4. Plugging and Abandonment. Exhibit L outlines our abandonment procedure. This procedure provides for plugging in a manner which will not allow the movement of fluids either into or between USDW's. In addition, prior to actual plugging operations, the entire process will undergo a thorough engineering review. Should there be any recommended changes in the plan, Conoco will notify EPA at the time of notification of plugging or no later than 45 days prior to the abandonment.

5. Corrective Action. Exhibit D, pages 2 through 5, identifies the location and completion data on the two active wells and one abandoned well, penetrating the Mesa Verde, within the 1/2 mile Area of Review. These are Conoco operated wells. Data on these wells demonstrates proper construction or abandonment such that movement of fluids into or between USDW's is prohibited. Therefore, no plan for corrective action is required.

6. Notification. Evidence of proper notification to all required parties is enclosed as Exhibits B (BLM Sundry Notice) and H (all others).

7. Compliance With State of New Mexico Requirements. The radioactive tracer survey and temperature survey ran on August 17, 1989 indicated that a portion of the injected water is exiting below the State authorized Mesa Verde injection interval through old perforations in the casing at 5499'. These perforations are in the Point Lookout Sandstone within the Mesa Verde formation and our information indicates the water, though going down, is staying within the Mesa Verde. Consequently, we have requested the State amend the Order to authorize injection into the entire Mesa Verde interval. A copy of this request and their response is attached as Exhibit N. Conoco is in the process of meeting the State's requirements for modifying the order. We anticipate securing this modification by the time the EPA permit is granted.

Based on this information, which demonstrates protection of Underground Sources of Drinking Water, we request a UIC permit for injection under the parameters defined in the first paragraph. Should you require further information or have questions, please call Judy A. McLemore at (505) 397-5882.

Yours very truly,

David L. Wacker
Division Manager

JAM/tm

THE APPLICATION OF CONTINENTAL OIL COMPANY FOR A SALT WATER DISPOSAL WELL.

ILLEGIBLE

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION COMMISSION

Under the provisions of Rule 701 (C) Continental Oil Company, made application to the New Mexico Oil Conservation on May 10, 1972 for permission to complete for salt water disposal its Jicarilla Well No. 1 located in Unit A of Section 30, Township 25 North, Range 4 West, NMPM, Rio Arriba County, New Mexico.

The Secretary-Director finds:

1. That application has been duly filed under the provisions of Rule 701 (C) of the Commission Rules and Regulations;

2. That satisfactory information has been provided that all offset operators, surface owners, and the New Mexico State Engineer Office have been duly notified; and

3. That the applicant has presented satisfactory evidence that all requirements prescribed in Rule 701 (C) will be met.

4. That no objections have been received within the waiting period prescribed by said rule.

IT IS THEREFORE ORDERED:

That the applicant herein, Continental Oil Company, is hereby authorized to complete its Jicarilla Well No. 1 located in Unit A of Section 30, Township 25 North, Range 4 West, NMPM, Rio Arriba County, New Mexico, in such a manner as to permit the injection of salt water for disposal purposes into the Mesaverde formation at approximately 5171 feet to approximately 5432 feet through 2 3/8-inch tubing with a packer set at approximately 5100 feet.

IT IS FURTHER ORDERED:

That jurisdiction of this cause is hereby retained by the Commission for such further order or orders as may seem necessary or convenient for the prevention of waste and/or protection of correlative rights; upon failure of applicant to comply with any requirement of this order after notice and hearing, the Commission may terminate the authority hereby granted in the interest of conservation. That applicant shall submit monthly reports of the disposal operation in accordance with Rules 704 and 1120 of the Commission Rules and Regulations.

APPROVED at Santa Fe, New Mexico, on this 25th day of May, 1972.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

A. L. PORTER, Jr.
Secretary-Director

(November 1983)
Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Budget Bureau No. 1004-0135
Expires August 31, 1985

SUNDRY NOTICES AND REPORTS ON WELLS

(Do not use this form for proposals to drill or to deepen or plug back to a different reservoir. Use "APPLICATION FOR PERMIT—" for such proposals.)

5. LEASE DESIGNATION AND SERIAL NO.: 6090000410

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Jicarilla Apache

7. UNIT AGREEMENT NAME:

1. OIL WELL ☐ GAS WELL ☐ OTHER: Saltwater Disposal

8. FARM OR LEASE NAME: Jicarilla 30

2. NAME OF OPERATOR: Conoco Inc.

9. WELL NO.: #1

3. ADDRESS OF OPERATOR: P.O. Box 460 - Hobbs, NM 88240

10. FIELD AND POOL, OR WILDCAT: Und. Mesaverde

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.* See also space 17 below.) At surface: 915' FNL & 330' FEL

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 30 - 25N - 4W

14. PERMIT NO.: 30-039-05828

15. ELEVATIONS (Show whether DF, RT, GR, etc.): 6990' KB

12. COUNTY OR PARISH: Rio Arriba

13. STATE: NM

16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
TEST WATER SHUT-OFF	☐	PULL OR ALTER CASING	☐	WATER SHUT-OFF	☐	REPAIRING WELL	☐
FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			☐
(Other) Apply for injection permit w/EPA				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

17. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

This is to inform you that we are applying to the EPA for an injection permit under the "Underground Injection Control" program, as the EPA will have UIC authority on Indian lands effective 11-25-89. We are requesting to inject at 1800 psig, at a rate of 1 BPM and at a depth of 4846' to 5586' KB.
We have been disposing of water into this well for approximately 15 years under authority granted by the Oil Conservation Division.

Approved Subject to EPA approval

18. I hereby certify that the foregoing is true and correct

SIGNED W.W. Baker TITLE Administrative Supervisor DATE August 29, 1989

(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____

CONDITIONS OF APPROVAL, IF ANY:

APPROVED
SEP 18 1989
FOR AREA MANAGER

*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Exhibit B Page

Form 3160-5
(November 1983)
Formerly 9-331)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE* (Other instructions on reverse side)

Budget Bureau No. 1004-0135
Expires August 31, 1985

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FRACTURE TREAT	☐	MULTIPLE COMPLETE	☐	FRACTURE TREATMENT	☐	ALTERING CASING	☐
SHOOT OR ACIDIZE	☐	ABANDON*	☐	SHOOTING OR ACIDIZING	☐	ABANDONMENT*	☐
REPAIR WELL	☐	CHANGE PLANS	☐	(Other)			☐
(Other) Apply for injection permit w/EPA				(NOTE: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)			

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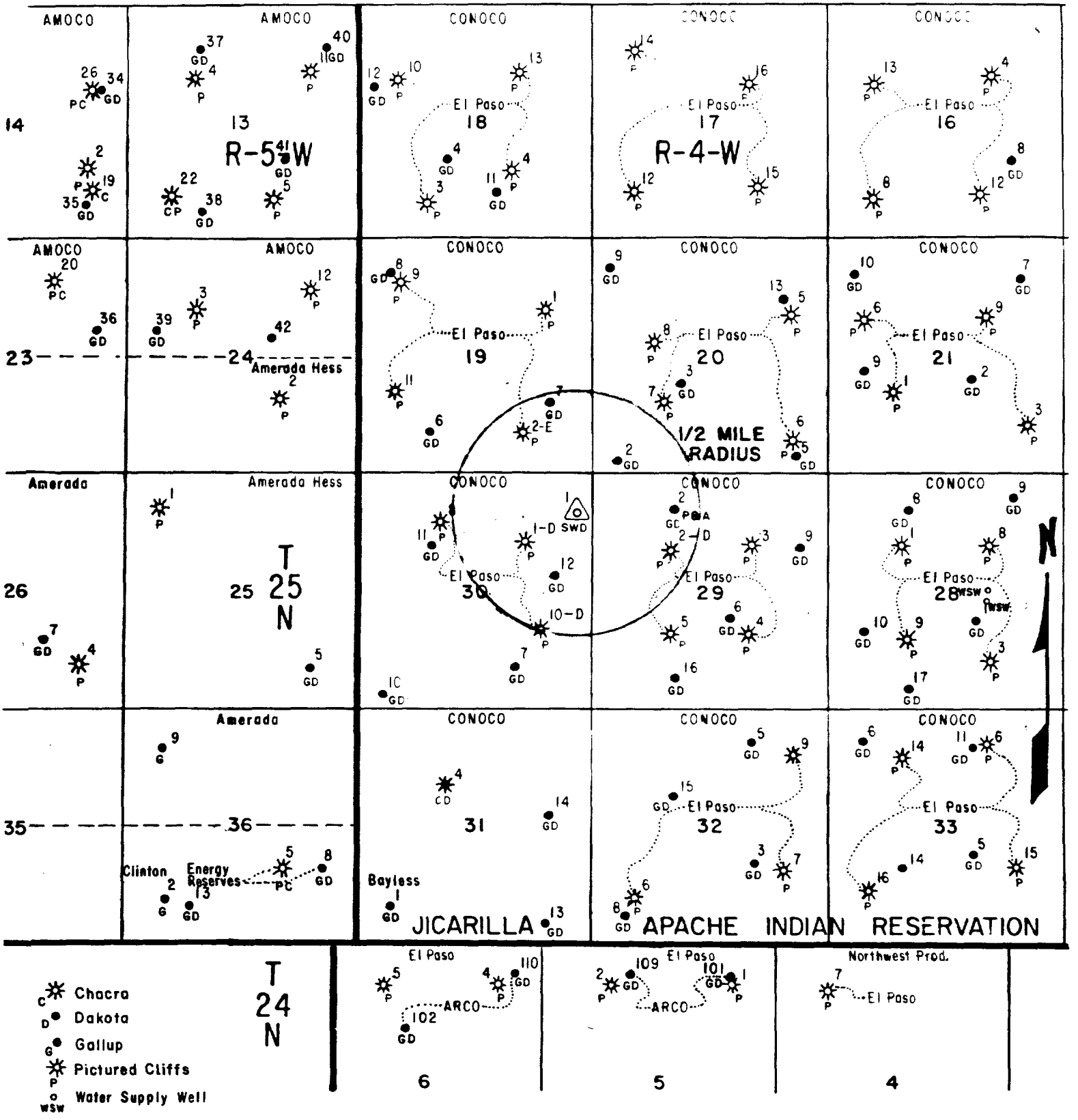
(This space for Federal or State office use)

APPROVED BY _____ TITLE _____ DATE _____
CONDITIONS OF APPROVAL, IF ANY:

APPROVED
SEP 18 1989
AREA MANAGER

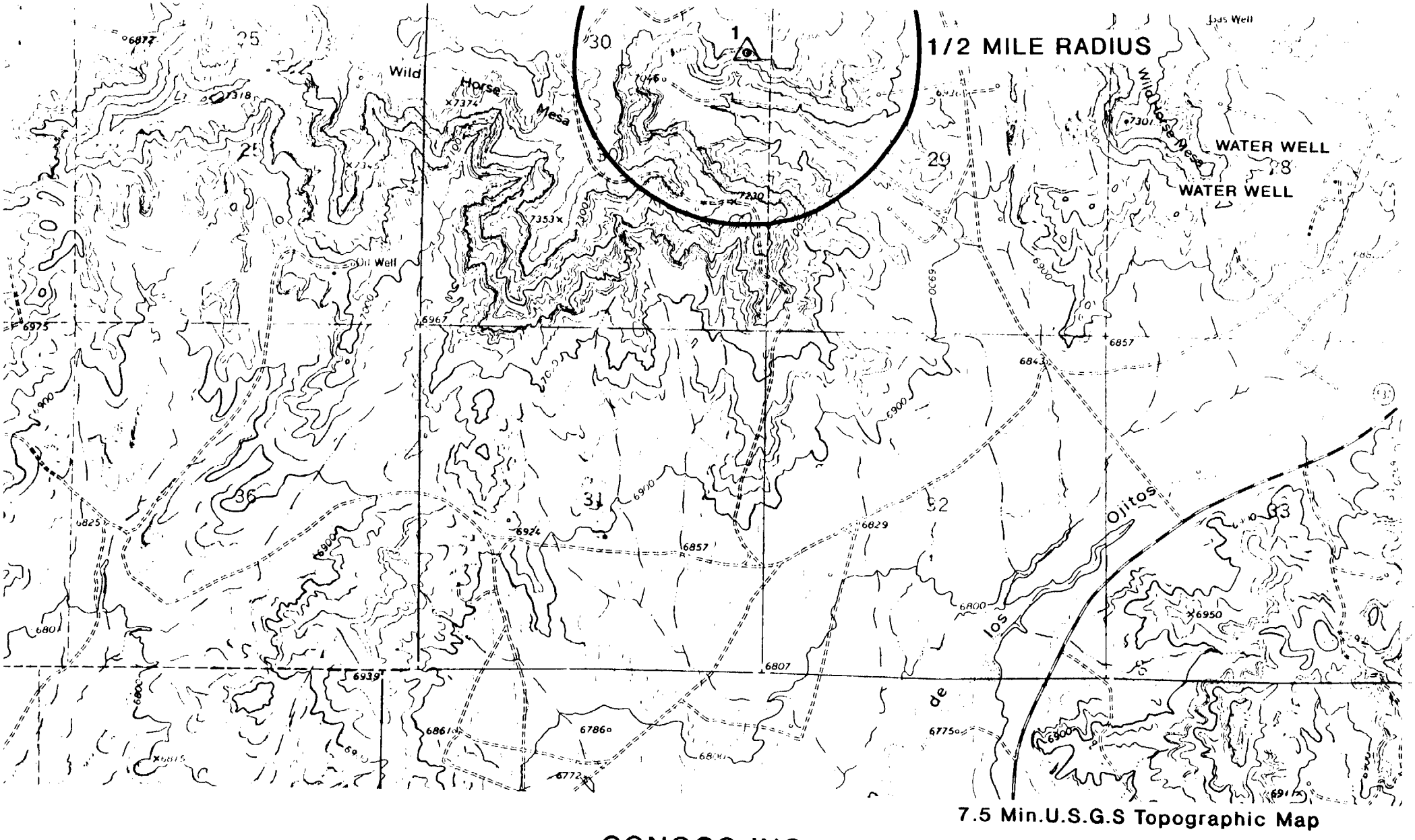
*See Instructions on Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person



JICARILLA 30 LEASE--WELL NO.1

Rio Arriba County, New Mexico

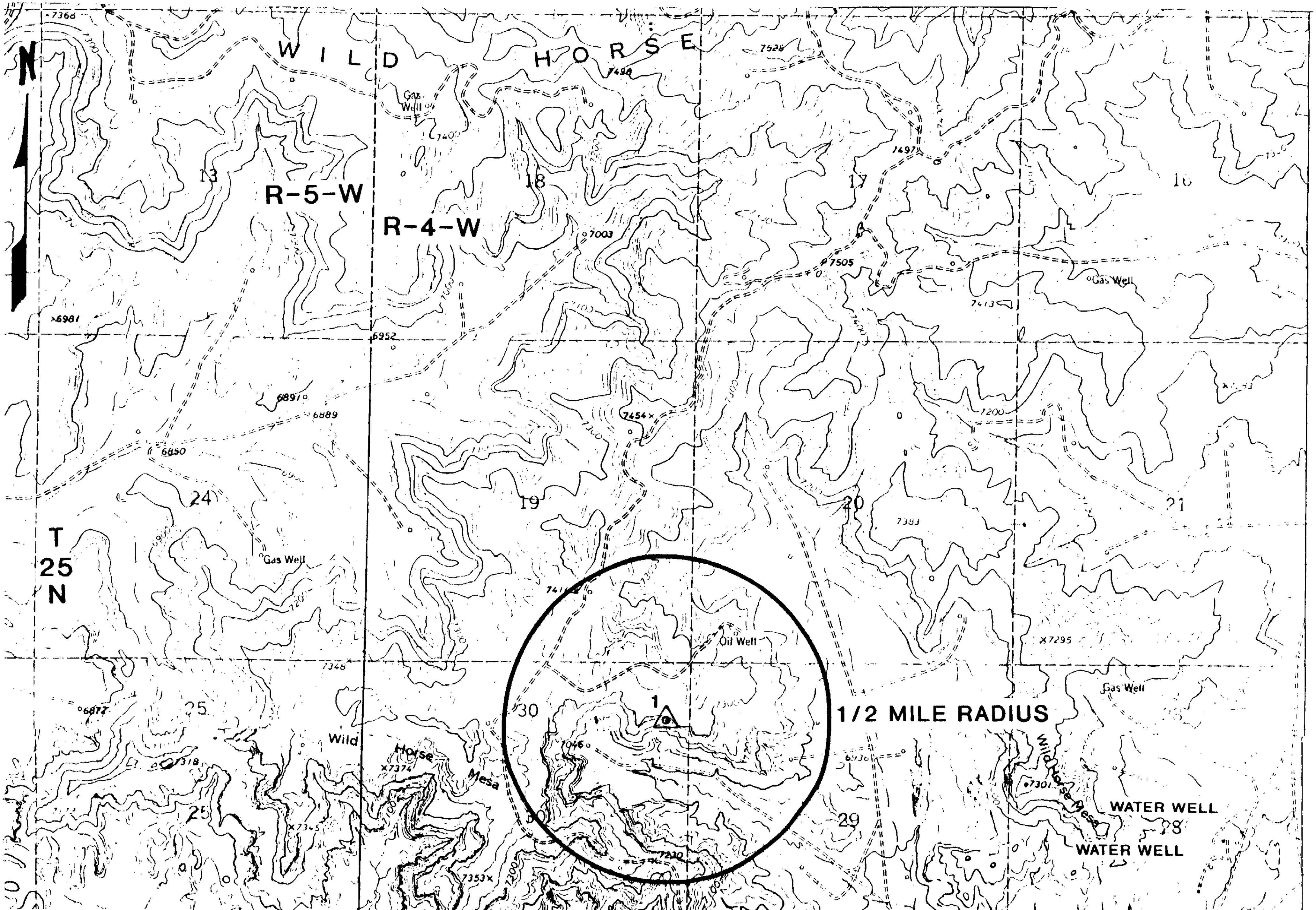


7.5 Min.U.S.G.S Topographic Map

CONOCO INC.

JICARILLA LEASE WELL NO.1

Rio Arriba County, New Mexico



N
WILD HORSE
R-5-W
R-4-W
T
25
N
13
18
17
16
24
19
20
21
25
30
29
28
Gas Well
Oil Well
1
1/2 MILE RADIUS
Wild Horse Mesa
WATER WELL
WATER WELL

WELLS WITHIN 1/2 MILE OF INJECTION WELL
NOT PENETRATING THE INJECTION ZONE

WELL NAME:	JICARILLA 2-E
LOCATION:	890' FSL, 1550' FEL, SEC. 19, T25N, R4W
ELEV:	7340' DF
TD:	3663'
PBTD:	3650'
OPERATOR:	Meridian Oil Inc.

WELL NAME:	JICARILLA 2-D
LOCATION:	1750' FNL, 1750' FWL, SEC. 29, T25N, R4W
ELEV:	7023' DF
TD:	3315'
PBTD:	3265'
OPERATOR:	Meridian Oil Inc.

WELL NAME:	JICARILLA NO. 1-D
LOCATION:	1550' FNL, 1500' FEL, SEC. 30, T25N, R4W
ELEV:	7070' DF
TD:	3340'
PBTD:	3260'
OPERATOR:	Meridian Oil Inc.

WELL NAME:	JICARILLA NO. 10-D
LOCATION:	1760' FSL, 1150' FWL SEC 30, T25N, R4W
ELEV:	7032' DF
TD:	3529'
PBTD:	3517'
OPERATOR:	Meridian Oil Inc.

rlt
OFFSETS.DOC

TABULATION OF WELLS WITHIN 1/2 MILE OF INJECTION WELL
WHICH PENETRATE THE INJECTION ZONE

WELL NAME: Jicarilla 30 No. 12
OPERATOR: Conoco Inc.
LOCATION: 2210' FNL, 990' FEL, Sec. 30, T25N, R4W
Rio Arriba County, NM

DATE DRILLED:	01/03/79	TD: 7805'	CURRENT PRODUCTION
DATE COMPLETED:	04/26/79	PBTD: 7737'	BOPD 5 / BWPD 2 / MCFD 96
SURFACE ELEV:	7021'	STATUS: ACTIVE	
DATUM:	14' AGL		

HOLE SIZE	CASING RECORD SIZE	GRADE	WEIGHT	DEPTH	CEMENT SIZE QUANTITY	CEMENT & ADDITIVES	TOC
12-1/4"	8-5/8"	K-55	24#/ft	0-992'	400 sks	class "B" w/4% gel, 2% CaCl, and 1/4#/sk flocele	surface (circ.)
					150 sks	class "B" w/2% CaCL, and 1/4#/sk flocele	
7-7/8"	5-1/2"	K-55	15.5#/ft	0-	1st Stage:		1820' temp. survey
			17.0#/ft	7805'	400 sks	liteweight cement w/2% CaCl, .75% CFR-2, 1/4#/sk flakes	
					350 sks	class "B" w/2% CaCl, 1/4#/sk flakes	
	DV TOOL @ 5145				2nd Stage:		
					325 sks	liteweight cement w/2% CaCl, 1/4#/sk flakes	
Additional Detail: Squeeze Cement through defective DV Tool					300 sks	class "B" w/2% CaCl and 1/10% fluid loss additive	

Formations Open to Wellbore:

Gallup: 6597', 6599', 6601', 6603', 6628', 6630', 6632', 6634', 6636', 6638', 6665', 6667', 6669' w/ 1 JSPF.
Dakota: 7430', 7432', 7434', 7436', 7438', 7440', 7570', 7572', 7574', 7576', 7584', 7586', 7616', 7618', 7620', 7622' w/ 1 JSPF.

rlt
OFFSETB.DOC

TABULATION OF WELLS WITHIN 1/2 MILE OF INJECTION WELL
WHICH PENETRATE THE INJECTION ZONE

WELL NAME: Jicarilla 20 No. 2
OPERATOR: Conoco Inc.
LOCATION: 349' FSL, 596' FWL, Sec. 20, T25N, R4W
Rio Arriba County, NM

DATE DRILLED: 02/02/59 TD: 7237' CURRENT PRODUCTION
DATE COMPLETED: 03/09/59 PBTD: 7237' BOPD BWPD MCFD
SURFACE ELEV: 7303' STATUS: ACTIVE 1 0 17
DATUM: 12' AGL

HOLE SIZE	CASING RECORD SIZE	GRADE	WEIGHT	DEPTH	CEMENT SIZE QUANTITY	CEMENT & ADDITIVES	TOC
17-1/4"	13-3/8"	H-40	48#/ft	0-111'	175 sks	Regular cement	surface (circ.)
7-7/8"	5-1/2"	K-55	14.0#/ft	0-	1st Stage:		4900'
			15.5#/ft	7020'	320 sks	Regular cement w/2% gel and 325 ft3 stratacrete	calc.
	DV TOOL @ 3696'				2nd Stage:		
					125 sks	Regular cement w/2% gel and 125 ft3 stratacrete	
4-3/4"	4-1/2"	Grade E	12.93#/ft	7008' -7224'			

Additional Cement Detail:		
Block squeeze @ 5149', 5336', 5608' to prepare to perf Mesaverde interval	300 sks	100 sks at each depth
Squeezed cement into Mesaverde perfs from 5149'-5210' (Unproductive)	100 sks	class "C"
Squeezed cement into Mesaverde perfs from 5550'-5850' (Unproductive)	600 sks	class "C"

Formations Open to Wellbore:

Gallup: 6860'-6870', 6880'-6915', 6940'-6980' w/4 JSPF
6870'-6880', 6932'-6940', w/8 JSPF
7008'-7224' perforated liner.

rlt
OFFSETC.DOC

TABULATION OF WELLS WITHIN 1/2 MILE OF INJECTION WELL
WHICH PENETRATE THE INJECTION ZONE

WELL NAME: Jicarilla 30 No. 2
OPERATOR: Conoco Inc.
LOCATION: 810' FNL, 1825' FWL, Sec. 29, T25N, R4W
Rio Arriba County, NM

DATE DRILLED: 11/19/63 TD: 6946'
DATE COMPLETED: 12/19/63 PBTD: 0
SURFACE ELEV: 7025' STATUS: P&A'd
DATUM: 11' AGL

CURRENT PRODUCTION

BOPD	BWPD	MCFD
0	0	0

HOLE SIZE	CASING RECORD SIZE GRADE WEIGHT DEPTH	CEMENT SIZE QUANTITY CEMENT & ADDITIVES	TOC
12-1/4"	8-5/8" J-55 24#/ft 0-310'	185 sks Regular cement	surface (circ.)
7-7/8"	5-1/2" J-55 15.5#/ft 0-6565' DV TOOL @ 5660'	1st Stage: 100 sks Regular cement 2nd Stage: 200 sks Regular cement w/2% gel and 200 ft3 stratacrete	2750' calc.
4-5/8"	4" FJ-40 11.34#/ft 6512'- SLOTTED -6946'	UNCEMENTED	

Additional Detail:

ATTACHED WELLBORE SCHEMATIC
SHOWS ADDITIONAL CEMENT DETAIL AND
HOW THE WELL WAS P&A'd

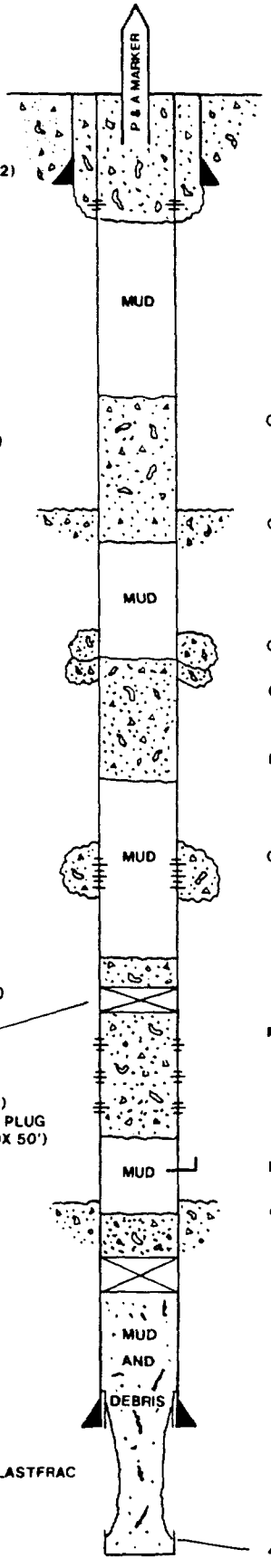
Formations Open to Wellbore:

NONE

rlt
OFFSETD.DOC

JICARILLA 30 NO. 2

810' FNL, 1825' FWL
SEC. 29, T25N-R4W
RIO ARRIBA COUNTY, NM



GROUND LEVEL

SURFACE PLUG: 360'-SURFACE
(120 SKS CLASS "B" W/2%CACL2)

PERFORATED @ 360' W/4 JSPF FOR SURFACE PLUG

8 5/8", 24#/FT J-55 CSG @ 310'
CEMENTED W/185 SKS REGULAR CEMENT
(CIRC TO SURFACE)

OJO ALAMO PLUG: 2540'-2940'
(45 SKS CLASS "B" W/2% CACL2)

OJO ALAMO: 2590'

CALCULATED CEMENT TOP @ 2750' (2ND STAGE)

CASING LEAK: 3212'-3227' SQUEEZED W/85 SKS CLASS "B" NEAT
(PRESSURE TESTED)

CASING LEAK 3192'-3223' SQUEEZED W/300 SKS DOWELL 10-4 RFC
(PRESSURE TESTED)

PICTURED CLIFFS PLUG: 3190'-3330'
(16 SKS CLASS "B" W/2% CACL2)

PICTURED CLIFFS: 3242'

CHACRA PERFS: 4136'-4142' W/4 JSPF
SQUEEZED W/100 SKS CLASS "A" CEMENT & .5% HALAD-9
(PRESSURE TESTED TO 1000 PSI)

6 SKS CLASS "B" W/2% CACL2
ON TOP OF RETAINER (APPROX 50')

CEMENT RETAINER @ 4900'

MESAVERDE PERFS: 5444'-5476' W/2 JSPF
5522'-5528' W/2 JSPF
5540'-5560' W/2 JSPF

MESAVERDE PLUG: 4900'-5560'
(125 SKS CLASS "B" W/2% CACL2)
6 SKS CEMENT ON TOP OF BRIDGE PLUG
BP @ (6,510) (APPROX 50')

DV TOOL (5660')

CALCULATED CEMENT TOP @ 5950' (1ST STAGE)

5 1/2" 15.5#/FT J-55 CSG @ 6565"
CEMENTED:
1ST STAGE: 100 SKS REGULAR CEMENT
2ND STAGE: 200 SKS REGULAR CEMENT,
2% GEL AND 200 FT3 STRATOCRETE

LINER COLLAPSED FROM BLASTFRAC

4", 11.34#/FT, FJ-40 SLOTTED LINER
FROM 6512'-6946' (UNCEMENTED)

NOTE: P & A PROCEDURE APPROVED
AND WITNESSED BY NMOCD

RLT

JICARILLA 30 No. 1

915' FNL, 330' FEL
SEC. 30, T25N, R4W
RIO ARRIBA COUNTY, NM

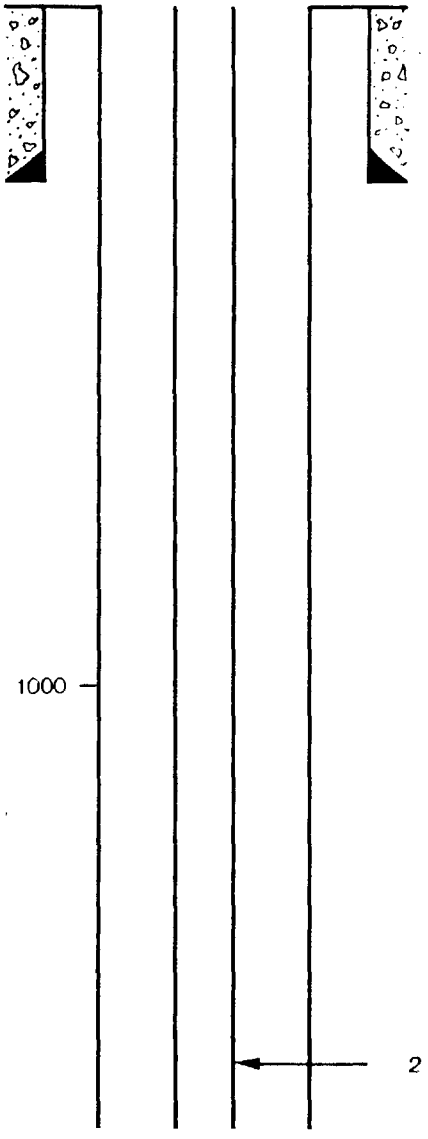
FORMATION

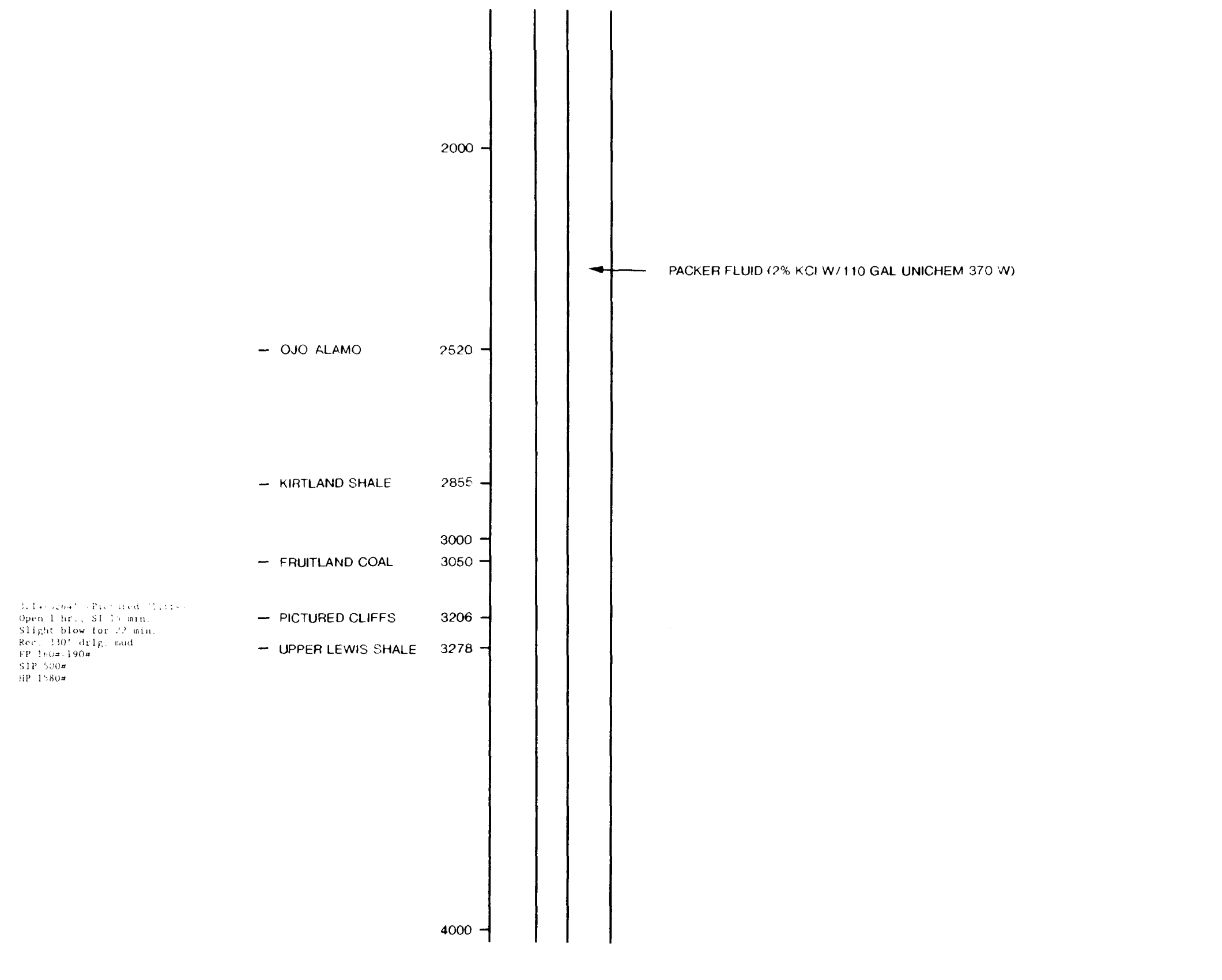
DEPTH

KB 6991' ASL

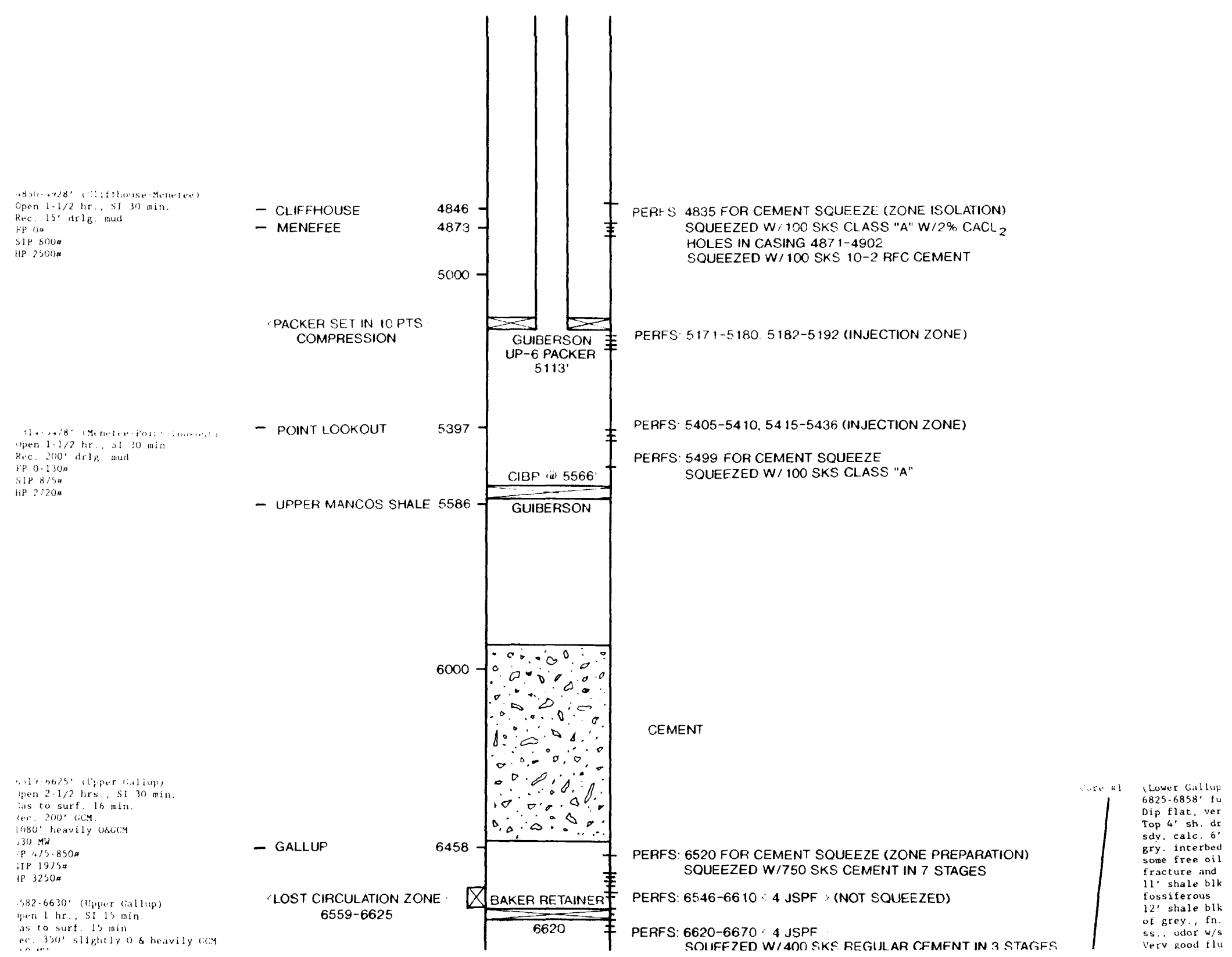
GROUND LEVEL 6980' ASL

NOTE: ALL DEPTHS ARE MEASU





Open 1 hr., SI 15 min.
Slight blow for 22 min.
Rec. 230' drlg. mud
FP 160#-190#
SIP 500#
HP 1580#



4850-4928' (Cliffhouse-Menefee)
Open 1-1/2 hr., SI 30 min.
Rec. 15' drlg. mud
FP 0#
SIP 800#
HP 2500#

4454-5478' (Menefee-Point Lookout)
Open 1-1/2 hr., SI 30 min
Rec. 200' drlg. mud
FP 0-130#
SIP 875#
HP 2720#

6519-6625' (Upper Gallup)
Open 2-1/2 hrs., SI 30 min.
Gas to surf. 16 min.
Rec. 200' GCM.
1080' heavily O&GCM
30 MW
FP 475-850#
SIP 1975#
HP 3250#

6582-6630' (Upper Gallup)
Open 1 hr., SI 15 min.
Gas to surf. 15 min
Rec. 350' slightly O & heavily GCM

6819-6890' (Lower Gallup)
Open 2-1/2 hr., SI 30 min.
Rec. 150' slightly gas cut mud
w/slight rainbow of oil.
FP 0-75#
SIP 1225#
HP 3300#

[illegible]
Open 2 hr., SI 30 min.
Gas to surface 2 min.
Rec. 180' O & GCM
180' free oil
FP 135#
SIP 190#
HP 3630#

#8 7408-7475' Packer failed

#9 7405-7480' (Dakota "D")
Open 2-1/2 hr., SI 30 min.
Gas to surface 1 hr. 25 min.
Rec. 120' mud.
FP 50#
SIP 80#
HP 3660#

#10 7545-7587' (Dakota "J")
Open 2 hrs. 10 min., SI 30 min
Rec. 90' drlg. mud.
FP 0#
SIP 0#
HP 3750#

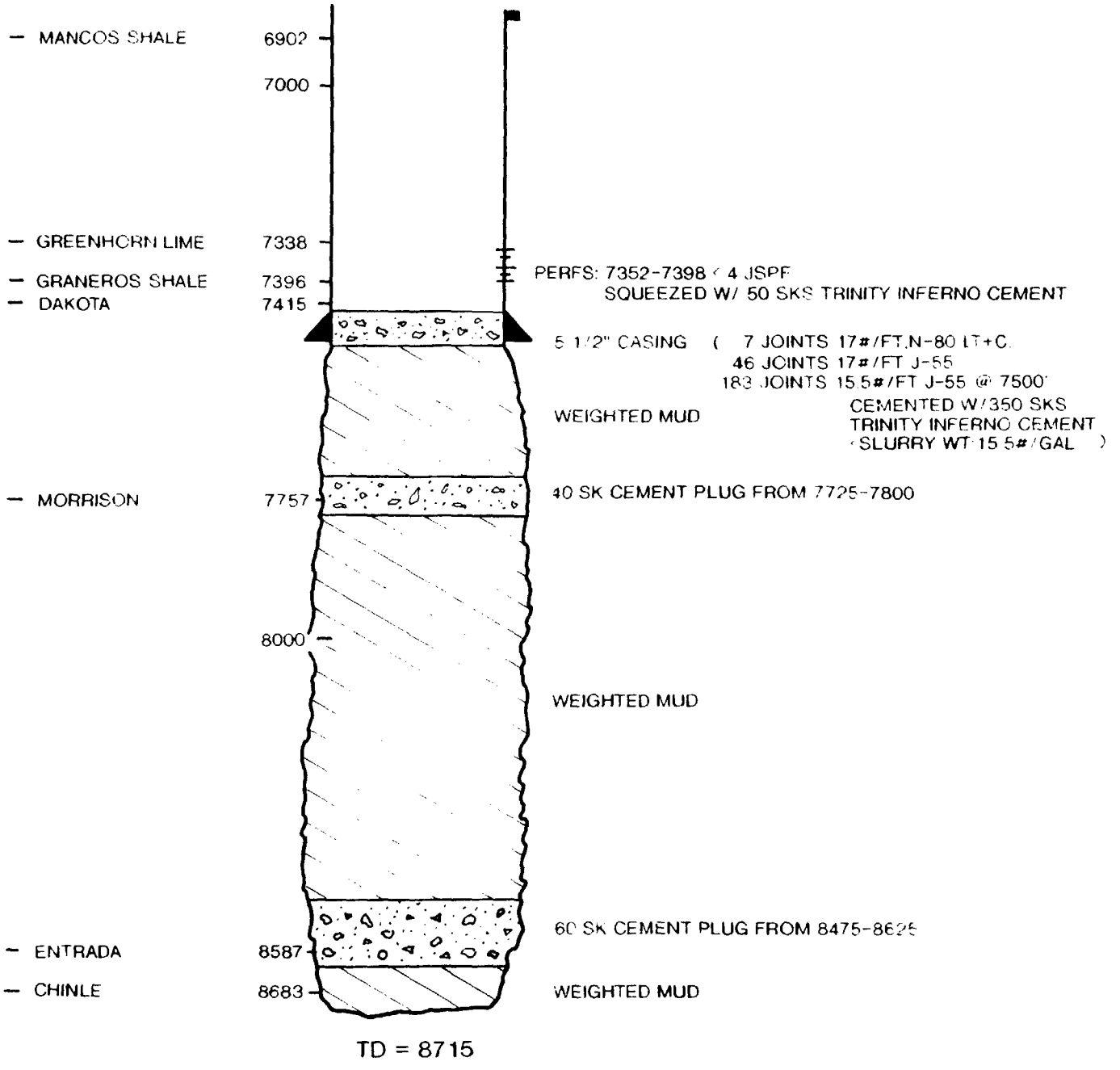
#11 7600-7631' (Dakota "J")
Open 1 hr., SI 15 min.
Rec. 300' vry slightly gas cut mud
FP 250#
SIP 250#
HP 3925#

#12 7650-7718' Packer failed.

#13 7680-7718' (Dakota "M")
Open 1 hr., SI 15 min.
Rec. 150' mcw
FP 0#
SIP 2525#
HP 3925#

#14 7754-7797' (Morrison)
Open 1 hr., SI 15 min.
Rec. 100' drlg. mud
FP 200-175#
SIP 175#
HP 4000#

#[illegible] [illegible] (Chinle-Entrada)
Open 1 hr., SI 20 min.
1000' wtr. cushion.
Rec. 1000' wtr. cushion.
3940' brackish wtr w/sulphur odor
FP 850-2225#
SIP 3200#
HP 4350#



ss., gr
Slight
fluores

Core #3 (Dakota
7550-75
Top 8'
14' ss.
well so
inclusi
fractur
shows.
1.5' ss
quartzi
shale s
13.5' s
med. gr
inclusi

Core #4 (Dakot
7589-7
10' ss
hard,
No odo

Core #5 (Dakot
7705-7
Top 1'
1.5' s
soft,
7.5' s
soft,
Interb
conglo
water

Core #6 (Dakot
7718-7
Top 2'
10' ss
sorted
clear
water
1' pet
Pebble
dia.

JICARILLA 30 NO. 1

Well History

12/22/53: Spud date. Started drilling with 13-3/4" bit.

12/23/53: Ran 10-3/4", J-55, 32.75#/ft, ST&C, National smls csg to 250'. Cemented with 250 sks Halliburton Ideal Com. Cement (circ).

12/27/53: Pressure tested to 1000 psi for 1 hour before drilling out. Pressure tested to 500 psi for 1/2 hour after drilling out w/8-3/4" bit.

1/2/54: DST #1 3214-3264' (Note: **Detailed DST information attached separately)**

1/9/54: DST #2 4850-4928'

1/12/54: DST #3 5314-5477'

1/18/54: Lost circulation 6559-6625'. Corrective measures: added fiberseal, hulls and mag fiber to gelled water system.

1/19/54: DST #4 6519-6625'

1/20/54: DST #5 6582-6630'

1/23/54: Core #1 6825-6858'

1/25/54: DST #6 6819-6890'

1/25/54: Core #2 6860-6889'

1/31/54: DST #7 7340-7405'

2/1/54: DST #8 7408-7475'

2/2/54: DST #9 7405-7480'

2/4/54: DST #10 7545-7587'

2/4/54: Core #3 7550-7587'

2/6/54: Core #4 7589-7607'

2/6/54: DST #11 7600-7631'

2/8/54: Core #5 7705-7716'

2/9/54: DST #12 7650-7718'

2/9/54: DST #13 7680-7718'

2/10/54: Core #6 7718-7736'

2/12/54: DST #14 7754-7797'

2/27/54: Core #7 8611-8621'

2/27/54: DST #15 8585-8621'

3/2/54: Set 60 sx cmt plug 8475-8625'. Set 40 sx cmt plug 7725-7800'.

3/3/54: Ran 5-1/2", (7 joints 17#, N-80, LT&C smls; 46 joints 17#, J-55, LT&C smls; 183 joints 15.5#, J-55, LT&C smls) to 7500'. Cemented w/350 sks Trinity Inferno Slo-Set cmt, slurry wt: 15.5#/gal. Drilled to 7430'.

3/7/54: Perf 7352-7398', 4 JSPF (Lane Wells). Acidized w/5000 gal Dowell 15% HCl. Swabbed 12 bbls/hr water, slighty gassy w/rainbow of oil.

3/8/54: Set Baker retainer @ 7301'. Squeezed w/50 sks Trinity Inferno Cement.

3/10/54: Drilled out retainer to PBTD @ 7430'. Perf 6518-6520' w/6 holes (Lane Wells).

3/13/54: Set Baker retainer @ 6500'. Squeezed w/100 sks Regular cement. Squeezed w/100 sks Trinity Inferno Cement.

3/14/54: Squeezed w/100 sks Trinity Inferno Cement.

3/15/54: Squeezed w/100 sks Regular cement. Squeezed w/100 sks Regular cement.

3/16/54: Squeezed w/150 sks Regular cement.

3/17/54: Set Baker retainer @ 6480'. Squeezed w/100 sks Regular cement with 1/4#/sk flow seal.

3/18/54: Drilled cement retainers and cement to PBTD @ 7430'.

3/20/54: Dry tested squeeze w/Johnson tester.

3/21/54: Perf: 6620-6670' w/200 shots. 4 JSPF (Lane Wells).

3/22/54: Acidized w/2000 gal Dowell 15% HCl. Swabbed spent acid w/show of oil.

3/24/54: Set Baker retainer @ 6509'. Squeezed w/200 sks Regular cement.

3/25/54: Squeezed w/100 sks Regular cement. Squeezed w/100 sks Regular cement.

3/27/54: Drilled retainer and pushed to 6620'.

3/28/54: Perf 6546-6610' w/252 shots 4 JSPF (Lane Wells). Acidized w/2000 gal Dowell Mud Acid.

3/30/54: Sand Frac'd w/3200 gal oil and 2500# sand.

3/31/54: Swabbed load oil w/small amount of gas and formation oil.

4/2/54: P&A'd well by filling hole w/heavy mud and pumping 15' plug at surface. Released rig.

6/22/73: Re-entered well. Welded on casing head.

6/23/73: Set 5-1/2" csg slips, installed BOP. Started drilling surface plug and circulated weighted mud.

6/24/73: Spotted 50 sks Class "A" cement w/2% $CaCl_2$ from 6454-5934'.

6/26/73: Set Guiberson type bridge plug @ 5566'. Perfed 5499' w/4 JSPF. Squeezed 100 sks Class "A" cement below packer.

6/27/73: Tested perfs to 1000 psi. Perfed 4835' w/4 JSPF. Squeezed 100 sks Class "A" w/2% $CaCl_2$ below packer.

6/28/73: Drilled out cement. Perfed 5171-80', 5182-92' w/4 JSPF. Acidized w/1300 gal Dowell 15% HCl, + 1/2 gal U-66 ISIP = 950 psi. Perfed 5405-10', 5415-36' w/4 JSPF. Acidized w/950 gal Dowell 15% HCl, 112 gal U-66. ISIP = 850 psi.

6/29/73: Set Guiberson UP-6 on 167 jts 2-3/8" J-55 tbg @ 5121' in 10 pts. tension.

6/30/73: Injected 375 BWPD @ 800 psi.

2/18/77: Swabbed well because oil had been injected.

9/11/79: Injection pressure 1400 psi @ 125 BWPD.

3/29/79: Acidized w/4000 gal HCl in 3 stages. 3-1/2 BPM @ 3100 psi, 1 hr SI = 800 psi.

1/3/80: Flushed tbg w/15 bbls solvent. Acidized w/6000 gal 15% HCl-NE-FE in 3 stages using 160# rock salt in 210 gal 10#/gal brine water and 30#/1000 gal guar gum. 3-1/4 BPM @ 2500 psi. ISIP = 1400 psi. 1 hr SI = 1350 psi. Results: lowered inj. pressure to 800 psi.

5/22/84: Acidized w/36 bbls 15% NE-FE-HCl and 42 gal N-L Perasol in 3 stages. Diverted w/gelled 10 ppg brine w/40#/gal guar and 120# graded rock salt. ISIP = 1200 psi. 15 min SI - 1200 psi. Result: 215 BWPD @ 915 psi.

12/7/84: Acidized w/1512 gal HCl in 3 stages. Divert w/10# brine w/50#/gal guar, rock salt and fine salt.

12/16/85: Holes @ 4871-4902'. Squeezed 100 sks 10-2 RFC cement. Test to 1000 psig. Drilled out. Cleaned out to PBTD. Set Guiberson UP-6 packer @ 5113' in 10 pts compression. Packer fluid - 2% KCl w/110 gal Unichem 370 W.

3/4/86: Acidized w/8445 gal 15% HCl in 3 stages. Divert w/10#/gal brine w/40#/gal guar and 200# salt. Pmpd at 5 BPM. ISIP - 1350 psi. 15 min SI - 1310 psi.

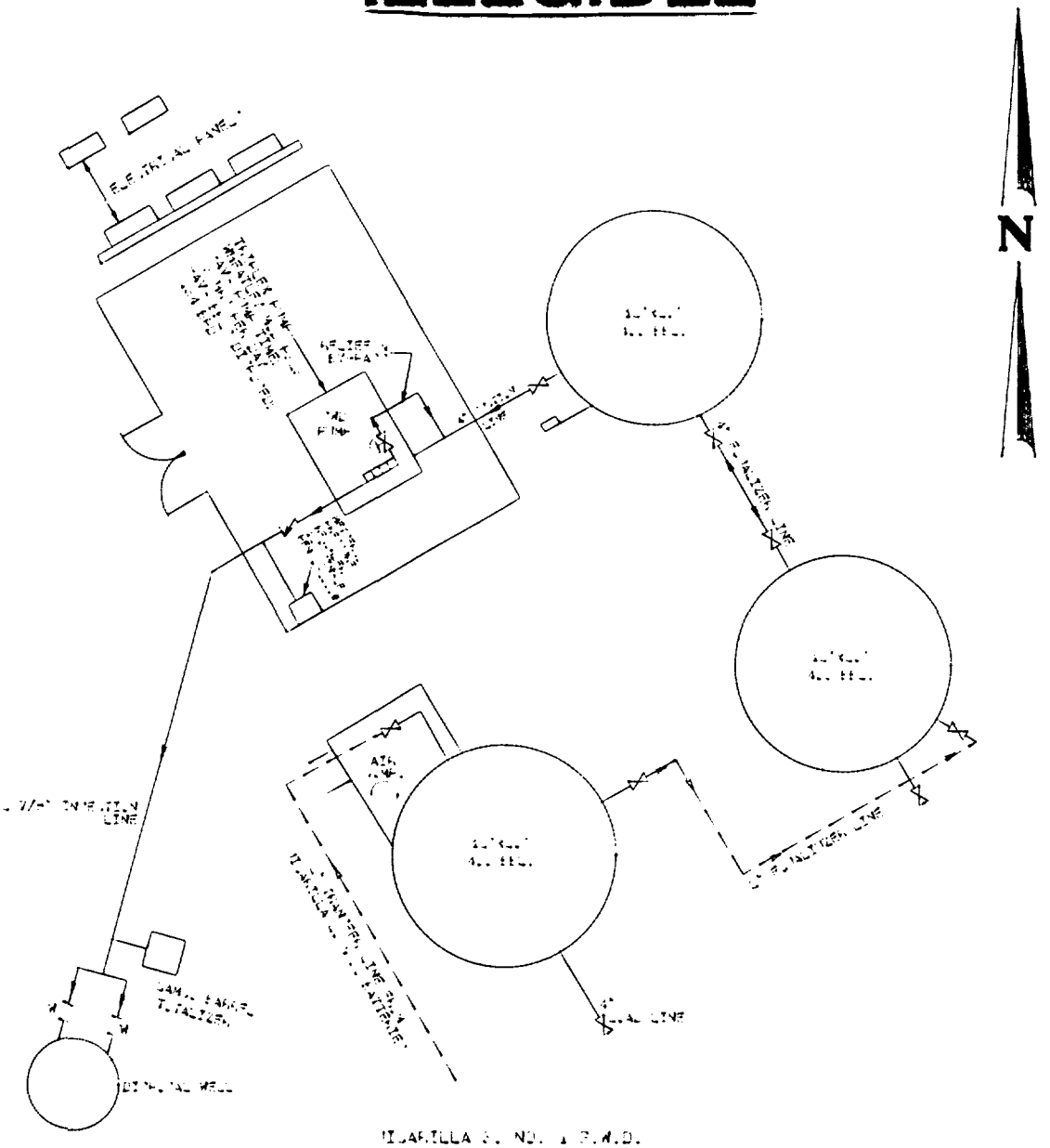
3/4/87: Cancelled September 1, 1975 agreement allowing Mobil to dispose of produced water in the Jicarilla 30 No. 1.

8/16/89: Acidized w/4000 gal 15% HCl-NE-FE in 3 stages. Diverted w/3% NaCl w/30#/1000 gal guar gum and 2 ppg rock salt between stages. Results: no improvement. ISIP = 1460

8/17/89: Ran step-rate test and radioactive injection profile. Results: 50% of fluid is being injected through holes @ 5405-5436' and 50% of fluid is moving down through holes @ 5499'.

RLT:mjm
JIC30#1.HIS

ILLEGIBLE



ILLEGIBLE

INJECTION DATA

TYPE OF INJECTION WELL: Existing Class II - SWD

INJECTION DATA:

Approximate number of days operating per year: 46

Injection Method: Cyclic with positive displacement pump.

Rate (B/D): Average 134 Maximum 150

Wellhead pressure while injecting water (psig): Average 1600 Maximum 1800

Fluid: The TDS and Specific Gravity of fluids being injected is detailed in the attached analysis.

Source: Gallup, Dakota, and Mesaverde formations.

Additives to water: Biocides will be added to the water when necessary to control bacteria growth and associated corrosion.

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INJDATA.DOC

WATER ANALYSIS

The water that is injected into the Jicarilla 30 No. 1 SWD well is trucked or piped from many Conoco leases. Therefore, I have included water analysis from each of these leases. Also, leases that produce from multiple horizons have individual formation analysis. A summary of the leases and formations included in this review are listed below.

LEASES	FORMATIONS
Northeast Haynes	Gallup/Dakota
AXI Apache J	Mesaverde
AXI Apache K	Mesaverde
AXI Apache M	Mesaverde
AXI Apache N	Mesaverde
AXI Apache O	Mesaverde
Jicarilla 20	Gallup/Dakota
Jicarilla 22	Gallup/Dakota
	Mesaverde
Jicarilla 28	Gallup/Dakota
Jicarilla 30	Gallup/Dakota

NOTE: The Gallup and Dakota formations are downhole commingled on the above mentioned leases. Also, the Mesaverde is surface commingled with the Gallup/Dakota on the Jicarilla 22 lease.

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WATER.DOC

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707 North Leech P.O.Box 1499

Hobbs, New Mexico 88240

Company : CONOCO, INC
Date : 08-31-1989
Location: Haynes Battery (on 8-29-89)

	Sample 1
Specific Gravity:	1.009
Total Dissolved Solids:	11970
pH:	7.79
IONIC STRENGTH:	0.202

CATIONS:		me/liter	mg/liter
Calcium	(Ca^{+2})	2.60	52.0
Magnesium	(Mg^{+2})	3.00	36.4
Sodium	(Na^{+1})	187	4290
Iron (total)	(Fe^{+2})	0.265	7.40
Barium	(Ba^{+2})	0.013	0.900
ANIONS:			
Bicarbonate	(HCO_3^{-1})	24.0	1460
Carbonate	(CO_3^{-2})	0	0
Hydroxide	(OH^{-1})	0	0
Sulfate	(SO_4^{-2})	13.5	650
Chloride	(Cl^{-1})	155	5480

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86°F	30°C	0.54	-34
120°F	49°C	1.4	-34

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707 North Leech P.O.Box 1499

Hobbs, New Mexico 88240

Company : CONOCO, INC
Date : 08-31-1989
Location: J-214 - Mesa Verde (on 8-29-89)

	Sample 1
Specific Gravity:	1.002
Total Dissolved Solids:	3234
pH:	7.38
IONIC STRENGTH:	0.053

CATIONS:		me/liter	mg/liter
Calcium	(Ca^{+2})	1.20	24.0
Magnesium	(Mg^{+2})	0.300	3.64
Sodium	(Na^{+1})	50.4	1160
Iron (total)	(Fe^{+2})	0.648	18.1
Barium	(Ba^{+2})	0.039	2.70
ANIONS:			
Bicarbonate	(HCO_3^{-1})	8.00	488
Carbonate	(CO_3^{-2})	0	0
Hydroxide	(OH^{-1})	0	0
Sulfate	(SO_4^{-2})	0.191	9.17
Chloride	(Cl^{-1})	43.7	1550

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86°F	30°C	-0.23	-19
120°F	49°C	0.67	-19

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707 North Leech P.O.Box 1499

Hobbs, New Mexico 88240

Company : CONOCO, INC
Date : 08-31-1989
Location: K lease - Mesa Verde (on 8-29-89)

	Sample 1
Specific Gravity:	1.003
Total Dissolved Solids:	3935
pH:	7.15
IONIC STRENGTH:	0.067

CATIONS:		me/liter	mg/liter
Calcium	(Ca^{+2})	1.33	26.7
Magnesium	(Mg^{+2})	2.27	27.5
Sodium	(Na^{+1})	61.8	1420
Iron (total)	(Fe^{+2})	2.22	62.0
Barium	(Ba^{+2})	0.090	6.20
ANIONS:			
Bicarbonate	(HCO_3^{-1})	5.40	329
Carbonate	(CO_3^{-2})	0	0
Hydroxide	(OH^{-1})	0	0
Sulfate	(SO_4^{-2})	0.208	10.0
Chloride	(Cl^{-1})	59.8	2120

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86°F	30°C	-0.64	-22
120°F	49°C	0.26	-22

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707 North Leech P.O.Box 1499

Hobbs, New Mexico 88240

Company : CONOCO, INC
Date : 08-31-1989
Location: M Lease - Mesa Verde (on 8-29-89)

	Sample 1
Specific Gravity:	1.009
Total Dissolved Solids:	13041
pH:	7.74
IONIC STRENGTH:	0.209

CATIONS:		me/liter	mg/liter
Calcium	(Ca^{+2})	1.000	20.0
Magnesium	(Mg^{+2})	1.80	21.9
Sodium	(Na^{+1})	205	4700
Iron (total)	(Fe^{+2})	0.079	2.20
Barium	(Ba^{+2})	0.116	8.00
ANIONS:			
Bicarbonate	(HCO_3^{-1})	36.8	2240
Carbonate	(CO_3^{-2})	0	0
Hydroxide	(OH^{-1})	0	0
Sulfate	(SO_4^{-2})	0.229	11.0
Chloride	(Cl^{-1})	170	6040

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86°F	30°C	0.24	-42
120°F	49°C	1.1	-42

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707 North Leech P.O.Box 1499

Hobbs, New Mexico 88240

Company : CONOCO, INC
Date : 08-31-1989
Location: N. lease - Mesa Verde (on 8-29-89)

	Sample 1
Specific Gravity:	1.009
Total Dissolved Solids:	12821
pH:	7.83
IONIC STRENGTH:	0.203

CATIONS:		me/liter	mg/liter
Calcium	(Ca^{+2})	0.240	4.80
Magnesium	(Mg^{+2})	0.880	10.7
Sodium	(Na^{+1})	200	4610
Iron (total)	(Fe^{+2})	0.279	7.80
Barium	(Ba^{+2})	0.149	10.2
ANIONS:			
Bicarbonate	(HCO_3^{-1})	41.2	2510
Carbonate	(CO_3^{-2})	0	0
Hydroxide	(OH^{-1})	0	0
Sulfate	(SO_4^{-2})	0.416	20.0
Chloride	(Cl^{-1})	160	5670

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86°F	30°C	-0.22	-42
120°F	49°C	0.67	-42

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707 North Leech P.O.Box 1499

Hobbs, New Mexico 88240

Company : CONOCO, INC
Date : 08-31-1989
Location: "O" lease - Mesa Verde (on 8-29-89)

	Sample 1
Specific Gravity:	1.003
Total Dissolved Solids:	3846
pH:	5.47
IONIC STRENGTH:	0.075

CATIONS:		me/liter	mg/liter
Calcium	(Ca^{+2})	4.40	88.0
Magnesium	(Mg^{+2})	10.8	131
Sodium	(Na^{+1})	51.6	1190
Iron (total)	(Fe^{+2})	2.26	63.0
Barium	(Ba^{+2})	0.017	1.20
ANIONS:			
Bicarbonate	(HCO_3^{-1})	2.20	134
Carbonate	(CO_3^{-2})	0	0
Hydroxide	(OH^{-1})	0	0
Sulfate	(SO_4^{-2})	1.39	66.7
Chloride	(Cl^{-1})	63.2	2240

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86°F	30°C	-2.2	-21
120°F	49°C	-1.3	-21

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Hobbs, New Mexico 88240

Company : CONOCO, INC
Date : 08-31-1989
Location: #20 - Gallup Dakota (on 8-29-89)

	Sample 1
Specific Gravity:	1.011
Total Dissolved Solids:	14978
pH:	7.52
IONIC STRENGTH:	0.270

CATIONS:		me/liter	mg/liter
Calcium	(Ca^{+2})	8.00	160
Magnesium	(Mg^{+2})	10.0	122
Sodium	(Na^{+1})	231	5300
Iron (total)	(Fe^{+2})	0.140	3.90
Barium	(Ba^{+2})	0.009	0.600
ANIONS:			
Bicarbonate	(HCO_3^{-1})	11.2	683
Carbonate	(CO_3^{-2})	0	0
Hydroxide	(OH^{-1})	0	0
Sulfate	(SO_4^{-2})	23.1	1110
Chloride	(Cl^{-1})	214	7600

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86°F	30°C	0.29	-33
120°F	49°C	1.2	-33

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707 North Leech P.O.Box 1499

Hobbs, New Mexico 88240

Company : CONOCO, INC
Date : 08-31-1989
Location: #22 Btty - Gallup Dakota (on 8-29-89)

	Sample 1
Specific Gravity:	1.010
Total Dissolved Solids:	13608
pH:	7.39
IONIC STRENGTH:	0.247

CATIONS:		me/liter	mg/liter
Calcium	(Ca^{+2})	9.20	184
Magnesium	(Mg^{+2})	7.20	87.5
Sodium	(Na^{+1})	208	4780
Iron (total)	(Fe^{+2})	0.552	15.4
Barium	(Ba^{+2})	0.004	0.300
ANIONS:			
Bicarbonate	(HCO_3^{-1})	9.80	598
Carbonate	(CO_3^{-2})	0	0
Hydroxide	(OH^{-1})	0	0
Sulfate	(SO_4^{-2})	28.3	1360
Chloride	(Cl^{-1})	186	6600

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86°F	30°C	0.20	-28
120°F	49°C	1.1	-28

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707 North Leech P.O.Box 1499

Hobbs, New Mexico 88240

Company : CONOCO, INC
Date : 08-31-1989
Location: #22 Btty - Mesa Verde (on 8-29-89)

	Sample 1
Specific Gravity:	1.005
Total Dissolved Solids:	6954
pH:	8.14
IONIC STRENGTH:	0.115

CATIONS:		me/liter	mg/liter
Calcium	(Ca^{+2})	1.87	37.3
Magnesium	(Mg^{+2})	1.73	21.1
Sodium	(Na^{+1})	110	2520
Iron (total)	(Fe^{+2})	0.229	6.40
Barium	(Ba^{+2})	0.038	2.60
ANIONS:			
Bicarbonate	(HCO_3^{-1})	14.0	854
Carbonate	(CO_3^{-2})	0	0
Hydroxide	(OH^{-1})	0	0
Sulfate	(SO_4^{-2})	0	0
Chloride	(Cl^{-1})	99.3	3520

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86°F	30°C	0.75	-30
120°F	49°C	1.6	-30

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707 North Leech P.O.Box 1499

Hobbs, New Mexico 88240

Company : CONOCO, INC
Date : 08-31-1989
Location: 28 Btty - Gallup Dakota (on 8-29-89)

	Sample 1
Specific Gravity:	1.009
Total Dissolved Solids:	11924
pH:	7.30
IONIC STRENGTH:	0.208

CATIONS:		me/liter	mg/liter
Calcium	(Ca^{+2})	4.40	88.0
Magnesium	(Mg^{+2})	3.60	43.7
Sodium	(Na^{+1})	188	4320
Iron (total)	(Fe^{+2})	1.65	46.0
Barium	(Ba^{+2})	0.009	0.600
ANIONS:			
Bicarbonate	(HCO_3^{-1})	13.2	805
Carbonate	(CO_3^{-2})	0	0
Hydroxide	(OH^{-1})	0	0
Sulfate	(SO_4^{-2})	15.6	750
Chloride	(Cl^{-1})	167	5920

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86°F	30°C	0.00	-33
120°F	49°C	0.90	-33

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707 North Leech P.O.Box 1499

Hobbs, New Mexico 88240

Company : CONOCO, INC
Date : 08-31-1989
Location: #30 - Gallup Dakota (on 8-29-89)

	Sample 1
Specific Gravity:	1.010
Total Dissolved Solids:	14502
pH:	7.81
IONIC STRENGTH:	0.255

CATIONS:		me/liter	mg/liter
Calcium	(Ca^{+2})	6.00	120
Magnesium	(Mg^{+2})	5.60	68.0
Sodium	(Na^{+1})	226	5180
Iron (total)	(Fe^{+2})	0.072	2.00
Barium	(Ba^{+2})	0.009	0.600
ANIONS:			
Bicarbonate	(HCO_3^{-1})	17.2	1050
Carbonate	(CO_3^{-2})	0	0
Hydroxide	(OH^{-1})	0	0
Sulfate	(SO_4^{-2})	22.5	1080
Chloride	(Cl^{-1})	197	7000

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86°F	30°C	0.67	-33
120°F	49°C	1.6	-33

MECHANICAL INTEGRITY TESTS

The tests used to determine the absence of significant leaks in the casing, tubing, or packer is detailed below:

1. **Pressure test with water.** 500 psi of pressure was held on the casing-tubing annulus for 15 minutes before an acid stimulation job on August 17, 1989. The pressure remained constant.

2. **Radioactive tracer survey.** A radioactive tracer (Iodine) was injected near the packer on August 17, 1989 and then a radioactive detector tool was used to monitor the fluid movement. The log showed no evidence of fluid channeling around the packer.
   NOTE: The injection log is attached.

The test used to determine the absence of significant fluid movement into or between an underground source of drinking water through vertical channels adjacent to the injection wellbore is listed below:

1. **Radioactive tracer survey.** The radioactive tracer log mentioned above also demonstrated that no fluid was moving up the wellbore behind the production casing.

2. **Temperature log.** A temperature log was run in conjunction with the radioactive tracer log. The temperature log varified the results obtained by the tracer survey.

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NOHOLE.DOC

GEOLOGIC DATA

INJECTION INTERVAL:

Top: 4846 ft Bottom: 5586 ft Effective Thickness: 94 ft

Formation Name: Point Lookout, Menefee and Cliffhouse Formations in the Mesaverde Group.

Lithology: Sandstone

Porosity (%): 12-15

Current Reservoir Pressure: 3600 psi

Permeability (md): Permeability Varies

Drill Stem Test: Results are attached

CONFINING ZONES:

Thickness between injection zone and USDW: 1991 feet

Lithology: Primarily shale

Cumulative Shale: 1623 feet

Thickest Shale Interval: 790 feet

FAULTS: No faults have been identified in the area of the well which penetrate the injection interval.

UNDERGROUND SOURCES OF DRINKING WATER:

Deepest USDW Formation: Ojo Alamo

Top of Formation: 2520 feet from KB

Bottom of Formation: 2855 feet from KB

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GEODATA.DOC

JICARILLA 30 NO. 1
INITIAL TESTING DATA

Drill Stem Tests:

DST #1 3214-3264' (Pictured Cliffs)
Open 1 hr., SI 15 min.
Slight blow for 22 min.
Rec. 330' drlg. mud
FP 160#-190#
SIP 500#
HP 1580#

DST #2 4850-4928' (Cliffhouse-Menefee)
Open 1-1/2 hr., SI 30 min.
Rec. 15' drlg. mud
FP 0#
SIP 800#
HP 2500#

DST #3 5314-5478' (Menefee-Point Lookout)
Open 1-1/2 hr., SI 30 min.
Rec. 200' drlg. mud
FP 0-130#
SIP 875#
HP 2720#

DST #4 6519-6625' (Upper Gallup)
Open 2-1/2 hrs., SI 30 min.
Gas to surf. 16 min.
Rec. 200' GCM.
1080' heavily O&GCM
630 MW
FP 475-850#
SIP 1975#
HP 3250#

DST #5 6582-6630' (Upper Gallup)
Open 1 hr., SI 15 min.
Gas to surf. 15 min.
Rec. 350' slightly O & heavily GCM
250 MW
FP 45-250#
SIP 1685#
HP 3125#

DST #6 6819-6890' (Lower Gallup)
Open 2-1/2 hr., SI 30 min.
Rec. 150' slightly gas cut mud
w/slight rainbow of oil.
FP 0-75#
SIP 1225#
HP 3300#

DST #7 7340-7405' (Greenhorn)
Open 2 hr., SI 30 min.
Gas to surface 2 min.
Rec. 180' O & GCM
180' free oil
FP 135#
SIP 190#
HP 3630#

DST #8 7408-7475' Packer failed

DST #9 7405-7480' (Dakota "D")
Open 2-1/2 hr., SI 30 min.
Gas to surface 1 hr. 25 min.
Rec. 120' mud.
FP 50#
SIP 80#
HP 3660#

DST #10 7545-7587' (Dakota "J")
Open 2 hrs. 10 min., SI 30 min.
Rec. 90' drlg. mud.
FP 0#
SIP 0#
HP 3750#

DST #11 7600-7631' (Dakota "J")
Open 1 hr., SI 15 min.
Rec. 300' vry slightly gas cut mud.
FP 250#
SIP 250#
HP 3925#

DST #12 7650-7718' Packer failed.

DST #13 7680-7718' (Dakota "M")
Open 1 hr., SI 15 min.
Rec. 150' mcw
FP 0#
SIP 2525#
HP 3925#

DST #14 7754-7797' (Morrison)
Open 1 hr., SI 15 min.
Rec. 100' drlg. mud
FP 200-175#
SIP 175#
HP 4000#

DST #15 8585-8621' (Todilto-Entrada)
Open 1 hr., SI 20 min.
1000' wtr. cushion.
Rec. 1000' wtr. cushion.
3940' brackish wtr w/sulphur odor
FP 850-2225#
SIP 3200#
HP 4350#

RLT:mjm
DST.DOC

JICARILLA 30 NO. 1
INITIAL TESTING DATA

Core Data:

Core #1 (Lower Gallup)
6825-6858' fully recovered.
Dip flat, vertical fractures
Top 4' sh. drk gray, slightly sdy, calc. 6' ss vry. shaly, gry. interbedded w/shale, some free oil, mostly along fracture and bedding planes.
11' shale blk. thin bedded, fossiferous
12' shale blk. w/sandy lenses of grey., fn. grd. hard, tite, ss., odor w/slight oil stain.
Very good fluorescence throughout core.

Core #2 (Lower Gallup)
6860-6889' fully recovered.
29' shale, drk. grey, very sandy w/numerous interbeds of ss., gry., fn. grd., hrd., tite.
Slight bleeding, vry. good fluorescence throughout core.

Core #3 (Dakota "J")
7550-7587' Recovered 37'.
Top 8' shale, drk. grey.
14' ss., lite grey, med. grey. well sorted, porous, few shale inclusions. Gassy odor on fresh fractured surfaces. No oil shows.
1.5' ss., grey, hard, tite, quartzitic, w/interbedded shale streaks
13.5' ss., grey, fn. grd. to med. grd., numerous shaly inclusions, med. hard, med. por.

Core #4 (Dakota "J")
7589-7607' Recovered 10'.
10' ss., grey, shaly, fn. grd., hard, tite. Dead oil stain.
No odor or fluorescence.

Core #5 (Dakota "M")
7705-7716' Recovered 11'.
Top 1' chert, pebble conglomerate
1.5' ss., course grd., porous, soft, water saturated.
7.5' ss., mod. grd., well sorted, soft, porous, water saturated
Interbedded chert pebble conglomerate & course grd. ss., water saturated.

Core #6 (Dakota "M")
7718-7736' Recovered 13'
Top 2' pebble conglomerate
10' ss., white, med. grd., well sorted, subrounded, soft, porous, clear quartz grained, x-bedded, water saturated.
1' pebble conglomerate.
Pebbles from pea size to 1-1/2" dia.

RLT:mjm
DST.DOC

JICARILLA 30 NO. 1

Verification of Public Notice

		Date Sent	Date Received
Mr. Darrell Tafoya Bureau of Indian Affairs Jicarilla Agency Box 167 Dulce, NM 87528		9-1-89	9-5-89
President Jicarilla Apache Tribe P.O. Box 507 Dulce, NM 875290	Tribal Government & Owner	9-1-89	9-5-89
Mr. Dixon Sandoval P.O. Box 143 Dulce, NM 87528	Grazing Allottee	9-5-89	9-8-89
Mr. Robert Hopkins Meridian Oil Inc. P.O. Box 4289 Farmington, NM 87449-4289	Operator of Shallow Rights	9-1-89	9-5-89

JICARILLA 30 NO. 1

Logging Information

Date	Interval	Log Type
1/8/54	252-4926'	SP/ML-SG-LL
1/20/54	4926-6631'	
1/30/54	6631-7384'	
3/1/54	7384-8714'	
1/9/54	3150-4923'	SP/Microlog
1/20/54	4923-6628'	
1/30/54	6628-6900'	
3/1/54	6300-7900'	SP/LL
3/1/54	0-8714'	Section Gauge
3/6/54	0-7424'	GR/Neutron
6/26/73	4800-5933'	GR/CCL
12/14/85	4500-5485'	GR/CBL
8/17/89	5050-5499'	Tracer/Temperature Survey
8/17/89		Step-Rate Test

RLT:mjm
JIC30#1.HIS

Form [illegible]
Adopted [illegible]

STATE OF NEW MEXICO

ILLEGIBLE

$50,000.00 BLANKET PLUGGING BOND

BOND NO. 8076-34-52
(For Use of Surety Company)

Note: File with Oil Conservation Commission, P. O. Box 2088, Santa Fe 87501

KNOW ALL MEN BY THESE PRESENTS:

That CONTINENTAL OIL COMPANY (XXXXXXXXXXXXXXXXXXXX) a corporation organized in the State of Delaware, with its principal office in the city of Ponca City, State of Oklahoma, and authorized to do business in the State of New Mexico, as PRINCIPAL, and FEDERAL INSURANCE COMPANY a corporation organized and existing under the laws of the State of New Jersey and authorized to do business in the State of New Mexico, as SURETY, are held firmly bound unto the State of New Mexico, for the use and benefit of the Oil Conservation Commission of New Mexico pursuant to Section 65-3-11, New Mexico Statutes Annotated, 1953 Compilation, as amended, in the sum of Fifty Thousand Dollars($50,000.00) lawful money of the United States, for the payment of which, well and truly to be made, said PRINCIPAL and SURETY hereby bind themselves, their successors and assigns, jointly and severally, firmly by these presents.

The conditions of this obligation are such that:

WHEREAS, The above principal has heretofore or may hereafter enter into oil and gas leases, or carbon dioxide (CO_2) gas leases, or helium gas leases with the State of New Mexico; and

WHEREAS, The above principal has heretofore or may hereafter enter into oil and gas leases, or carbon dioxide (CO_2) gas leases, or helium gas leases on lands patented by the United States of America to private individuals, and on lands otherwise owned by private individuals; and

WHEREAS, The above principal, individually, or in association with one or more other parties, has commenced or may commence the drilling of wells to prospect for and produce oil or gas, or carbon dioxide (CO_2) gas or helium gas, or does own or may acquire, own or operate such well, or such wells started by others on land embraced in said State oil and gas leases, or carbon dioxide (CO_2) gas leases, or helium gas leases, and on land patented by the United States of America to private individuals, and on land otherwise owned by private individuals, the identification and location of said well being expressly waived by both principal and surety hereto.

NOW, THEREFORE, If the above bounden principal and surety or either of them or their successors or assigns, or any of them, shall plug all of said wells when dry or when abandoned in accordance with the rules, regulations, and orders of the Oil Conservation Commission of New Mexico in such way as to confine the oil, gas, and water in the strata in which they are found, and to prevent them from escaping into other strata;

THEN, THEREFORE, This obligation shall be null and void; otherwise and in default of complete compliance with any and all of said obligations, the same shall remain in full force and effect.

PROVIDED, HOWEVER, That thirty (30) days after receipt by the Oil Conservation Commission of New Mexico of written notice of cancellation by the surety, the obligation of the surety hereunder shall terminate as to property or wells acquired, drilled, or started after said thirty (30) day period but shall continue in effect, notwithstanding said notice, as to property or wells theretofore acquired, drilled or started.

Sealed with our seals and dated this 14th day of November, 1977.

CHUBB & SON INC.
Manager

FEDERAL INSURANCE COMPANY

RIDER to be attached to and form a part
of Bond No. 8076-34-52
Wherein CONTINENTAL OIL COMPANY
is named as Principal, and FEDERAL INSURANCE
COMPANY as Surety, in the sum of $50,000
dated Nov. 14, 1977, in favor of
State of New Mexico - Blanket Plugging Bond

IT IS HEREBY STIPULATED AND AGREED that, effective July 1, 1979 said bond be amended as follows, to wit: That the Principal in said bond be changed from CONTINENTAL OIL COMPANY to Conoco Inc. and that Conoco Inc. shall be held and firmly bound, and hereby binds itself, its successors and assigns, as Principal, and FEDERAL INSURANCE COMPANY hereby binds itself, its successors and assigns, as Surety in accordance with the terms, provisions and conditions of said bond as hereby amended.

This Rider is executed upon the express condition that the liability of the Surety herein shall in no event exceed in the aggregate the penal sum of said bond, subject, otherwise, to all other terms, provisions and conditions of said bond as hereby amended.

Signed, sealed and dated this 12th day of June, 19 79.

CONTINENTAL OIL COMPANY
Principal (Old Name)

BY
J. A. Begley, Asst. Manager-Insurance Div.

Conoco Inc.
Principal (New Name)

BY
Warren L. Jensen, Vice-President

FEDERAL INSURANCE COMPANY

BY
Lou Ann Sims, Attorney in Fact

CONTINENTAL OIL COMPANY
PRINCIPAL
P. O. Box 1267
Ponca City, Oklahoma 74601
Address

pmt By J. A. Begley
Signature

J. A. Begley, Asst. Manager-Insurance
Title

(Note: Principal, if corporation, affix corporate seal here.)

FEDERAL INSURANCE
SURETY
100 William Street
New York, New York
Address

By Lorn W. Edw
Attorney-in Fact

(Note: Corporate surety affix corporate seal here.)

Countersigned by:

New Mexico Resident Agent

ACKNOWLEDGEMENT FORM FOR NATURAL PERSONS

STATE OF _____)
COUNTY OF _____) ss.

On this _____ day of _____, 19____, before me personally appeared _____, to me known to be the person (persons) described in and who executed the foregoing instrument and acknowledged that he (they) executed the same as his (their) free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and seal on the day and year in this certificate first above written.

_____
Notary Public

_____
My Commission expires

ACKNOWLEDGEMENT FORM FOR CORPORATION

STATE OF OKLAHOMA)
COUNTY OF KAY) ss.

On this 14th day of November, 19 77, before me personally appeared J. A. Begley, to me personally known who, being by me duly sworn, did say that he is Asst. Manager-Insurance Division of Continental Oil Company and that the foregoing instrument was signed and sealed on behalf of said corporation by authority of its board of directors, and acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and seal on the day and year in this certificate first above written.

Patricia M Thompson
Notary Public

9-3-80
My Commission expires

ACKNOWLEDGEMENT FORM FOR CORPORATE SURETY

STATE OF OKLAHOMA)
COUNTY OF KAY) ss.

On this 14th day of November, 1977, before me appeared Lorn W. Edwards, to me personally known, who, being by me duly sworn, did say that he is Attorney-in-Fact of FEDERAL INSURANCE COMPANY and that the foregoing instrument was signed and sealed on behalf of said corporation by authority of its board of directors, and acknowledged said instrument to be the free act and deed of said corporation.

IN WITNESS WHEREOF, I have hereunto set my hand and seal on the day and year in this certificate first above written.

Patricia M Thompson
Notary Public

9-3-80
My Commission expires
(Note: Corporate surety attach power of attorney.)

APPROVED BY:

OIL CONSERVATION COMMISSION OF NEW MEXICO

By _____

Date _____

Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

David L. Wacker
Name

DIVISION MANAGER - HOBBS DIVISION - CONOCO INC.
Title

* If certification is signed by a party other than the injection well owner/operator a written statement of authorization signed by the owner/operator must accompany the application.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

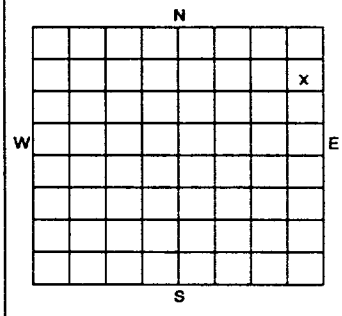
WASHINGTON, DC 20460

PLUGGING AND ABANDONMENT PLAN

NAME AND ADDRESS OF FACILITY	NAME AND ADDRESS OF OWNER/OPERATOR
Jicarilla 30 No. 1 SWD	Conoco Inc. 726 E. Michigan Hobbs, NM 88240

STATE: NM	COUNTY: Rio Arriba	PERMIT NUMBER:

LOCATE WELL AND OUTLINE UNIT ON SECTION PLAT – 640 ACRES



SURFACE LOCATION DESCRIPTION:
SE/4 of NE/4 of NE/4 SEC. 30, T25N, R4W

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT
Surface Location: 915 ft. from North Line of quarter section and
330 ft. from East Line of quarter section

TYPE OF AUTHORIZATION	WELL ACTIVITY
X Individual Permit	CLASS 1
Area Permit	CLASS 2
Rule	X Brine Disposal
	Enhanced Recovery
Number of Wells: 1	Hydrocarbon Storage
Lease Name: Jicarilla 30	Well Number: 1

CASING AND TUBING RECORD AFTER PLUGGING

SIZE	WT (LB/FT)	LEFT IN WELL (FT)	HOLE SIZE
10-3/4"	32.75	250	13-3/4"
5-1/2"	15.5-17.0	7500	8-3/4"

METHOD OF EMPLACEMENT OF CEMENT PLUGS
X The Balance Method
The Dump Bailer Method
The Two-Plug Method
Other

CEMENT PROCEDURE:
Attached on next page

ESTIMATED COST TO PLUG WELL
$34,000

CERTIFICATION

I CERTIFY UNDER THE PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED IN THIS DOCUMENT AND ALL ATTACHMENTS AND THAT, BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THAT THE INFORMATION IS TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. (REF. 40 CFR 144.32)

NAME AND OFFICIAL TITLE (please print)	SIGNATURE	DATE SIGNED

PLUGGING AND ABANDONMENT PLAN

JUSTIFICATION:

This P&A procedure was prepared to meet all EPA, BLM and NMOCD rules. The procedure will permanently confine all oil, gas and water in the separate strata originally containing them. It is not recommended to P&A this well at this time. However, in the event it becomes necessary to plug and abandon, the well will be abandoned in the following manner.

1. MIRU pump truck
   a. Tie onto wellhead with pump equipment.
   b. Fill tubing with 14.0 ppg mud to kill well.

2. MIRU workover unit.
   a. Disconnect pump equipment.
   b. ND wellhead, NU BOP.
   c. Re-connect pump equipment.
   d. Connect temporary flowline from frac tank to casing valve.

3. MIRU wireline unit.
   a. RIH with 1-9/16" hollow steel carrier gun loaded 2 JSPF on wireline.
   b. Perforate bottom joint of 2-3/8" tubing at +/- 5100'.
   c. Open casing valve.
   d. Displace annular volume loaded with packer fluid with 14.0 ppg mud.
   e. Release Guiberson Uni-VI packer.
   f. POOH with packer and 2-3/8" tubing.

4. Prepare to P&A Mesaverde interval.
   a. RIH with 5-1/2" cement retainer on 2-3/8" tubing.
   b. Set cement retainer at +/- 4800'.
   c. Pump 150 sacks of class "B" cement with 2% CaCl2.
   d. Sting out of retainer and spot 6 sacks of class "B" cement with 2% CaCl2 on top of retainer.
   e. POOH with 2-3/8" tubing.

5. Prepare to Isolate Pictured Cliffs and Ojo Alamo formations behind casing.
   a. RIH with 4" hollow steel carrier gun loaded with 4 JSPF on wireline.
   b. Perforate 5-1/2" casing at +/- 3330'.
   c. POOH with wireline and gun.
   d. RIH with 5-1/2" cement retainer on 2-3/8" tubing.
   e. Set cement retainer at +/- 3280'.
   f. Open bradenhead valve.
   g. Establish circulation with produced water.
   h. Pump 425 sacks of Halliburton "Light" cement with 1% Econolite and .6% Halad-9.

NOTE: **IF CIRCULATION TO SURFACE CANNOT BE OBTAINED THE 5-1/2" CASING WILL BE PERFORATED ABOVE THE OJO ALOMO FORMATION AND ATTEMPTED AGAIN. IF CIRCULATION IS STILL NOT POSSIBLE, THE CASING WILL BE PERFORATED 50' ABOVE THE PICTURED CLIFFS AND 50' BELOW THE OJO ALAMO AND SQUEEZED WITH CEMENT.**

6. Prepare to P&A Pictured Cliffs interval.
   a. Sting out of retainer and spot 20 sacks of class "B" cement with 2% CaCl2 on top of cement retainer.

7. Prepare to set the Ojo Alamo cement plug.
   a. POOH with 2-3/8" tubing to 2905'.
   b. Balance a 50 sack cement plug from 2905' to 2470' with class "B" cement and 2% CaCl2.
   c. POOH with 2-3/8" tubing.

8. Prepare to set Surface cement plug.
   a. RIH with 4" hollow steel carrier gun loaded with 4 JSPF on wireline.
   b. Perforate 5-1/2" casing at +/- 300'.
   c. Open bradenhead valve.
   d. Circulate 150 sacks of class "B" cement with 2% CaCl2.

9. Prepare the surface P&A marker.
   a. Install a 4" steel marker standing at least 4' above ground level.
   b. Stamp or weld the name and number of the well and its location (unit letter, section, township, and range) on the marker.

rlt
P&A.DOC

Submit 1 Copy to Santa Fe and 1 Copy to Appropriate District Office by 15th of Second Succeeding Month.

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

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

Form C-120-A
Revised 1-1-89

MONTHLY WATER DISPOSAL REPORT

Disposal System Operator Conoco Inc. Disposal System West Lindrith Water Disposal

Address P.O. Box 460 - Hobbs, NM 88240 County Rio Arriba Month, July 19 89

LEASE	WELL NO.	LOCATION				PREVIOUS - CUM DISPOSED WATER BARRELS	CURRENT MONTH DISPOSED WATER BARRELS	NEW-CUMULATIVE DISPOSED WATER BARRELS	AVERAGE INJECTION PRESSURES
		UL	S	T	R				
Jicarilla 30	1	A	30	25	4	889,124	5,172	894,296	1,300

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

Signature Cecil O Upchurch for

Printed Name WILLIAM W. BAKER

Company Conoco Inc.

Title Adm. Supervisor Telphone No. (505)397-5800

Remarks: NMOCD-Aztec/Santa Fe

BLM-Farmington

RLT

David L. Wacker
Division Manager
Production Department
Hobbs Division
North American Production

Conoco Inc.
P.O. Box 460
726 East Michigan
Hobbs, NM 88240
(505) 397-5800

September 6, 1989

Mr. Dave Catanach
New Mexico Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504

Dear Mr. Catanach:

On May 25, 1972 the New Mexico Oil Conservation Commission (NMOCC) approved Conoco's application to complete the Jicarilla 30 No. 1 as a salt water disposal well. Permission was granted to inject water into the Mesaverde formation from approximately 5171 feet to approximately 5432 feet through 2-3/8" tubing with a packer set at about 5100 feet (see Attachment 1).

On August 17, 1989 a radioactive tracer survey and temperature survey was conducted on the subject well. The results of the tests indicated that a portion of the water is exiting the 5-1/2" production casing below the approved injection interval through old perforations in the casing at 5499 feet and appears to be moving down (see Attachment 2). Conoco immediately discontinued all injection operations when the test results were obtained and notified both the EPA and the NMOCC.

A review of the well records indicates that the old perforations are located in the Point Lookout Sandstone within the Mesaverde interval (see Attachment 3). Since we cannot get tools any deeper into the well, it is impossible to tell exactly where the water is going. Nevertheless, The following information suggests that the water is staying within the Mesaverde interval.

1. The Mancos shale is located directly below the Point Lookout Sandstone. This formation is very impermeable and is approximately 872 feet thick in the Jicarilla 30 No. 1 well.

2. The Gallup formation is immediately below the Mancos formation. The production casing was perforated near the top of the Gallup formation and squeeze cemented with 750 sacks of cement in March, 1954. This work was conducted to isolate the Gallup formation from the overlying formations before attempting to complete the Gallup formation.

3. The Jicarilla 30 No. 12 and the Jicarilla 20 No. 2 are located near the Jicarilla 30 No. 1 and are completed in the Gallup formation. The combined water production from these two wells is only 2 BWPD.

Conoco has been trucking the produced water to an outside operated disposal site since the injectivity tests were conducted. However, it is economically unfeasible to continue such operations for an extended time period due to the additional costs to truck and dispose of the water.

We would like, therefore, for the NMOCC to amend Order No. SWD-140 to include the entire Mesaverde interval from 4846 feet to 5586 feet so that we can return the Jicarilla 30 No. 1 to injection. If more information is required or the order cannot be amended immediately we would appreciate written authorization to temporarily inject water into the well until the Order can be revised. Conoco has already received approval from the EPA to continue injection since we are not violating any of their rules and regulations (see Attachment 4).

Your expeditious approval of this application would be appreciated because the economics of our operations are significantly affected by the loss of this disposal well.

Sincerely,

David L. Wacker

David L. Wacker
Division Manager

rlt
Attachments

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

GARREY CARRUTHERS
GOVERNOR

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

September 15, 1989

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

Attention: David L. Wacker

Re: Jicarilla "30" SWD Well No. 1

Dear Mr. Wacker:

I have received your request dated September 6, 1989, to expand the injection interval in the Jicarilla "30" SWD Well No. 1 located in Unit A of Section 30, Township 25 North, Range 4 West, NMPM, Rio Arriba County, New Mexico, to include the entire Mesaverde interval from 4846 feet to 5586 feet. After careful review, I find that temporary approval to utilize the well in its present condition should not result in migration of fluid outside the Mesaverde formation. You are therefore authorized to utilize the subject well for a temporary period pending the amendment of Division Administrative Order No. SWD-140.

In order to amend Order No. SWD-140, the following additional information is requested:

1. Information regarding the construction of any well within a 1/2 mile radius of the subject well which penetrates the Mesaverde formation.

2. A description of any Mesaverde production within a 2 mile radius of the subject well and/or a discussion of potential Mesaverde production in this area which might be adversely affected by approval of the application.

3. Proof of Notice: Provide information that all offset operators within a 1/2 mile radius of the subject well (if any) have been notified of the proposed amendment to Order No. SWD-140.

4. Publication Notice: Provide proof that a description of the proposed injection interval expansion has been published in Rio Arriba County, New Mexico, (as more fully described in Part XIV of Division Form C-108).

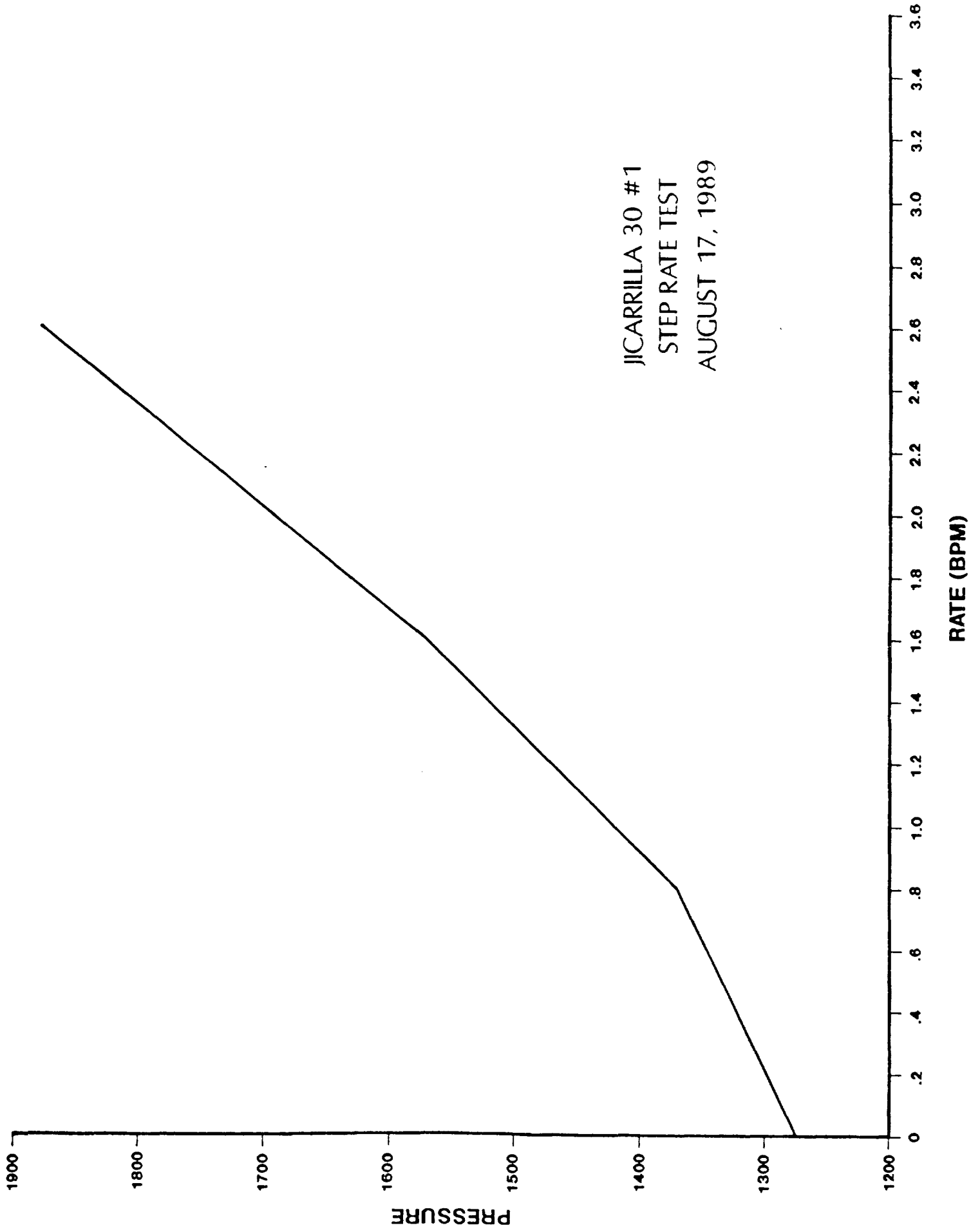
If you should have any questions regarding the additional information requested, please contact myself at (505) 827-5800.

Sincerely,

David Catanach

David Catanach

xc: OCD-Aztec


JICARRILLA 30 #1
STEP RATE TEST
AUGUST 17, 1989
PRESSURE
1900
1800
1700
1600
1500
1400
1300
1200
RATE (BPM)
0
.2
.4
.6
.8
1.0
1.2
1.4
1.6
1.8
2.0
2.2
2.4
2.6
2.8
3.0
3.2
3.4
3.6