CEMENTED WITH 400 SXS. CLASS 'C'
CEMENT CIRCULATED
17-1/2" HOLE

BOT TYPE 'C' LINER HANGER AT 4153'

8-5/8", 32 LB/FT, S-80 & K-55 CASING SET AT 5000'
CEMENTED WITH 2600 SXS. CLASS 'C'
CEMENT CIRCULATED
12-1/4" HOLE

2-7/8" TUBING
SN @ 8674'

5-1/2" TAC AT 8367'

ABO PERFS:
8494'-8508', 8524'-28', 8531'-37', 8550'-52', 8554'-57',
8559'-66', 8574'-76', 8622'-25', 8646'-50', 8668'-72'
WITH 1 JSPF (59 HOLES)

5-1/2", 15.5 & 17 LB/FT, K-55 CASING SET AT 8699'
CEMENTED WITH 925 SXS. CLASS 'H'
CEMENT CIRCULATED
7-7/8" HOLE

PBTD 8695'
TD 8700'

MOBIL EXPLORATION & PRODUCING U.S., INC.
PRESENT COMPLETION

LEASE & WELL NO.		NORTH VACUUM ABO UNIT #243	
LOCATION		657' FNL & 1839' FWL SECT 26 T17S R34E	
COUNTY		LEA	NEW MEXICO
APR. #		300252858600	FROM 25
DATE		17 FEBRUARY 1995	BY C.M. JONES

NVAU #243 COMPLETION HISTORY

3/10/84	Spud well
4/24/84	Perf and acidize lspf 8622'-8625', 8646'-8650', 8668'-8672' Total of 14 shots 3,500 gal – 15% HCl w/ 28 ball sealers
4/30/84	Perf and acidize lspf 8494'-8508', 8534'-8528', 8531'-8537', 8550'-8552', 8554'-8557', 8559'-8566' Total of 45 shots 1,900 gal – 15% HCl w/68 ball sealers – balled out
5/3/84	Acidize 9,000 gal – 15% HCl w/ 62 ball sealers – balled out
7/9/91	Frac procedure written Frac apparently not performed

Well: NVAU #244H
Location: SECT. 23 -T17S-R34e
Date Drilled: 4/3/84
TD: 3,700' / 3,163'
PBD: 3,650' / 3,153'
Horizontal lateral: Date Drilled:
TVD:
MD:
VS:
Azimuth:

Current status: Abo Horizontal Producer - Oil

Completion history: See attached

Well Construction: See attached

**NVAU 244
Vacuum Field
Lea County, New Mexico**

ypo: 08/12/97

Spud: 04/03/71

Current Configuration

13 3/8" 48#-140 csg @ 422'
w/ 400 sx Cement Circulated

TOL@4175"

8 5/8" 32# K55csg @ 4350"
8 5/8" 32# S80 4350' - 5000'
w/ 2500 sx Cement Circulated

Curve
MD: 8250' - 8781'
TVD: 8249' - 8512'
Incl: 0 deg - 87.2 deg

KOP @ 8250'

CIBP top @ 8256'

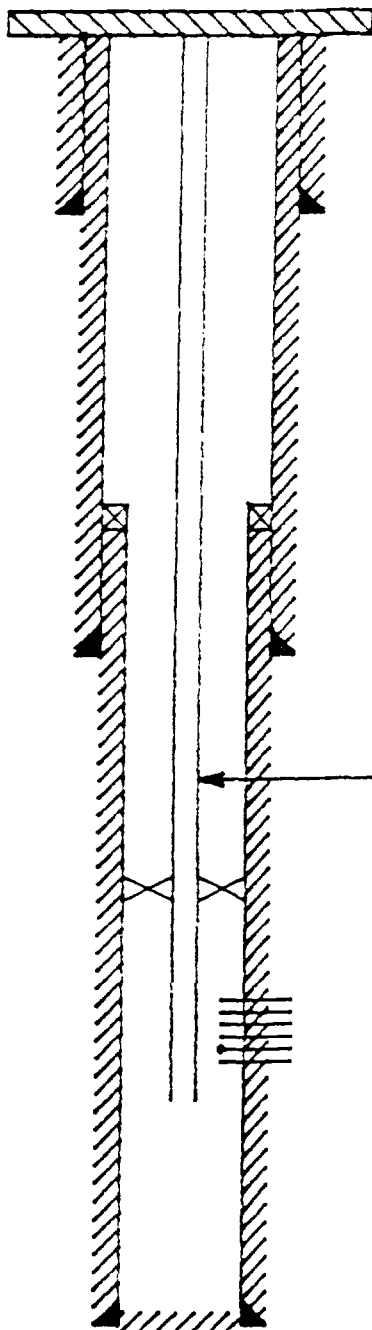
Lateral
MD: 8781' - 9188'
TVD: 8249' - 8565'
Incl: 86.0 deg

5-1/2" 17#15.5# K55N80 @ 8700'
w/ 1000 sx' to TOL

- Abo perfs: 8470' - 8608' O/A

10-16-78

G.L. 4000'
K.B. 4017'
ZERO 17' AGL



13-3/8", 48 LB/FT, H-40 CASING SET AT 422'
CEMENTED WITH 400 SXS. CLASS 'C'
CEMENT CIRCULATED
17-1/2" HOLE

BOT TYPE 'C' LINER HANGER AT 4175'

8-5/8", 32 LB/FT, S-80 & K-55 CASING SET AT 5000'
CEMENTED WITH 2500 SXS. CLASS 'C'
CEMENT CIRCULATED
12-1/4" HOLE

2-7/8" TUBING
SN # 8615'

5-1/2" TAC AT 8296'

ABO PERFS:
8470'-84', 8490'-92', 8508'-12', 8514'-17',
8523'-31', 8544'-47', 8556'-61', 8582'-85',
8606'-08', W 1 JSPF (53 HOLES)

5-1/2", 15.5 & 17 LB/FT, K-55 CASING SET AT 8699'
CEMENTED WITH 1000 SXS. CLASS 'H'
CEMENT CIRCULATED
7-7/8" HOLE

PBTD 8650'
TD 8700'

MOBIL EXPLORATION & PRODUCING U.S., INC.
PRESENT COMPLETION

LEASE & WELL NO.		NORTH VACUUM ABO UNIT #244	
LOCATION		589' FSL & 1859' FEL. SECT 23 T17S R34E	
COUNTY	LEA	STATE	NEW MEXICO
API #	300252860300	FROM IS	
DATE	17 FEBRUARY 1995	WORK BY	C.M. JONES

NVAU #244 COMPLETION HISTORY

4/3/84 Spud well

5/7/84 Perf and acidize
1 spf 8544'-8547', 8556'-8561', 8582'-8585', 8606'-8608'
Total of 18 shots
3,600 gal - 15% HCl w/36 ball sealers - balled out

5/9/84 Perf and acidize
1 spf 8470'-8484', 8490'-8492', 8508'-8512', 8514'-8517', 8523'-8531'
Total of 36 shots
1,500 gal - 15% HCl w/15 ball sealers

5/12/84 Acidize
7,500 gal - 15% HCl - w/62 ball sealers

8/3/97 Spud horizontal lateral
Kickoff at 8250'

8/22/97 TD horizontal lateral
MD=9188' TVD=8566' VS=820' AZM=317°
INCL=86°

9/5/97 Acidize
Jet washed w/7,300 gal - 20% HCl

10/31/97 Acid frac
50,000 gal -20%HCl and 50,000 gal FW gel. Pumped 5 stages of 10 kgal acid
and 10 kgal gel

Sperry-Sun Drilling Services

Survey Report for NV ABO Unit #244 - Open Hole Sdetrack

Data Source: MWD Surveys



Mobil Exploration
Vacuum Field (PAWC)

Lea County
Sec. 23-T17S-R34E

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
8285.00	12.100	299.006	8283.70	23.03 N	20.24 W	30.64	
8314.00	20.000	302.106	8311.55	27.15 N	27.11 W	38.35	27.392
8346.00	20.300	304.006	8341.59	33.16 N	36.34 W	49.06	2.250
8377.00	28.700	305.606	8369.77	40.51 N	46.87 W	61.64	27.179
8408.00	37.600	303.206	8395.70	50.05 N	60.87 W	78.18	29.015
8439.00	45.200	309.306	8418.95	62.22 N	77.32 W	98.32	27.732
8471.00	49.700	313.406	8440.59	77.80 N	94.98 W	121.78	16.931
8502.00	56.100	317.106	8459.28	95.38 N	112.35 W	146.48	22.728
8533.00	64.000	318.406	8474.74	115.25 N	130.38 W	173.31	25.741
8564.00	70.300	320.106	8486.78	136.89 N	149.01 W	201.83	20.941
8595.00	76.600	320.306	8495.60	159.71 N	168.02 W	231.48	20.332
8626.00	84.200	318.806	8500.77	182.95 N	187.84 W	261.98	24.975
8657.00	85.100	320.006	8503.66	206.39 N	207.92 W	292.81	4.825
8688.00	85.600	320.306	8506.17	230.11 N	227.72 W	323.65	1.879
8719.00	85.200	319.406	8508.66	253.73 N	247.64 W	354.50	3.169
8750.00	86.000	316.706	8511.04	276.72 N	268.29 W	385.40	9.059
8781.00	87.200	318.906	8512.88	299.64 N	289.08 W	416.33	8.073
8812.00	85.900	317.006	8514.74	322.62 N	309.80 W	447.27	7.417
8842.00	84.300	318.006	8517.30	344.66 N	329.99 W	477.15	6.283
8873.00	85.700	317.006	8520.01	367.43 N	350.85 W	508.03	5.543
8906.00	84.000	317.506	8522.97	391.57 N	373.16 W	540.89	5.368
8923.00	81.700	316.506	8525.08	403.90 N	384.66 W	557.76	14.735
8936.00	81.200	315.806	8527.02	413.18 N	393.56 W	570.61	6.569
8957.00	80.900	316.906	8530.28	428.19 N	407.88 W	591.36	5.368
8967.00	79.400	317.906	8531.99	435.44 N	414.55 W	601.21	17.946
8998.00	78.900	317.006	8537.83	457.87 N	435.13 W	631.65	3.276
9029.00	80.600	317.106	8543.35	480.20 N	455.91 W	662.15	5.493
9060.00	80.700	317.006	8548.38	502.59 N	476.75 W	692.74	0.453
9076.00	79.500	316.706	8551.13	514.09 N	487.53 W	708.50	7.724
9092.00	80.100	317.506	8553.97	525.63 N	498.25 W	724.25	6.187
9123.00	82.200	317.506	8558.74	548.21 N	518.94 W	754.87	6.774
9136.00	83.000	316.306	8560.41	557.63 N	527.75 W	767.77	11.030
9154.00	83.700	318.406	8562.50	570.78 N	539.86 W	785.64	12.223
9188.00	86.000	317.006	8565.55	595.82 N	562.64 W	819.50	7.911

All data is in feet unless otherwise stated. Directions and coordinates are relative to True North.
Vertical depths are relative to RKB. Northings and Eastings are relative to 589' FSL & 1859' FEL.

The Dogleg Severity is in Degrees per 100ft.

Vertical Section is from 589' FSL & 1859' FEL and calculated along an Azimuth of 316.640° (True).

Based upon Minimum Curvature type calculations, at a Measured Depth of 9188.00ft.,

The Bottom Hole Displacement is 819.50ft., in the Direction of 316.640° (True).

Continued...

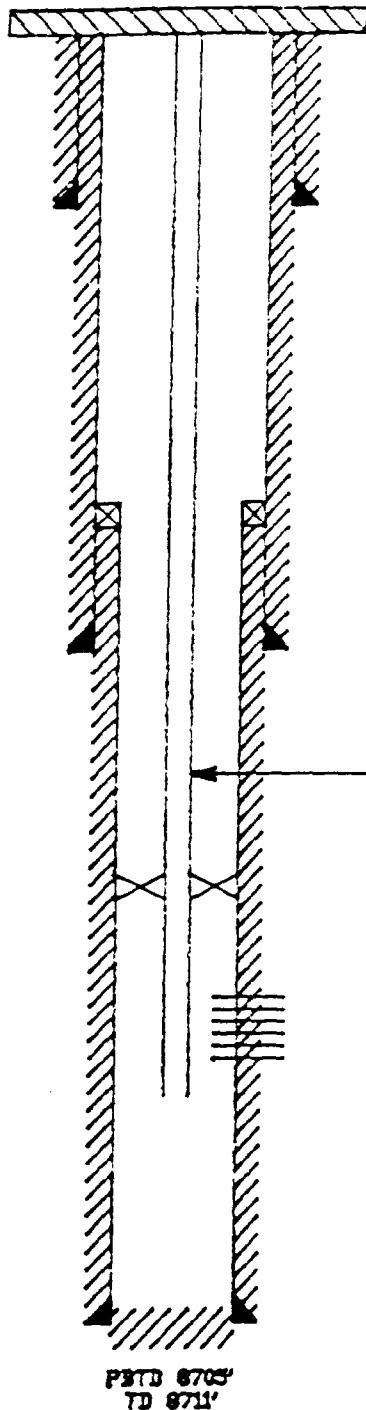
Well:	NVAU #245
Location:	SECT. 23 - T17S-R34e
Date Drilled:	4/30/84
TD:	8,711'
PBTD:	8,705'

Current status:	Abo Producer - Oil
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Completion history:	See attached
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Well Construction:	See attached
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GL 4027'
K.C. 4042'
ZERO 13' AGL



13-3/8", 48 LB/FT, H-40 CASING SET AT 402'
CEMENTED WITH 400 SXS. CLASS 'C'
CEMENT CIRCULATED
17-1/2" HOLE

ROT TYPE 'C' LINER HANGER AT 4185'

8-5/8", 22 LB/FT, K-55 & S-80 CASING SET AT 5000'
CEMENTED WITH 2400 SXS. CLASS 'C'
TOP OF CEMENT AT 965' (TEMP SURVEY)
SECT. 13-3/8" X 8-5/8" ANNULUS WITH 600 SXS. CLASS 'C'
12-1/4" HOLE

2-7/8" TUBING
SN # 8686'

5-1/2" TAC AT 8475'

ABO PERFS:
8549'-51', 8576'-78', 8581'-84', 8595'-98',
8627'-29', 8655'-57', 8681'-84' WITH 1 JSF (24 HOLES)

5-1/2", 15.5 & 17 LB/FT, K-55 CASING SET AT 8710'
CEMENTED WITH 1050 SXS. CLASS 'H'
CEMENT CIRCULATED
7-7/8" HOLE

PSTO 8705'
TD 8711'

MOBIL EXPLORATION & PRODUCING U.S., INC.
PRESENT COMPLETION

WELL NAME		NORTH VACUUM ABO UNIT #245	
LOCATION		1930' FSL & 2174' FWL 23-T17S-R34E	
COUNTY		LEA	NEW MEXICO
WELL NO.		300252860300	WELL ID
DATE		17 FEBRUARY 1995	DRILLER
			C.M. JONES

NVAU #245 COMPLETION HISTORY

4/30/84 Spud well

6/1/84 Perf and acidize

1spf 8549'-8551', 8576'-8578', 8581'-8584', 8595'-8598', 8627'-8629',
8655'-8657', 8581'-8584'

Total of 24 shots

1,600 gal – 15% HCl w/38 ball sealers – balled out with 24 balls and 1350 gal
on formation surged balls of and finished job

6/5/84 Acidize

5,000 gal – 15% HCl

8/3/94 Perf and acidize

4 spf 8504'-8514', 8523'-8528', 8547'-8552', 8575'-8585', 8592'-8599',
8605'-8609', 8614'-8632', 8652'-8659', 8660'-8688'

Total of 305 shots

7,000 gal – 15% HCl w/375 ball sealers – no apparent ball action

Well:	NVAU #248
Location:	SECT. 24 - T17s-R34e
Date Drilled:	4/24/84
TD:	8,700'
PBTD:	8,683'

Current status:	Abo Producer - Oil
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Completion history:	See attached
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Well Construction:	See attached
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DATE 11-27-84 WELL NO. CTC LEASE North Vacuum North
Abo Unit
 LOCATION 2100' FNL & 659' FWL SIGNED R. W. Petty G.L. 4009'
Sec. 24, T17S, R34E D.F. 4023
Lea County, New Mexico K.B. 4024
 ZERO 15' AGL

— 17 1/2" hole

— 13 3/8", 48#, H40, STFC set @ 400' w/400 sk Cl. C cmt;
 2% CaCl₂, 1/4 #/sk FC. Circ 75 sk cmt.

— 12 1/4" hole

— TOL @ 4020'
 — 8 5/8", 32#, S80# K55, STFC set @ 5000' w/4175 sk Cl. C cmt;
 4% gel, 15 #/sk Salt, 5 #/sk gilsonite; 1/4 #/sk FC + 300 sk Cl. C cmt;
 2% CaCl₂ + 1/4 #/sk FC. Did not circ. Toc @ 1260' temp surv. Cmt
 695' to surf w/1" w/500 sk Cl. C cmt.

— 7 7/8" hole

— 2 7/8" tbg: OPMA @ 8650' + 4' perf sub + 2 3/8 SN + 2 7/8 SN @ 8625'
 TAC @ 8439' set w/12,000# Ten.

— Abo Perfs: 8485'-87', 91'-95', 8502'-04', 07'-09'. 1 JS PF. 14 holes.

— 5 1/2", 17# & 15.5#, K55, STFC set @ 8696' w/850 sk Cl. H cmt, 4% ga!
 .3% HA9, 1/4 #/sk FC + 300 sk Cl. H cmt, .3% HA9, 1/4 #/sk FC.
 PBTD 8683'
 TD 8700'

NVAU #248 COMPLETION HISTORY

4/24/84 Spud well

6/1/84 Perf and acidize

1spf 8485'-8487', 8491'-8495', 8502'-8504', 8507'-8509'

Total of 14 shots

5,000 gal – 15% HCl w/21 ball sealers – balled out with 15 balls and 3,125 gals
on formation, surged, pumped rest of acid away

3/12/85 Acidize for CaCO₃ scale

1,000 gal – 15% HCl and 110 gal Tretolite 260E scale inhibitor

Well:	NVAU #249
Location:	SECT. 26 - T17s-R34e
Date Drilled:	7/4/84
TD:	8.720'
PBTD:	8.710'

Current status:	Abo Producer - Oil
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Completion history:	See attached
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Well Construction:	See attached
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GL. 4033'
K.B. 4051'
ZERO 18' AGL



13-3/8", 48 LB/FT, H-40 CASING SET AT 400'
CEMENTED WITH 400 SXS. CLASS 'C'
CEMENT CIRCULATED
17-1/2" HOLE

BOT TYPE 'C' LINER HANGER AT 4154'

8-5/8", 32 LB/FT, S-80 & K-55 CASING SET AT 5000'
CEMENTED WITH 2800 SXS. CLASS 'C'
CEMENT CIRCULATED
12-1/4" HOLE

2-7/8" TUBING
SN # 8672'

5-1/2" TAC AT 8432'

ABO PERFS:
8520'-30', 8534'-44', 8545'-54', 8582'-89',
8595'-8602', 8608'-10', 8633'-48' WITH 1 JSPF (68 HOLES)
8678'-81' WITH 2 JSPF (8 HOLES)

5-1/2", 15.5 & 17 LB/FT, K-55 CASING SET AT 8719'
CEMENTED WITH 1100 SXS. CLASS 'H'
CEMENT CIRCULATED
7-7/8" HOLE

PBD 8710'
TD 8720'

MOBIL EXPLORATION & PRODUCING U.S., INC.
PRESENT COMPLETION

LEA'S WELL NO.	
NORTH VACUUM ABO UNIT #249	
LOCATION	
1850' FNL & 660' FWL 26-T17S-R34E	
COUNTY	STATE
LEA	NEW MEXICO
WELL NO.	WELL NO.
300252872200	
DATE	DRILLER
17 FEBRUARY 1995	C.M. JONES

WELL DATA

PA

LEASE North Vacuum Abo Unit WELL NO. 249INITIAL COMPLETION DATE: 8/17/84 TD 8720' PBTD 8710'CURRENT COMPLETION DATE: 8/17/84 CURRENT PBTD 8710'CURRENT PRODUCING INTERVAL(S): 8534'-8589' 8608'-8610' 8678'-8681'

CURRENT TESTS:

DATE	12/2/86	2/24/87	3/19/87
METHOD(F,P,GL)	P	P	P
BOPD/BWPD	35/31	38/32	39/41
MCF/D(FORM.)	NA	NA	NA

OFFSET WELL TESTS IN ZONE OF INTEREST

COMPANY	MPTM	MPTM	MPTM
LEASE & WELL NO.	NVAU #243	NVAU #276	NVAU #277
DATE	3/11/87	3/17/87	3/18/87
METHOD(F,P,GL)	P	P	P
BOPD/BWPD	54/95	45/17	116/4
MCF/D	NA	NA	NA

WELL HISTORY

REMARKS: (INCLUDE DATA PERTINENT TO W/O, SQZD. PFS, ETC.)

7/4/84 Spud
7/30/84 Core Abo 8584'-8676'
8/17/84 Perf. Abo 8678'-8681' & Acidize w/2000 gal.
8/18/84 FL 10 RNO/95 min, Perf. Abo 8534'-8544';
8550'-8554', 8582'-8589', 8608'-8610', total 27 holes
8/19/84 Acidized Abo Perfs. 8534'-8610' w/5600 gal. of
15% NEFF HCL + 40 RCNBL, TTP 2000-5000 psi,
Ball out @ 5400 psi, AIR 5.8 BPM, ISIP=3000 psi
8/29/84 NMOC POT P 173 BNO + 86 BSW/24 hrs GOR=1156/
5/87 Add Perfs and Acidize w/10,000 gals of 15% NEFF
Before: 40/46 After: 45/84

D.A. Howell

4-28-87

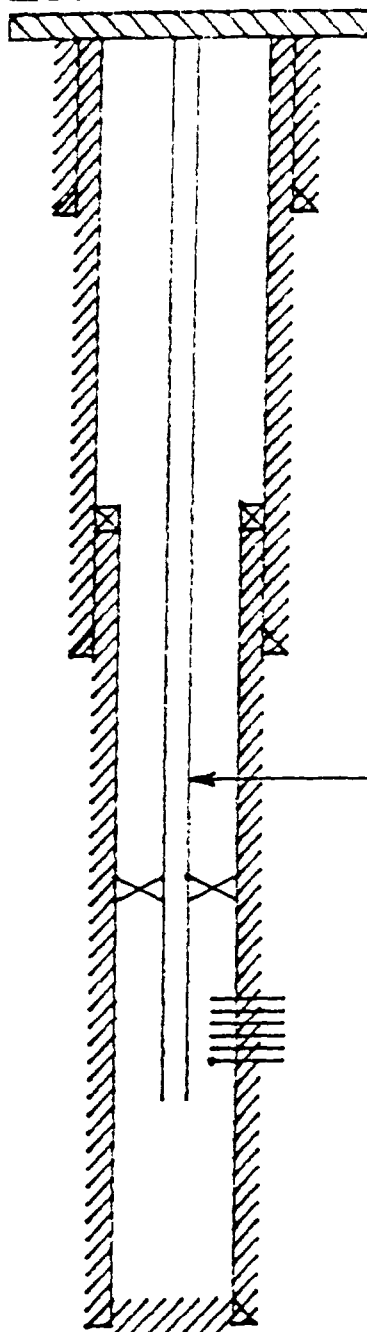
Well:	NVAU #277
Location:	SECT. 27 - T17s-R34e
Date Drilled:	6/5/85
TD:	8.800'
PBTD:	8.712'

Current status:	Abo Producer - Oil
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Completion history:	See attached
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Well Construction:	See attached
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GL 4054'
K.B. 4037'
ZERO 17' AGL



13-3/8", 48 LB/FT, H-40 CASING SET AT 400'
CEMENTED WITH 500 SCS CLASS 'C'
CEMENT CIRCULATED
17-1/2" HOLE

30T TYPE 'C' LINER HANGER AT 4173'

8-5/8", 28 & 32 LB/FT, S-80 CASING SET AT 5000'
CEMENTED WITH 2500 SCS CLASS 'C'
TOP OF CEMENT AT 1715'
12-1/4" HOLE

282 JTS, 2-7/8", 6.5 LB/FT, J-55 TUBING
SN 2 8601'

5-1/2" TAC AT 8418'

ABO PERFS

8548'-64' (65 HOLES)	4 SPS
8570'-80' (41 HOLES)	4 SPS
8583'-8616' (67 HOLES)	2 SPS
8626'-44' (17 HOLES)	2 SPS
8650'-58' (33 HOLES)	4 SPS
8664'-78' (43 HOLES)	4 SPS
8680'-85' (21 HOLES)	9 SPS
TOTAL 101' NET PAY (309 HOLES)	

5-1/2", 15.5 & 17 LB/FT, K-55 CASING SET AT 8711'
CEMENTED WITH 1220 SCS CLASS 'H'
CEMENT CIRCULATED
7-7/8" HOLE

PSTD 8712'
TD 8800'

MOBIL EXPLORATION & PRODUCING U.S., INC.
PRESENT COMPLETION

LEA & WELL NO		NORTH VACUUM ABO UNIT #277	
LOCATION		790' FNL & 650' FVL Sect 27 T17S R34E	
COUNTY	LEA	STATE	NEW MEXICO
API NO	30-025-29234	PROD NO	0009025
DATE	17 FEBRUARY 1995	DRILLER	C.M. JONES

NVAU #277 COMPLETION HISTORY

6/5/85 Spud well

7/13/85 Perf and acidize
1 spr 8583'-8600', 8606'-8609', 8626'-8644'
Total of 41 shots
10.250 gal - 15% HCl w/72 ball sealers - balled out

9/7/94 Perf and acidize
4 spf 8548'-8580, 8650'-8685'
2 spf 8583'-8644'
Total of 400 shots
7,000 gal - 15% HCl w/ 375 ball sealers

Well:	NVAU #278H
Location:	SECT. 23 - T17s-R34e
Date Drilled:	6/28/85
TD:	8,800' / 9,757'
PBTD:	8,701' / 9,757'
Horizontal lateral:	Date Drilled:
	TVD:
	MD:
	VS:
	Azimuth:
Current status:	Abo Horizontal Producer - Oil
Completion history:	See attached
Well Construction:	See attached

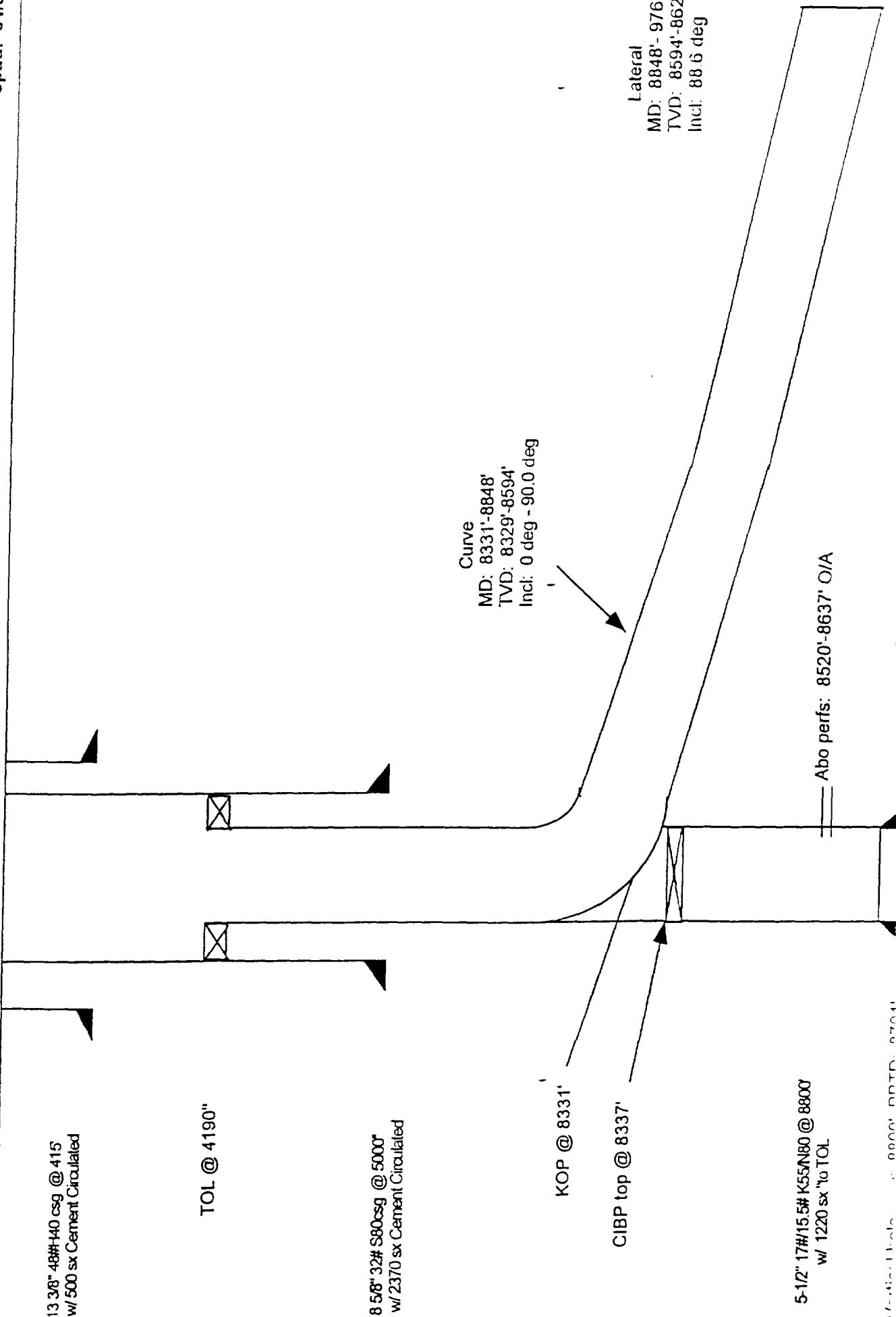
500' FSL
650' FWL
S-23
T17S
R34E
KB: 4046.5'
GL: 4029.0'

NVAU 278
Vacuum Field
Lea County, New Mexico

ypo: 08/12/97

Spud: 04/03/71

Current Configuration



13 3/8\" 48#H40 csg @ 415'
w/ 500 sx Cement Circulated

TOL @ 4190"

8 5/8\" 32# S80csg @ 5000'
w/ 2370 sx Cement Circulated

Curve
MD: 8331'-8848'
TVD: 8329'-8594'
Incl: 0 deg - 90.0 deg

KOP @ 8331'

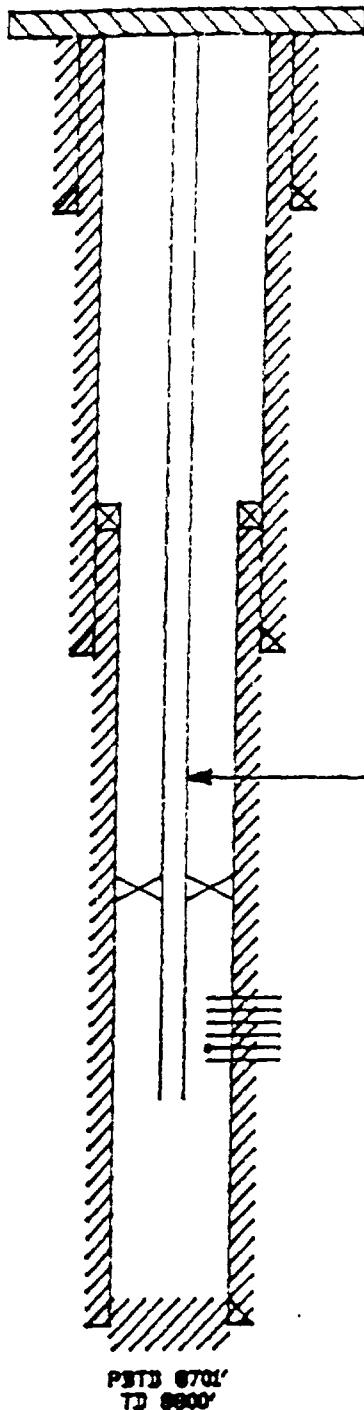
CIBP top @ 8337'

Lateral
MD: 8848'-9769'
TVD: 8594'-8627'
Incl: 88.6 deg

Abo perms: 8520'-8637' O/A

5-1/2\" 17#15.5# K55N80 @ 8800'
w/ 1220 sx "to TOL

EL 4029'
K.B. 4046'
ZERO 17' AGL



13-3/8", 48 LB/FT, H-40 CASING SET AT 415'
CEMENTED WITH 500 SCS. CLASS 'C'
CEMENT CIRCULATED
17-1/2" HOLE

NOT TYPE 'C' LINER HANGER AT 4190'

8-5/8", 32 LB/FT, S-80 CASING SET AT 5000'
CEMENTED WITH 2670 SCS. CLASS 'C' + 100 SCS. THIXOTROPIC
CEMENT CIRCULATED
12-1/4" HOLE

293 JTS. 2-7/8", 6.5 LB/FT, J-55 TUBING
SN # 8626'

5-1/2" TAC AT 8378'

AND PERFS:
8549'-51', 8556'-66', 8568'-74', 8581'-8602',
8702'-12" WITH 1 JSPP (50 HOLES)
8580'-44', 8624'-30', 8632'-37' WITH 4 JSPP +
8546'-73', 8581'-8602', 8604'-20" WITH 2 JSPP (278 HOLES)

5-1/2", 15.5 & 17 LB/FT, K-55 CASING SET AT 8800'
CEMENTED WITH 1220 SCS. CLASS 'H'
CEMENT CIRCULATED
7-7/8" HOLE

MOBIL EXPLORATION & PRODUCING U.S. INC.
PRESENT COMPLETION

WELL NAME		NORTH VACUUM ABO UNIT #278	
LOCATION		500 FSL & 650 FWL SECT 23 T17S R34E	
COUNTY		LEA	NEW MEXICO
WELL NO.		300252923500	WELL TYPE
DATE		17 FEBRUARY 1995	DRILLER
			C.M. JONES

NVAU #278 COMPLETION HISTORY

6/28/85	Spud well
8/8/85	Perf and acidize. 1spf 8549'-8551', 8556'-8566', 8568'-8574', 8581'-8602', 8606'-8612' total of 50 shots 12,700 gal – 15% HCl w/100 ball sealers – bailed out
9/13/94	Perf and acidize. 4spf 8520'-8544', 8624'-8630', 8632'-8637' 2spf 8546'-8575', 8581'-8602', 8604-8620' total of 278 shots 7,000 gal – 15% HCl w/375 ball sealers
7/14/97	Spud horizontal lateral kickoff at 8331'
8/2/97	TD horizontal lateral MD=9769' TVD=8627' VS=1138' AZM=228° INCL=88.6°
8/15/97	Acidize horizontal lateral. Jet washed w/5,400 gal – 20% HCl
12/18/97	Acid Frac 30,000 gal – 20% nitrogen foamed HCl of 55 to 60 quality

Sperry-Sun Drilling Services

Survey Report for NV ABO Unit #278 - SSDS MWD

Data Source: Actual Field Surveys



Mobil Exploration
Vacuum Field (PA/WC)

Lea County
Sec. 23-T17S-R34E

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
8300.00	1.620	103.250	8298.80	14.92 S	94.15 E	-51.91	
8384.00	20.600	212.301	8381.03	27.83 S	87.33 E	-37.75	25.216
8415.00	24.500	228.601	8409.69	36.71 S	79.59 E	-25.38	23.657
8446.00	33.800	224.401	8436.73	47.14 S	68.71 E	-10.94	30.700
8477.00	42.300	218.801	8461.13	61.46 S	56.11 E	8.13	29.570
8507.00	43.400	220.601	8483.12	77.16 S	43.08 E	28.51	5.486
8538.00	47.200	218.101	8504.93	94.20 S	29.12 E	50.52	13.530
8570.00	53.100	217.201	8525.42	113.65 S	14.13 E	75.00	18.563
8601.00	58.300	218.501	8542.89	133.85 S	1.59 W	100.53	17.128
8632.00	63.300	224.701	8558.02	154.04 S	19.56 W	127.57	23.759
8662.00	70.000	230.101	8569.91	172.64 S	39.84 W	154.95	27.773
8694.00	77.800	232.901	8578.78	191.75 S	63.89 W	185.25	25.781
8725.00	82.200	233.501	8584.16	210.04 S	88.33 W	215.19	14.321
8756.00	82.600	233.401	8588.26	228.33 S	113.01 W	245.30	1.329
8787.00	83.900	232.901	8591.93	246.79 S	137.54 W	275.50	4.189
8817.00	87.800	233.001	8594.13	264.82 S	161.52 W	304.87	13.337
8848.00	90.000	232.001	8594.72	283.68 S	186.10 W	335.35	7.795
8879.00	91.400	230.701	8594.34	303.04 S	210.31 W	365.93	6.163
8910.00	90.700	227.801	8593.77	323.27 S	233.79 W	396.67	9.622
8941.00	90.300	225.601	8593.50	344.53 S	256.35 W	427.57	7.213
8973.00	90.600	225.401	8593.25	366.96 S	279.17 W	459.51	1.127
9003.00	90.700	225.201	8592.91	388.06 S	300.50 W	489.45	0.745
9035.00	91.400	224.101	8592.33	410.82 S	322.98 W	521.41	4.074
9065.00	90.000	222.701	8591.96	432.61 S	343.59 W	551.40	6.599
9096.00	88.100	221.101	8592.47	455.68 S	364.29 W	582.39	8.012
9127.00	87.400	221.401	8593.69	478.97 S	384.71 W	613.37	2.456
9158.00	88.900	222.801	8594.69	501.96 S	405.49 W	644.35	6.617
9189.00	87.600	222.901	8595.64	524.67 S	426.56 W	675.33	4.206
9221.00	84.200	223.201	8597.92	547.99 S	448.34 W	707.24	10.666
9251.00	84.000	224.001	8601.01	569.60 S	468.92 W	737.07	2.735
9283.00	85.300	223.901	8603.99	592.54 S	491.04 W	768.91	4.074
9314.00	83.800	225.501	8606.94	614.47 S	512.74 W	799.73	7.058
9345.00	83.200	224.001	8610.45	636.35 S	534.43 W	830.50	5.183
9374.00	83.200	223.901	8613.88	657.08 S	554.41 W	859.28	0.342
9405.00	83.900	224.801	8617.36	679.10 S	575.94 W	890.05	3.663
9436.00	83.900	224.601	8620.66	701.01 S	597.53 W	920.84	0.642
9467.00	86.200	224.101	8623.33	723.10 S	619.21 W	951.70	7.591
9497.00	86.200	224.201	8625.32	744.57 S	640.06 W	981.51	0.333
9528.00	87.700	224.901	8626.97	766.63 S	661.78 W	1012.54	5.338
9558.00	89.300	226.601	8627.75	787.56 S	683.26 W	1042.46	7.780
9589.00	89.900	226.701	8627.97	808.84 S	705.80 W	1073.36	1.962
9620.00	90.700	227.901	8627.31	829.86 S	728.59 W	1104.22	4.652
9651.00	90.700	226.901	8627.43	850.84 S	751.40 W	1135.08	3.226
9682.00	90.800	227.401	8627.02	871.92 S	774.13 W	1165.96	1.645
9713.00	89.600	227.101	8626.92	892.96 S	796.89 W	1196.83	3.990

Continued...

Sperry-Sun Drilling Services

Survey Report for NV ABO Unit #278 - SSDS MWD

Data Source: Actual Field Surveys



Mobil Exploration
Vacuum Field (PAWC)

Lea County
Sec. 23-T17S-R34E

Measured Depth (ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
9736.00	89.300	227.401	8627.14	908.57 S	813.78 W	1219.73	1.845
9769.00	88.640	227.701	8627.73	930.84 S	838.13 W	1252.57	2.197

All data is in feet unless otherwise stated. Directions and coordinates are relative to True North.
Vertical depths are relative to RKB. Northings and Eastings are relative to 500' FSL & 650' FWL.

The Dogleg Severity is in Degrees per 100ft.

Vertical Section is from 500' FSL & 650' FWL and calculated along an Azimuth of 222.000° (True).

Based upon Minimum Curvature type calculations, at a Measured Depth of 9769.00ft.,
The Bottom Hole Displacement is 1252.57ft., in the Direction of 222.000° (True).

Casing details

From		To		Casing Detail
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	
<Surface>	<Surface>	415.00	415.00	13 3/8" Casing
<Surface>	<Surface>	5000.00	4999.89	8 5/8" Casing
4190.00	4189.91	9769.00	8627.73	5 1/2" Casing

Survey tool program

From		To		Survey Tool Description
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	
0.00	0.00	9769.00	8627.73	Northseek Gyro

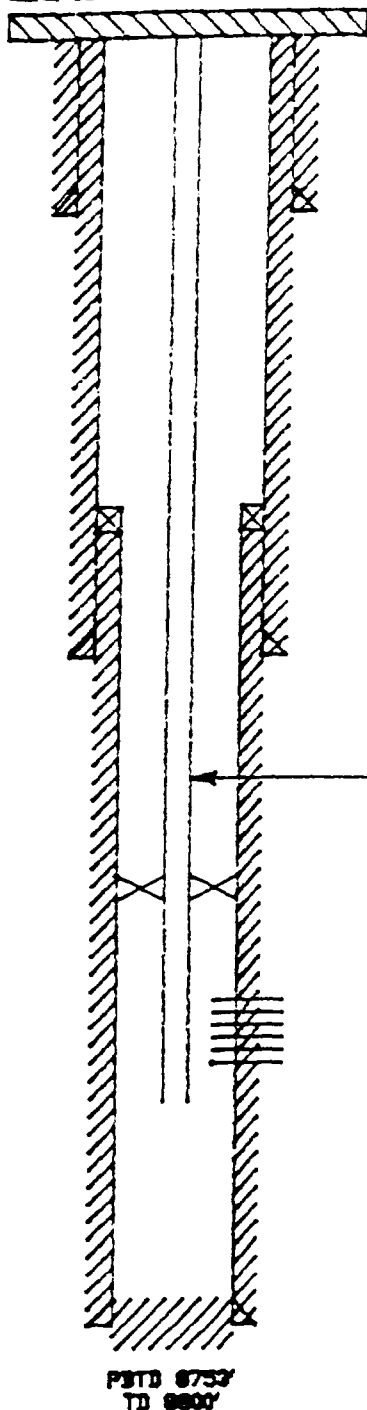
Well:	NVAU #280
Location:	SECT. 23 - T17s-R34e
Date Drilled:	8/16/85
TD:	8.800'
PBTD:	8.753'

Current status:	Abo Producer - Oil
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Completion history:	See attached
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Well Construction:	See attached
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GL 4029'
K.B. 4045'
ZERO 16' AGL



13-3/8", 48 LB/FT, H-40 CASING SET AT 417'
CEMENTED WITH 500 SXS. CLASS 'C'
CEMENT CIRCULATED
17-1/2" HOLE

BUT TYPE 'C' LINER HANGER AT 4220'

9-5/8", 28 & 32 LB/FT, K-55 CASING SET AT 5000'
CEMENTED WITH 2850 SXS. CLASS 'C'
CEMENT CIRCULATED
SEED. 9-5/8" X 13-3/8" ANNULUS WITH 100 SXS. THIXOTROPIC
12-1/4" HOLE

282 JTS. 2-7/8", 6.5 LB/FT, J-55 TUBING
SN # 8694'

5-1/2" TAC AT 8444'

ADD PERFS:
8506'-09', 8512'-15', 8538'-40', 8546'-48',
8616'-20', 8644'-48' WITH 1 JSPT (24 HOLES)
8533'-66', 8588'-93' WITH 1 JSPT (40 HOLES)

5-1/2", 15.5 & 17 LB/FT, J-55 CASING SET AT 8800'
CEMENTED WITH 950 SXS. CLASS 'H'
CEMENT CIRCULATED
7-7/8" HOLE

PSTD 8753'
TD 8800'

MOBIL EXPLORATION & PRODUCING U.S., INC.
PRESENT COMPLETION

WELL & WELL NO.		NORTH VACUUM ABO UNIT #280	
LOCATION		2000' FNL & 1850' FEL 23-T17S-R34E	
COUNTY	LEA	STATE	NEW MEXICO
API #	300252923700	WELL NO.	
DATE	17 FEBRUARY 1995	DRILLER	C.M. JONES

LEASE North Vacuum Abo Unit WELL NO. 280
INITIAL COMPLETION DATE: 10/8/85 TD 8500' PBDT 3753'
CURRENT COMPLETION DATE: 10/8/85 CURRENT PBDT 8753'
CURRENT PRODUCING INTERVAL(S): 8506-09, 12-15, 38-40, 46-48, 8616-20, 45-48

CURRENT TESTS:

DATE	<u>11-07-86</u>	<u>12-07-86</u>	<u>1-16-87</u>
METHOD(F,P,GL)	<u>P</u>	<u>P</u>	<u>P</u>
BOPD/BWPD	<u>10/0</u>	<u>11/3</u>	<u>9/1</u>
MCF/D(FORM.)	<u>N.A.</u>	<u>N.A.</u>	<u>N.A.</u>

OFFSET WELL TESTS IN ZONE OF INTEREST

COMPANY	<u>MPTM</u>	<u>MPTM</u>	<u>MPTM</u>
LEASE & WELL NO.	<u>281</u>	<u>294</u>	<u>245</u>
DATE	<u>1-18-87</u>	<u>1-23-87</u>	<u>1-9-87</u>
METHOD(F,P,GL)	<u>P</u>	<u>P</u>	<u>P</u>
BOPD/BWPD	<u>39/0</u>	<u>47/1</u>	<u>32/0</u>
MCF/D	<u>N.A.</u>	<u>N.A.</u>	<u>N.A.</u>

WELL HISTORY

REMARKS: (INCLUDE DATA PERTINENT TO W/O, SQZD. PFS, ETC.)

8-16-85 Spud date
9-26-85 Initial Completion - perf Abo formation w/1 JS PF @
8506-09, 12-15, 38-40, 46-48, 8616-20, 44-48
Acidize w/ 6200 gals 15% NEFE HCL + 48 1.3 SG
RCNbs, TTP 4000-5000 psi A.I.R. 3.8 BPM
10-8-85 NMOCC Potential: P 15 BNO + 9 BSW / 24 hrs
6" x 1 1/4" x 120" SPM
3/87 Add Perfs. & Acidize Before: 9 BOPD + 1 BWPD
(8533-46 86-93' ISPF 40 holes) After: 23 BOPD + 15 BWPD