

Application for Downhole Commingling

Jerome P. McHugh
Mother Lode #1 Well
T-24-N, R-2-W, NMPM
Sec. 3: Unit Letter H
1730' FNL & 860' FEL
Rio Arriba Co., New Mexico
Case No. 7966 , Exhibit No. A1

34 HUGH $\frac{3}{4}$ E.A. PHILLIPS $\frac{1}{4}$		35 $\frac{1}{4}$ EL PASO So. Roy $\frac{9}{32}$ DPC $\frac{1}{4}$ MCH-7% NM 01385 FEE EL PASO	
FEE		SE 081296 MCHUGH	
TOC $\frac{1}{2}$ CONOCO $\frac{1}{2}$ MOBIL $\frac{1}{2}$	MCHUGH NM23032 MCHUGH $\frac{1}{2}$ KENAI $\frac{1}{2}$	FEE MCHUGH $\frac{1}{2}$ KENAI $\frac{1}{2}$	
SF 078 907	FEE	FEE	
TOC CONOCO $\frac{1}{2}$ MOBIL $\frac{1}{2}$ SF 078907 MCHUGH $\frac{1}{2}$ KENAI $\frac{1}{2}$	AMOCO	AMOCO	
FEE	NM40634	NM40635	
9	10	1	

T-24-N, R-2-W, NMPM
Rio Arriba County, New Mexico

OFFSET OPERATORS

Jerome P. McHugh (McHugh) Tenneco Oil Company (TOC)
650 S. Cherry St., #1225 P.O. Box 3249
Denver, CO 80222 Englewood, CO 80155

E.A. Phillips (Phillips) Conoco, Inc. (Conoco)
1200 Philtower Bldg. P.O. Box 1267
Tulsa, OK 74103 Ponca City, OK 74601

El Paso Natural Gas Company (El Paso)
P.O. Box 1492
El Paso, TX 79978

Dugan Production Corp. (DPC)
P.O. Box 208
Farmington, NM 87499

Southland Royalty Company (So. Roy)
801 Cherry Str.
Ft. Worth, TX 76102

Kenai Oil and Gas Inc. (Kenai)
One Barclay Plaza
1675 Larimer Str., Suite 500
Denver, CO 80202

Amoco Production Company (Amoco)
Amoco Bldg.
17th and Broadway
Denver, CO 80202

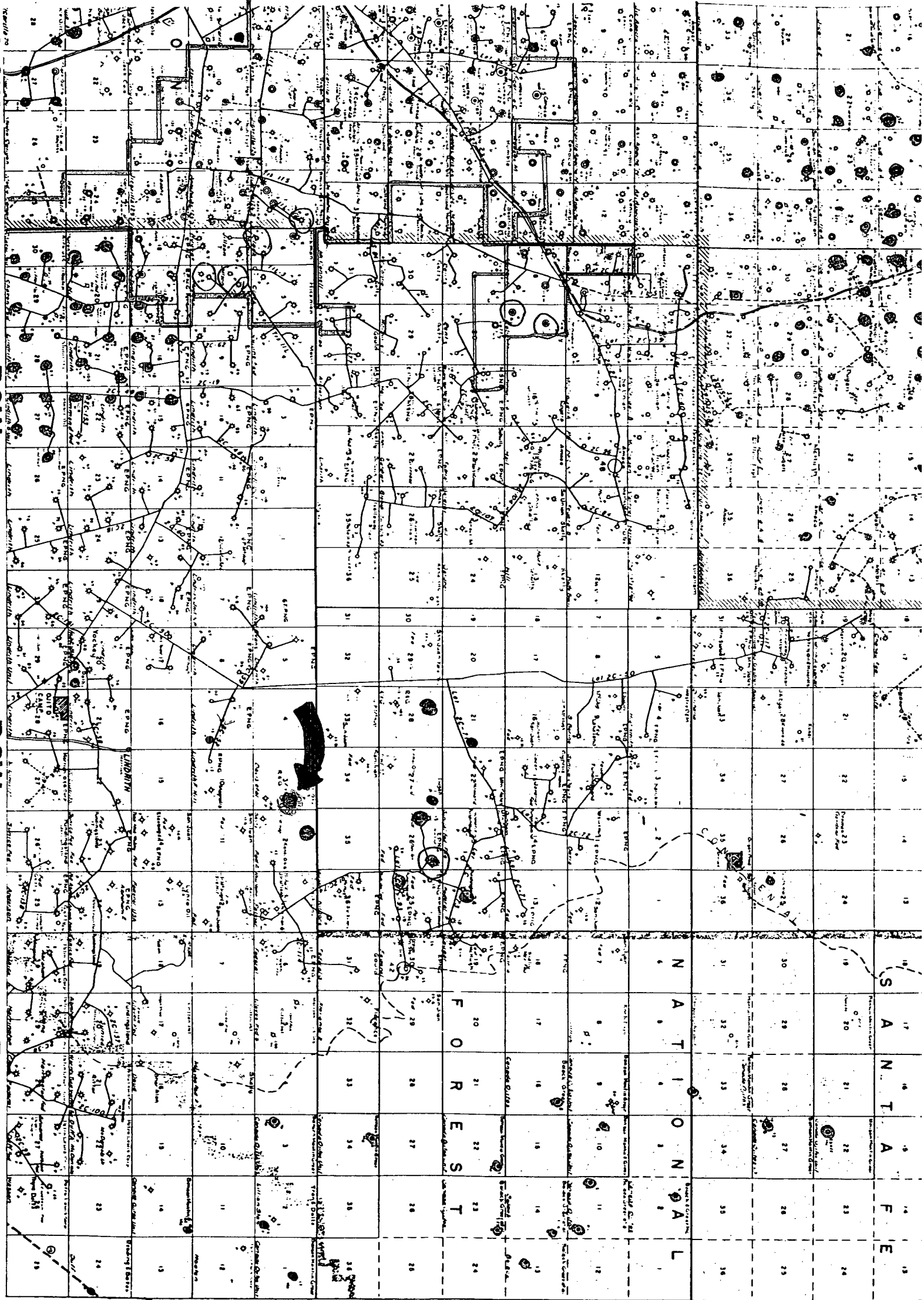
Mobil Producing Texas and New Mexico (Mobil)
Nine Greenway Plaza East #2700
Houston, TX 77046

R4W

R3W

R2W

R1W



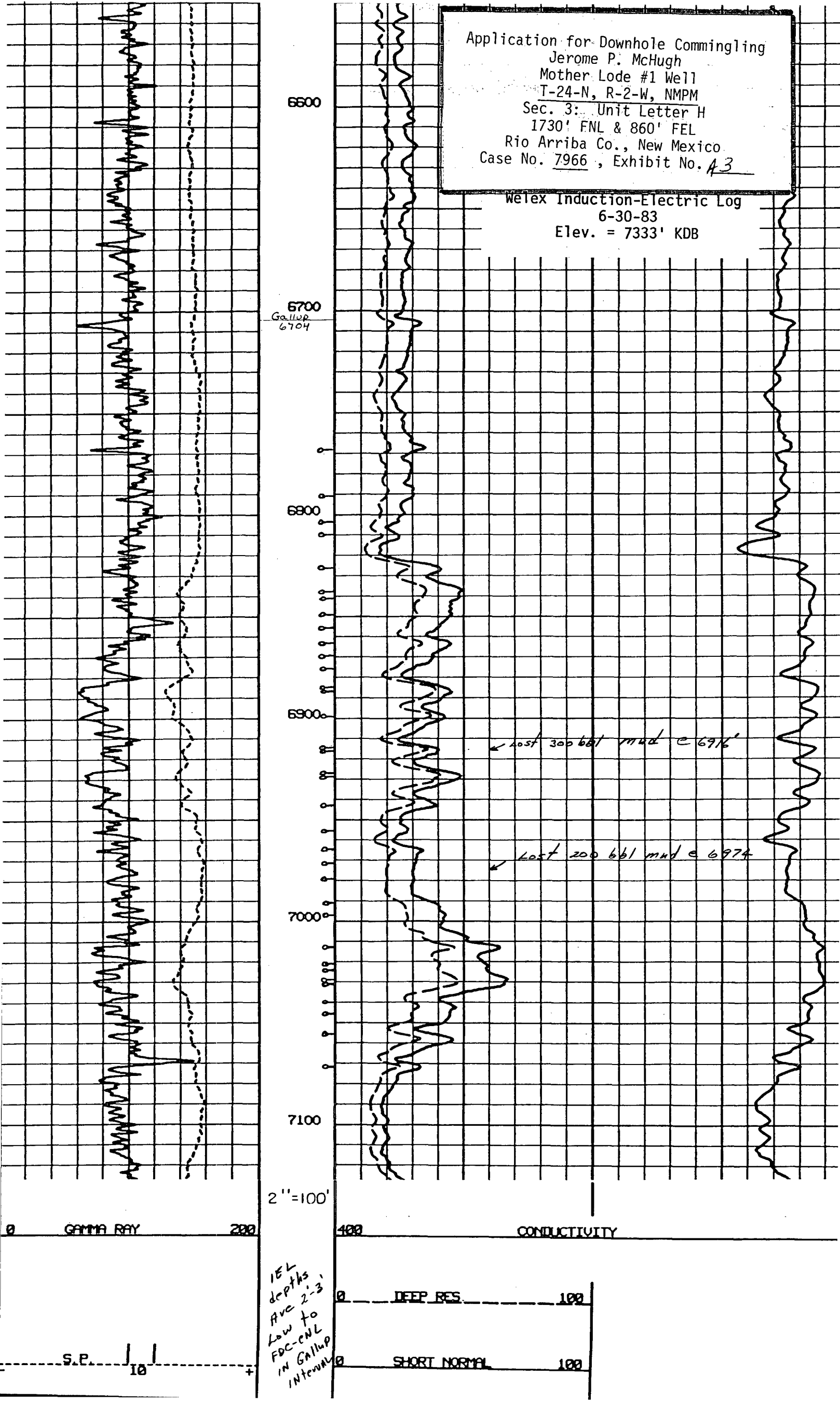
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KEY

- ☼ Subject Well
- ☐ West Lindrith Gallup-Dakota Pool
- ☐ Ojito (Gallup)-Dakota Pool
- Commingled Gallup-Dakota Well
- Dakota Well
- Gallup Well
- Well completed in Gallup & Dakota
- ☐ Uncompleted Gallup Well
- Plugged & Abandoned Gallup or Dakota
- Wells used for production data

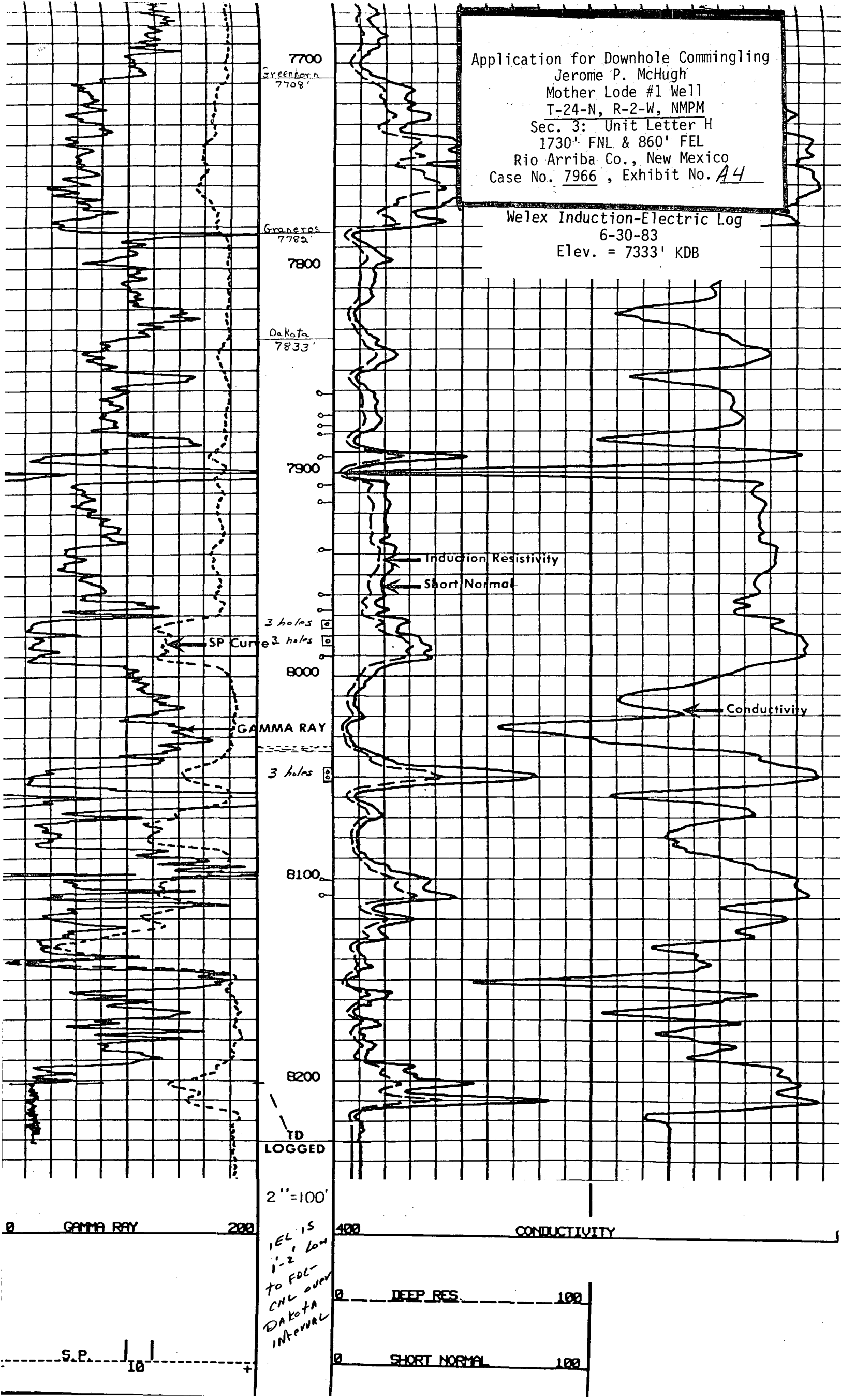
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 Sec. 3: Unit Letter H
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 Rio Arriba Co., New Mexico
 Case No. 7966, Exhibit No. 43

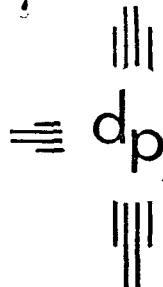
Welex Induction-Electric Log
 6-30-83
 Elev. = 7333' KDB



Application for Downhole Correlating
Jerome P. McHugh
Mother Lode #1 Well
T-24-N, R-2-W, NMPM
Sec. 3: Unit Letter H
1730' FNL & 860' FEL
Rio Arriba Co., New Mexico
Case No. 7966, Exhibit No. A4

Welex Induction-Electric Log
6-30-83
Elev. = 7333' KDB





dugan production

Application for Downhole Commingling
Jerome P. McHugh
Mother Lode #1 Well
T-24-N, R-2-W, NMPM
Sec. 3: Unit Letter H
1730' FNL & 860' FEL
Rio Arriba Co., New Mexico
Case No. 7966 , Exhibit No. 45

JEROME P. McHUGH
Mother Lode #1
1730' FNL - 860' FEL
Sec. 3, T24N R2W
Rio Arriba County, NM

MORNING REPORT

6-14-83 MI & RU Four Corners Drilling Co. Rig ~~#4~~ ^{#10} Spudded 12 $\frac{1}{4}$ " hole
at 4:45 p.m. 6-13-83. Drilled to 237'. Ran 5 jts. 9-5/8"
O.D., 47#, 8 Rd, ST&C casing. T.E. 212' set at 224' RKB.
Cemented with 125 sx class "B" plus 2% CaCl. (147.5 cf. slurry)
Good cement to surface. P.O.B. at 10:00 p.m. 6-13-83. W.O.C.

4-1/2 hrs - MI & RU
1-1/4 hrs - drill rat and mouse holes
3-1/4 hrs - drill 12 $\frac{1}{4}$ " hole
1/4 hr - trip
3/4 hr - run 9-5/8" casing
1 hr - cement casing
8 hrs - W.O.C.

6-15-83 1785' - Drilling Wt. 8.8 Vis 28 W.L. 10
1° at 505'; 1 $\frac{1}{2}$ ° at 769'; 2° at 1041'; 2 $\frac{1}{2}$ ° at 1290'; 3° at
1440'; 2-3/4° at 1580'; 2-1/4° at 1739'

1-1/4 hrs - trip
15-1/2 hrs - drilling
2-1/4 hrs - survey
4 hrs - W.O.C.
1 hr - repairs

Pressure tested surface casing at 800 psi for 30 min. Held
OK.

6-16-83 2950' - trip Wt. 8.7 Vis 28 W.L. 10.0
2 $\frac{1}{4}$ ° at 1833'; 1-3/4° at 1986'; 1-3/4° at 2076'; 1-3/4° at 2200';
2° at 2355'; 1-3/4° at 2527'; 2° at 2677'; 2° at 2835'

3 hrs - trip
18-1/4 hrs - drilling
1/4 hr - rig service
2-1/4 hrs - survey
1/4 hr - wash to bottom

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Mother Lode #1
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6-17-83 3636' - Drilling Wt. 8.8 Vis 38 W.L. 10
4% L.C.M.; 2% 3071', 2° at 3197'; 2¼° at 3347'; 2½° at 3478'

2 hrs - trip
17-1/4 hrs - drilling
1 hr - survey
3 hrs - lost circ. (lost 250 bbls. at 3432')
3/4 hr - wash to bottom

6-18-83 4020' - Drilling Wt. 8.8 Vis 45 W.L. 10.5
5% L.C.M.. 1-3/4° at 3676'; 1-3/4° at 3840'; 1-3/4° at 3942'.

4-1/4 hrs - trip
13 hrs - drilling
1-1/4 hrs - survey
3-1/4 hrs - lost circ.
1-3/4 hrs - washing bridges 2856-3942'
1/2 hr - cut drilling

6-19-83 4547' - Drilling Wt. 9.0 Vis 40 W.L. 10.0
3/4° at 4410'.

23 hrs - drilling
1/2 hr - rig service
1/2 hr - survey

6-20-83 5015' - Drilling Wt. 9.0 Vis 41 W.L. 10.0
3/4° at 4648'.

3-1/2 hrs - trip
19 hrs - drilling
1/4 hr - rig service
1 hr - survey
1/4 hr - wash to bottom

6-21-83 5653' - Drilling Wt. 9.1 Vis 42 W.L. 10 ¼° at 5157'

23 hrs - drilling
1/2 hr - rig service
1/2 hr - survey

6-22-83 6068' - Drilling Wt. 9.0 Vis 42 W.L. 5.5 8% L.C.M.
½° at 5620' (Lost 150 bbls. at 5872')

20-3/4 hrs - drilling
1/2 hr - rig service
1/4 hr - survey
1/2 hr - pull 5 stds
1-1/2 hrs - mix mud
1/4 hr - pump L.C.M.
1/4 hr - trip in hole

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Mother Lode #1
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6-23-83 6249' - Drilling Wt. 9.0 Vis 41 W.L. 10 2% LCM
3/4° at 6151'

8-1/2 hrs - trip
11-1/2 hrs - drilling
1/2 hr - survey
1 hr - wash to bottom and fish for cone
2 hrs - W.O. magnet
1/2 hr - repairs

6-24-83 6670' - Drilling Wt. 9.0 Vis 39 W.L. 11 1° at
6619'.

23-1/4 hrs - drilling
1/4 hr - rig service
1/2 hr - survey

6-25-83 6974' - Repairs Wt. 9.1 Vis 44 W.L. 10.5 15% LCM
1° at 6619'

15-1/4 hrs - drilling
1/2 hr - survey
5-1/4 hrs - lost circ. (lost 300 bbl. at 6916' & 200 bbls. at 6974')
3 hrs - repairs

6-26-83 7221' - Drilling Wt. 9.0 Vis 41 W.L. 11.0 2% LCM
1 1/4° at 7129'

1/4 hr - trip
13-3/4 hrs - drilling
1/4 hr - rig service
1/2 hr - survey
8-1/4 hrs - rig repair
3/4 hr - mix mud
1/4 hr - wash to bottom

6-27-83 7525' - drilling Wt. 9.0 Vis 40 W.L. 10.0 4% LCM
3/4° at 7421'

5 hrs - trip
17-1/4 hrs - drilling
1/4 hr - rig service
1/4 hr - survey
3/4 hr - lost circ. (200 bbls. at 7324')
1/2 hr - wash to bottom

6-28-83 7895' - Trip Wt. 9.0 Vis 45 W.L. 10.5 Tr. L.C.M.

23-1/2 hr - drilling
1/4 hr - rig service
1/4 hr - survey

6-29-83 8029' - Drilling Wt. 9.0 Vis 60 W.L. 10.0 $\frac{1}{2}^{\circ}$ at 7895'

10-3/4 hrs - trip
11-1/2 hrs - drilling
1 hr - wash to bottom
3/4 hr - cut drilling line

6-30-83 T.D. 8220' - Logging Wt. 9.1 Vis 63 W.L. 10.5

4 hrs - trip
14 hrs - drilling
1/4 hr - rig service
2 hrs - circ.
3-3/4 hrs - logging

7-1-83 T.D. 8250' - Running 4 $\frac{1}{2}$ " casing. Wt. 9.0 Vis 47 W.L. 10.5
 $1\frac{1}{2}^{\circ}$ at 8250'

3-1/2 hrs - trip
5-1/4 hrs - drilling
8 hrs - logging
1/4 hr - wash to bottom
5-1/4 hrs - lay down drill pipe
1-1/2 hrs - circ.
1/4 hr - rig up casing crew

7-2-83 Ran 208 jts. 4 $\frac{1}{2}$ " O.D., 11.6#, N-80, 8 Rd, LT&C casing. T.E. 8239' set at 8248' RKB.

Cemented 1st stage with 10 bbl. mud flush, 315 sx 50-50 poz + 2% gel + 6 $\frac{1}{4}$ # gilsonite + $\frac{1}{4}$ # flocele/sk (mixed 12.9#/gal. - slurry yield 1.4 cf/sk) followed by 125 sx class "B" neat w/ $\frac{1}{4}$ # flocele/sk (mixed 15.6#/gal. - slurry yield 1.18 cf per sk). Total slurry 589 cf. Reciprocated pipe and had good circulation during cementing operations. Bumped plug with 1400 psi. Held OK. P.O.B. at 12:00 noon, 7-1-83. Opened D.V. tool at 5935' with 800 psi. Circulated with rig pumps for 3 hrs.

Cemented 2nd stage with 10 bbls. mud flush, 200 sx 65-35 poz with 12% gel + 6 $\frac{1}{4}$ # gilsonite + $\frac{1}{4}$ # flocele/sk (mixed 11.7#/gal. - slurry yield 2.34 cf/sk) followed by 315 sx 50-50 poz w/ 2% gel + $\frac{1}{4}$ # flocele per sk (mixed at 13.4#/gal. - slurry yield 1.27 cf/sk). Total slurry 868 ft. Had good circulation while cementing. Bumped plug with 2100 psi. Held OK. P.O.B. at 3:45 p.m. 7-1-83. Opened DV tool at 3524' with 800 psi. Circulated with rig pumps for 1 hour.

7-2-83 (cont.) Cemented 3rd stage with 10 bbl. mud flush, 480 sx 65-35 poz + 12% gel & 1/4# flocele/sk (mixed at 11.8#/gal. - slurry yield 2.21 cf/sk) followed by 75 sx 50-50 poz with 2% gel + 1/4# flocele/sk (mixed at 13.4#/gal. - slurry yield 1.27 cf/sk). Total slurry 1156 cf. Lost circulation one half way thru displacement. Bumped plug with 2500 psi. Held OK. P.O.B. at 6:00 p.m. Nipple down BOP. Set slips. Cut off casing. Rig released at 7:30 p.m. 7-1-83.

DAILY REPORT

7-7-83 Moved in & Rigged up Farmington Well Service unit. Installed BOP. Picked up 3-7/8" bit+sub and ran in 2-3/8" tubing. Cleaned out cement and rubber on D.V. tool at 3524'. Bit plugged while drilling rubber plug. Pulled tubing off bottom and unplugged bit. Shut down for night.

7-8-83 Finish Drilling D.V. tool. G. I. H. to $\pm$ 5900'. Drilling cement and D.V. tool @ $\pm$ 5935'. G. I. H. to 8088'. Clean out to $\pm$ 8152' loggers depth; tubing measurement 8125'. Circulate clean.

7-9-83 Rig up Western Co. Pressure test to 4000 psi; okay. Spot 250 gal. 7 1/2% H.C.L. P. O. H. Rig up Basin Perforators. Ran GR-CCL with 3.771" O.D. Gauge Ring from PBTD 8152' to 7700', 7100 to 6700', 5850-5100'. Perforate Dakota formation with 3-1/8" gun as follows: 7861, 72, 77, 80 1/2, 92, 7905, 14, 37, 60, 66, 72, 74, 76, 80, 82, 84, 90, 8045, 48, 51, 8100, 08, Total 22 holes (0.34"). Break down formation with 2800 psi. Drop 33 RCN ball sealers. Good ball action. Ball off with 4000 psi. Ran 4 1/2" junk basket. Recovered 22 balls (20 hits). Shut down.

7-10-83 Shut down.

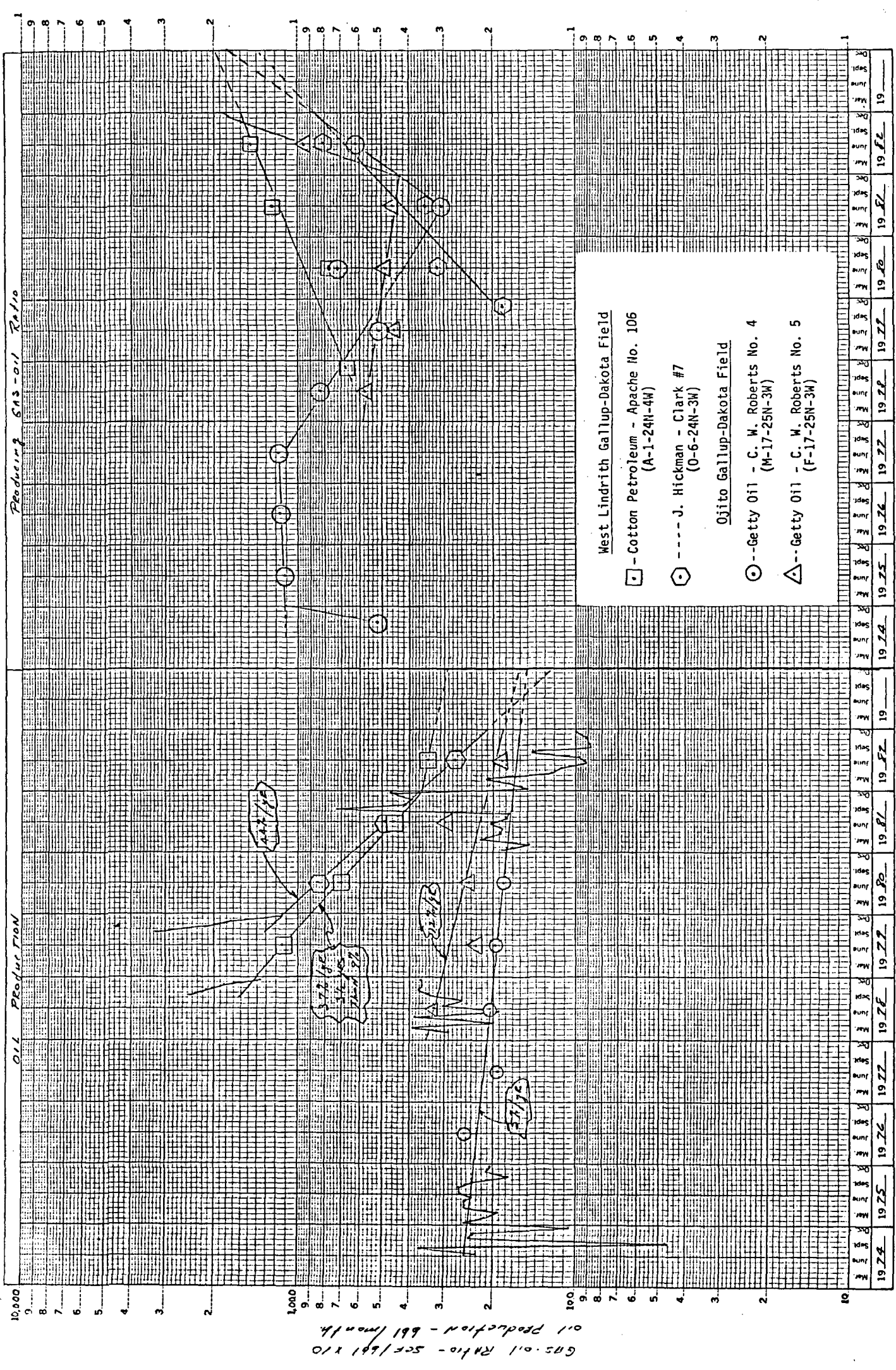
7-11-83 Rig up Western Co. Frac Dakota Perfs as follows:

10,000 gal. Mini-max III - 30 + 2% diesel - pad
15,000 gal. Mini-max III - 30 + 2% diesel + 1# ppg 20/40 sand
8,000 gal. Mini-max III - 30 + 2% diesel + 2# ppg 20/40 sand
8,000 gal. Mini-max III - 30 + 2% diesel + 3# ppg 20/40 sand
5,082 gal. H₂O flush
ISDP - 1600 psi
15 min. - 1300 psi
Maximum treating pressure - 4000 psi
Minimum treating pressure - 3000 psi
Average treating pressure - 3200 psi @ 24 bbl/min.

Totals:
54,000 # 20/40 sand; 41,000 gal. Mini-max III-30;
820 gal. Diesel; 41 Gal. Aquaflo.

- 7-22-83 MI & RU Ponderosa Oilfield Service swabbing unit. Casing pressure 1100 psi. Tubing pressure zero. Made 16 swab runs to tank. Swabbed estimated 75 bbls. frac fluid and 10 bbls. oil. Casing pressure at end of day 1125 psi. Well gassing good last 6 runs. S.D.O.N.
1st run out to tank
- 7-23-83 Casing pressure 1225 psi. Tubing pressure 300 psi. Opened well to tank. Did not unload. Made 15 swab runs. Fluid level first run 2400'. Well kicked off at 1:25 p.m. when casing pressure built up to 1275 psi. Flowed 2 hrs. and 35 min. Shut well in at 4:00 p.m. Casing pressure 925 psi. Drained all water from tank. Made 38 bbls. oil and estimated 100 bbls. frac fluid.
- 7-24-83 Shut down - Sunday.
- 7-25-83 Casing pressure 1300 psi. Tubing pressure 500 psi. Well would not unload. Fluid level first run 2800'. Made 15 swab runs. Well kicked off at 1:20 p.m. Flowed 1 hr. and 40 min. Released swabbing unit. Casing at 950 psi when rigging down. Well died after one more hour. Casing pressure 1050 psi. Shut well in and equalized casing and tubing pressures.
- 7-27-83 Rigged up Ponderosa swab unit. SICP = 1150 psi and SITP = 1125 psi. Opened tubing to tank and ran in with swab. Fluid level at 2600'. Made 10 swab runs in 2½ hrs., recovering approximately 1 B0 and 39 BW. Well kicked off and flowed 15 min. at 10% oil and casing pressure at 1175 psi. Made 10 more swab runs in 3 hrs. with fluid level 2200 to 1500 ft. and casing pressure increasing to 1225 psi. Recovered approximately 65 bbl. gas-cut fluid, averaging 10% oil. Well gassing after each swab run. Shut in for night. Total recovery during day = 16 B0 to tank and approx. 175 bbl. water.
- 7-28-83 SITP 180 psi. SICP 1325 psi. Made nine swab runs. Well kicked off flowing gas and oil-cut water (oil cut averaged approx. 10%). Left flowing overnight.
- 7-29-83 Well dead. Tubing pressure = 0, and Casing pressure = 1475 psi. Plan to equalize and try to kick off again Monday. Tank 6'3" Total fluid. (approximately 2' water).
- 7-30 to
8-28-83 Attempting to get well to flow; did not kick off.
- 8-29-83 MI & RU Hinson Service swabbing unit. Casing pressure 1190 psi. Fluid level at 1500' first run. Made 3 swab runs. Well did not kick off, but blows after each run. S.D.O.N.

- 8-30-83 Casing pressure 1220 psi. Tubing pressure TSTM. Fluid level 1650'. Made 11 swab runs, over 99% water after 1st run. Well kicked off and flowed to tank for 1 hr. 15 minutes and died. Made two swab runs. Well flowed 20 minutes, lifting fluid and died. Made 1 swab run. Well flowed 30 minutes. S.D.O.N. Casing pressure 1270 psi. Made total of 12 bbls. oil to tank and estimated 80 bbls. water.
- 8-31-83 Casing pressure 1340 psi. Tubing pressure 50 psi. Blew tubing down. Fluid level first swab run 1500'. Made 8 swab runs. Well kicked off and flowed 45 minutes and died. Made two swab runs and well kicked off. Flowed 30 minutes and died. Made 1 swab run. Well kicked off and flowed 20 minutes and died. Kicked well off with one more swab run. Well died. S.D.O.N. Made estimated 75 bbls. total fluid during day with total of 10 bbls. oil.
- 9-1-83 Rig shut down
- 9-2-83 Casing pressure 1270 psi. Opened well thru prod. unit. Well kicked off and flowed 1½ hrs., making estimated 207 MCFPD and 10 bbls. oil. Well died. Made 5 swab runs. Swabbed 8 bbls. oil and estimated 25 bbls. water. Well kicked off. Released swabbing unit and moved to E.T. #1.
- 9-3-83 Well dead. Had made 37 bbls. oil in undetermined time. Total oil in tank 195 bbls.
- 9-19-83 SITP = 30 psi and SICP = 1280 psi. Tubing bled to zero in one minute. Shut in.



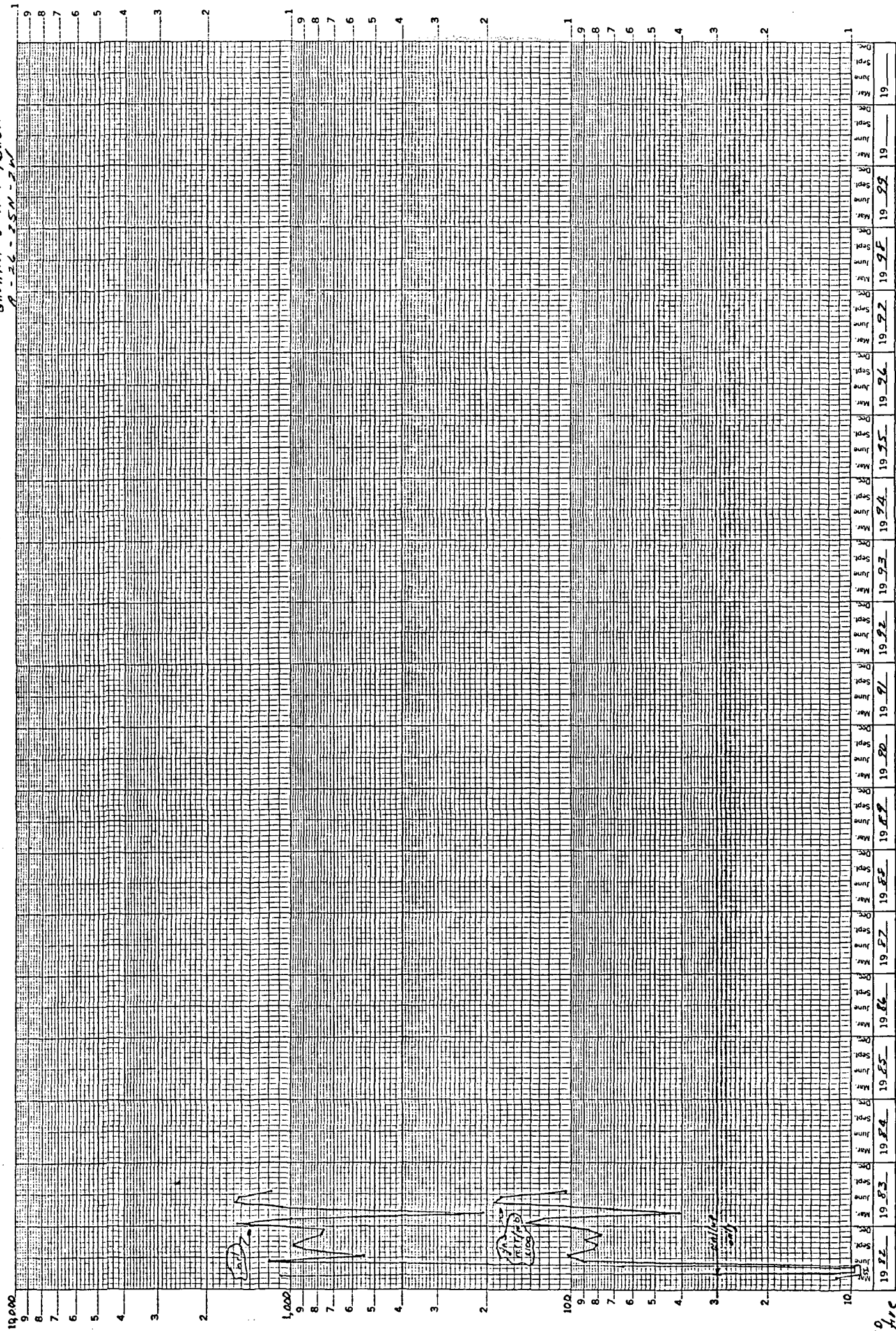
WELL DATA

Comminglel Gallup-Dakota Wells
General Area of Jerome P. McHugh's Wells in
Townships 24 and 25 North, Range 2 West
Rio Arriba County, New Mexico

Operator	Well Name	Location U-S-T-R	Oil Production				Gas Production			Estimated Ultimate Recovery-Bbl	
			Initial Potential BOPD-GOR	Actual Init.Prod. BOPD-GOR	Production Factor Actual/IP	Initial Decline %/Yr-Yrs	Stabilized Decline % / Yr	Gas Prod. Factor Actual/IP	Incline Rate %/Yr		
<u>West Lindrith Gallup-Dakota Field</u>											
Cotton Petroleum	- Apache No. 106	A-1-24N-4W	97 - 1526	53 - 6400	55%	37 - 3½	9	4.19	25	41,254	76,800
J. Hickman	- Clark No. 7	O-6-24N-3W	150 - 2666	43 - 1800	29%	44 - --	-	0.68	57	30,597	51,600*
Mobil Oil	- W.D. Hughes No.5	M-8-24N-3W	28 - 179	9 - 1670	32%	29 - --	-	9.33	19	3,896	12,200*
Mobil Oil	- Jillson No. 4	E-8-24N-3W	35 - 857	18 - 840	51%	21 - --	-	0.98	39	7,822	38,500*
<u>Ojito Gallup-Dakota Field</u>											
Getty Oil	- C.W. Roberts No. 4	M-17-25N-3W	9 - 12,220	8 - 11,000	-	5 - --	5	0.90	5	21,031	48,000
Getty Oil	- C.W. Roberts No. 5	F-17-25N-3W	NR - 4,850	12 - 5,800	-	12 - --	12	1.20	-	14,894	28,000
6 Well Average			64 - 3,716	24 - 4,585	42%	33 - --	9	1.23	29		42,500

* Estimated assuming maintaining initial decline rate for a total of 3½ years from the date of first production and then stabilizing at an annual decline rate of 9%

Northwest Exploration
Gavalia No. 1
Gavalia Field / Basin Data A?
R-26-25N-2W



Gas Production - 100 MCF/month
Oil Production - 661/month

47 6840

K-E 20 YEARS BY MONTHS X 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

YEAR END
Cumulative
Oil, bbl
Gas, MCF

7/58 15260 As of 8-1-83
62/08 148,907 " "

Dec	1982	Mar	1983	Jun	1983	Dec	1983	Mar	1984	Jun	1984	Dec	1984	Mar	1985	Jun	1985	Dec	1985	Mar	1986	Jun	1986	Dec	1986	Mar	1987	Jun	1987	Dec	1987	Mar	1988	Jun	1988	Dec	1988	Mar	1989	Jun	1989	Dec	1989	Mar	1990	Jun	1990	Dec	1990	Mar	1991	Jun	1991	Dec	1991	Mar	1992	Jun	1992	Dec	1992	Mar	1993	Jun	1993	Dec	1993	Mar	1994	Jun	1994	Dec	1994	Mar	1995	Jun	1995	Dec	1995	Mar	1996	Jun	1996	Dec	1996	Mar	1997	Jun	1997	Dec	1997	Mar	1998	Jun	1998	Dec	1998	Mar	1999	Jun	1999	Dec	1999	Mar	2000	Jun	2000	Dec	2000	Mar	2001	Jun	2001	Dec	2001	Mar	2002	Jun	2002	Dec	2002	Mar	2003	Jun	2003	Dec	2003	Mar	2004	Jun	2004	Dec	2004	Mar	2005	Jun	2005	Dec	2005	Mar	2006	Jun	2006	Dec	2006	Mar	2007	Jun	2007	Dec	2007	Mar	2008	Jun	2008	Dec	2008	Mar	2009	Jun	2009	Dec	2009	Mar	2010	Jun	2010	Dec	2010	Mar	2011	Jun	2011	Dec	2011	Mar	2012	Jun	2012	Dec	2012	Mar	2013	Jun	2013	Dec	2013	Mar	2014	Jun	2014	Dec	2014	Mar	2015	Jun	2015	Dec	2015	Mar	2016	Jun	2016	Dec	2016	Mar	2017	Jun	2017	Dec	2017	Mar	2018	Jun	2018	Dec	2018	Mar	2019	Jun	2019	Dec	2019	Mar	2020	Jun	2020	Dec	2020	Mar	2021	Jun	2021	Dec	2021	Mar	2022	Jun	2022	Dec	2022	Mar	2023	Jun	2023	Dec	2023	Mar	2024	Jun	2024	Dec	2024	Mar	2025	Jun	2025	Dec	2025	Mar	2026	Jun	2026	Dec	2026	Mar	2027	Jun	2027	Dec	2027	Mar	2028	Jun	2028	Dec	2028	Mar	2029	Jun	2029	Dec	2029	Mar	2030	Jun	2030	Dec	2030	Mar	2031	Jun	2031	Dec	2031	Mar	2032	Jun	2032	Dec	2032	Mar	2033	Jun	2033	Dec	2033	Mar	2034	Jun	2034	Dec	2034	Mar	2035	Jun	2035	Dec	2035	Mar	2036	Jun	2036	Dec	2036	Mar	2037	Jun	2037	Dec	2037	Mar	2038	Jun	2038	Dec	2038	Mar	2039	Jun	2039	Dec	2039	Mar	2040	Jun	2040	Dec	2040	Mar	2041	Jun	2041	Dec	2041	Mar	2042	Jun	2042	Dec	2042	Mar	2043	Jun	2043	Dec	2043	Mar	2044	Jun	2044	Dec	2044	Mar	2045	Jun	2045	Dec	2045	Mar	2046	Jun	2046	Dec	2046	Mar	2047	Jun	2047	Dec	2047	Mar	2048	Jun	2048	Dec	2048	Mar	2049	Jun	2049	Dec	2049	Mar	2050	Jun	2050	Dec	2050	Mar	2051	Jun	2051	Dec	2051	Mar	2052	Jun	2052	Dec	2052	Mar	2053	Jun	2053	Dec	2053	Mar	2054	Jun	2054	Dec	2054	Mar	2055	Jun	2055	Dec	2055	Mar	2056	Jun	2056	Dec	2056	Mar	2057	Jun	2057	Dec	2057	Mar	2058	Jun	2058	Dec	2058	Mar	2059	Jun	2059	Dec	2059	Mar	2060	Jun	2060	Dec	2060	Mar	2061	Jun	2061	Dec	2061	Mar	2062	Jun	2062	Dec	2062	Mar	2063	Jun	2063	Dec	2063	Mar	2064	Jun	2064	Dec	2064	Mar	2065	Jun	2065	Dec	2065	Mar	2066	Jun	2066	Dec	2066	Mar	2067	Jun	2067	Dec	2067	Mar	2068	Jun	2068	Dec	2068	Mar	2069	Jun	2069	Dec	2069	Mar	2070	Jun	2070	Dec	2070	Mar	2071	Jun	2071	Dec	2071	Mar	2072	Jun	2072	Dec	2072	Mar	2073	Jun	2073	Dec	2073	Mar	2074	Jun	2074	Dec	2074	Mar	2075	Jun	2075	Dec	2075	Mar	2076	Jun	2076	Dec	2076	Mar	2077	Jun	2077	Dec	2077	Mar	2078	Jun	2078	Dec	2078	Mar	2079	Jun	2079	Dec	2079	Mar	2080	Jun	2080	Dec	2080	Mar	2081	Jun	2081	Dec	2081	Mar	2082	Jun	2082	Dec	2082	Mar	2083	Jun	2083	Dec	2083	Mar	2084	Jun	2084	Dec	2084	Mar	2085	Jun	2085	Dec	2085	Mar	2086	Jun	2086	Dec	2086	Mar	2087	Jun	2087	Dec	2087	Mar	2088	Jun	2088	Dec	2088	Mar	2089	Jun	2089	Dec	2089	Mar	2090	Jun	2090	Dec	2090	Mar	2091	Jun	2091	Dec	2091	Mar	2092	Jun	2092	Dec	2092	Mar	2093	Jun	2093	Dec	2093	Mar	2094	Jun	2094	Dec	2094	Mar	2095	Jun	2095	Dec	2095	Mar	2096	Jun	2096	Dec	2096	Mar	2097	Jun	2097	Dec	2097	Mar	2098	Jun	2098	Dec	2098	Mar	2099	Jun	2099	Dec	2099	Mar	2100	Jun	2100	Dec	2100	Mar	2101	Jun	2101	Dec	2101	Mar	2102	Jun	2102	Dec	2102	Mar	2103	Jun	2103	Dec	2103	Mar	2104	Jun	2104	Dec	2104	Mar	2105	Jun	2105	Dec	2105	Mar	2106	Jun	2106	Dec	2106	Mar	2107	Jun	2107	Dec	2107	Mar	2108	Jun	2108	Dec	2108	Mar	2109	Jun	2109	Dec	2109	Mar	2110	Jun	2110	Dec	2110	Mar	2111	Jun	2111	Dec	2111	Mar	2112	Jun	2112	Dec	2112	Mar	2113	Jun	2113	Dec	2113	Mar	2114	Jun	2114	Dec	2114	Mar	2115	Jun	2115	Dec	2115	Mar	2116	Jun	2116	Dec	2116	Mar	2117	Jun	2117	Dec	2117	Mar	2118	Jun	2118	Dec	2118	Mar	2119	Jun	2119	Dec	2119	Mar	2120	Jun	2120	Dec	2120	Mar	2121	Jun	2121	Dec	2121	Mar	2122	Jun	2122	Dec	2122	Mar	2123	Jun	2123	Dec	2123	Mar	2124	Jun	2124	Dec	2124	Mar	2125	Jun	2125	Dec	2125	Mar	2126	Jun	2126	Dec	2126	Mar	2127	Jun	2127	Dec	2127	Mar	2128	Jun	2128	Dec	2128	Mar	2129	Jun	2129	Dec	2129	Mar	2130	Jun	2130	Dec	2130	Mar	2131	Jun	2131	Dec	2131	Mar	2132	Jun	2132	Dec	2132	Mar	2133	Jun	2133	Dec	2133	Mar	2134	Jun	2134	Dec	2134	Mar	2135	Jun	2135	Dec	2135	Mar	2136	Jun	2136	Dec	2136	Mar	2137	Jun	2137	Dec	2137	Mar	2138	Jun	2138	Dec	2138	Mar	2139	Jun	2139	Dec	2139	Mar	2140	Jun	2140	Dec	2140	Mar	2141	Jun	2141	Dec	2141	Mar	2142	Jun	2142	Dec	2142	Mar	2143	Jun	2143	Dec	2143	Mar	2144	Jun	2144	Dec	2144	Mar	2145	Jun	2145	Dec	2145	Mar	2146	Jun	2146	Dec	2146	Mar	2147	Jun	2147	Dec	2147	Mar	2148	Jun	2148	Dec	2148	Mar	2149	Jun	2149	Dec	2149	Mar	2150	Jun	2150	Dec	2150	Mar	2151	Jun	2151	Dec	2151	Mar	2152	Jun	2152	Dec	2152	Mar	2153	Jun	2153	Dec	2153	Mar	2154	Jun	2154	Dec	2154	Mar	2155	Jun	2155	Dec	2155	Mar	2156	Jun	2156	Dec	2156	Mar	2157	Jun	2157	Dec	2157	Mar	2158	Jun	2158	Dec	2158	Mar	2159	Jun	2159	Dec	2159	Mar	2160	Jun	2160	Dec	2160	Mar	2161	Jun	2161	Dec	2161	Mar	2162	Jun	2162	Dec	2162	Mar	2163	Jun	2163	Dec	2163	Mar	2164	Jun	2164	Dec	2164	Mar	2165	Jun	2165	Dec	2165	Mar	2166	Jun	2166	Dec	2166	Mar	2167	Jun	2167	Dec	2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RESERVES AND ALLOCATION FACTORS FOR
 COMMINGLED GALLUP-DAKOTA WELLS
 Townships 24 and 25 North, Range 2 West
 Rio Arriba County, New Mexico

Application for Downhole Commingling
 Jerome P. McHugh
 Mother Lode #1 well
 T-24-N, R-2-W, NMPM
 Sec. 3: Unit Letter H
 1730' FNL & 860' FEL
 Rio Arriba Co., New Mexico
 Case No. 7966 , Exhibit No. 47

Janet No. 1	Janet No. 2	E. T. No. 1	Mother Lode No. 1	Wright Way No. 1
<u>R-7258</u>	<u>R-7312</u>	<u>Proposed</u>	<u>Proposed</u>	<u>Proposed</u>

OIL (Reserves in bbl.)

Gallup	39,200 (63%)	35,600 (75%)	40,600 (84%)	43,900 (79%)	28,000 (67%)
Dakota	<u>22,600 (37%)</u>	<u>12,000 (25%)</u>	<u>7,800 (16%)</u>	<u>11,900 (21%)</u>	<u>14,100 (33%)</u>
TOTAL	61,800	47,600	48,400	55,800	42,100

GAS (Reserves in MMCF)

Gallup	372.4 (82%)	363.1 (90%)	414.1 (94%)	447.8 (91%)	285.6 (85%)
Dakota	<u>79.1 (18%)</u>	<u>42.0 (10%)</u>	<u>27.3 (6%)</u>	<u>41.7 (9%)</u>	<u>49.4 (15%)</u>
TOTAL	451.5	405.1	441.4	489.5	335.0

Indicated Initial Potential Commingled Stream	116 BOPD	86 BOPD	86 BOPD	78 BOPD	78 BOPD
Predicted Initial Production	49 BOPD	36 BOPD	36 BOPD	33 BOPD	33 BOPD