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

ORDER NO. SWD-343

APPLICATION OF FOY AND MIDDLEBROOK

ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION

Under the provisions of Rule 701(B), Foy & Middlebrook made application to the New Mexico Oil Conservation Division on June 8, 1988, for permission to complete for salt water its Mescalero Federal Well No. 1, located in Unit F, of Section 11, Township 12 South, Range 30 East, NMPM, Chaves County, New Mexico.

THE DIVISION DIRECTOR FINDS THAT:

(1) The application has been duly filed under the provisions of Rule 701(B) of the Division Rules and Regulations.

(2) Satisfactory information has been provided that all offset operators and surface owners have been duly notified; and

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

(4) No objections have been received within the waiting period prescribed by said rule.

IT IS THEREFORE ORDERED THAT:

(1) The applicant herein, Foy & Middlebrook is hereby authorized to complete its Mescalero Federal Well No. 1 located in Unit F of Section 11, Township 12 South, Range 30 East, NMPM, Chaves County, New Mexico, in such a manner as to permit the injection of salt water for disposal purposes into the San Andres formation at approximately 3996 feet to approximately 4120 feet through 2 7/8-inch plastic lined tubing set in a packer located at approximately 3950 feet.

IT IS FURTHER ORDERED THAT:

The operator shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface.

Prior to commencing injection operations into the well, the casing shall be pressure tested from the surface to the packer setting depth to assure the integrity of said casing.

The casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge at the surface or left open to the atmosphere to facilitate detection of leakage in the casing, tubing or packer.

The injection well or system shall be equipped with a pressure limiting device which will limit the wellhead pressure on the injection well to no more than 800 psi.

The Director of the Division may authorize an increase in injection pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the injected fluid from the San Andres formation. Such proper showing shall consist of a valid step-rate test run in accordance with and acceptable to this office.

The operator shall notify the supervisor of the Hobbs district office of the Division of the date and time of the installation of disposal equipment and of the mechanical integrity test so that the same may be inspected and witnessed.

The operator shall immediately notify the supervisor of the Hobbs district office of the Division of the failure of the tubing, casing or packer in said well and shall take such steps as may be timely and necessary to correct such failure or leakage.

PROVIDED FURTHER THAT, jurisdiction of this cause is hereby retained by the Division for such further order or orders as any seem necessary or convenient for the prevention of waste and/or protection of correlative rights; upon failure of the operator to conduct operations in a manner which will ensure the protection of fresh water or in a manner inconsistent with the requirements set forth in this order, the Division may, after notice and hearing, terminate the injection authority granted herein.

The operator shall submit monthly reports of the disposal operations in accordance with Rule 706 and 1120 of the Division Rules and Regulations.

Approved at Santa Fe, New Mexico, on this 27th day of June, 1988.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. LEMAY
Director

S E A L

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108
Revised 7-1-81

4 copies

JUN - 8 1988
OIL CONSERVATION DIVISION

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: ☐ Secondary Recovery ☐ Pressure Maintenance ☒ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ yes ☐ no

II. Operator: FOY AND MIDDLEBROOK

Address: 310 West Texas, Suite 210, Midland, Texas 79701

Contact party: Steven R. Foy Phone: (915) 687-0144

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
see attached sheet.

IV. Is this an expansion of an existing project? ☐ yes ☒ no
If yes, give the Division order number authorizing the project _____.

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review. Attached

* VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail. Attached

VII. Attach data on the proposed operation, including: Attached

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval. Attached

IX. Describe the proposed stimulation program, if any. Attached

* X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.) Attached

* XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken. Attached

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water. Attached

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form. Attached

XIV. Certification

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: Steven R. Foy Title General Partner

Signature: Steven R Foy Date: 6-6-88

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division

III. WELL DATA FOR DISPOSAL WELL

A) 1) Lease Name and Well No.

Conoco - Original Operator

Mescalero Federal Well No. 1

Sec. 11, T-12-S, R-30-E (F)

1980' FNL & 1980' FWL of Sec.

Chaves County, New Mexico

2) Casing Record:

Type	Hole Size	Csg. Size	Depth Set	Sks Cmt	Remarks
Surface	16"	13-3/8"	429'	350	Cmt circulated
Intermediate	12-1/4"	9-5/8"	4300'	2113	Cmt circulated

3) Injection Tubing

4100' - 2-7/8", 6.4#/ft., J-55, EUE,Tubing, internally plastic coated for salt water disposal service.

4) Baker 9-5/8" x 2-7/8", 51B A-3 Lok-Set Packer w/Ball Valve & On-Off tool,Double Grip Packer internally coated for salt water disposal service to be set at 3950' in 10,000# tension.

B) DISPOSAL WELL DATA

1) Injection Formation:

a) San Andres

b) The disposal zone is not located in a field productive of oil and gas. Therefore, this zone is not located within a known pool or field.

2) Injection Interval:

a) Depth - 4100' - 4120' & 3996' - 4106'

b) Perforation density - 4 holes/ft.

c) The zone is currently cemented behind 9-5/8" casing.

3) This well was drilled to 10,554' as an exploratory Devonian test. The Devonian was found not to be non-commercial. Following this the well was plugged and abandoned.

4) Currently there are no perforated intervals in this well bore. Cement plugs are set in the well bore as follows:

(a) Set 85 sk "H" cmt plug from 7670' - 7470'

*b) Set 105 sk "H" cmt plug from 4375' - 4225'

c) Set 45 sk "H" cmt plug from 1675' - 1575'

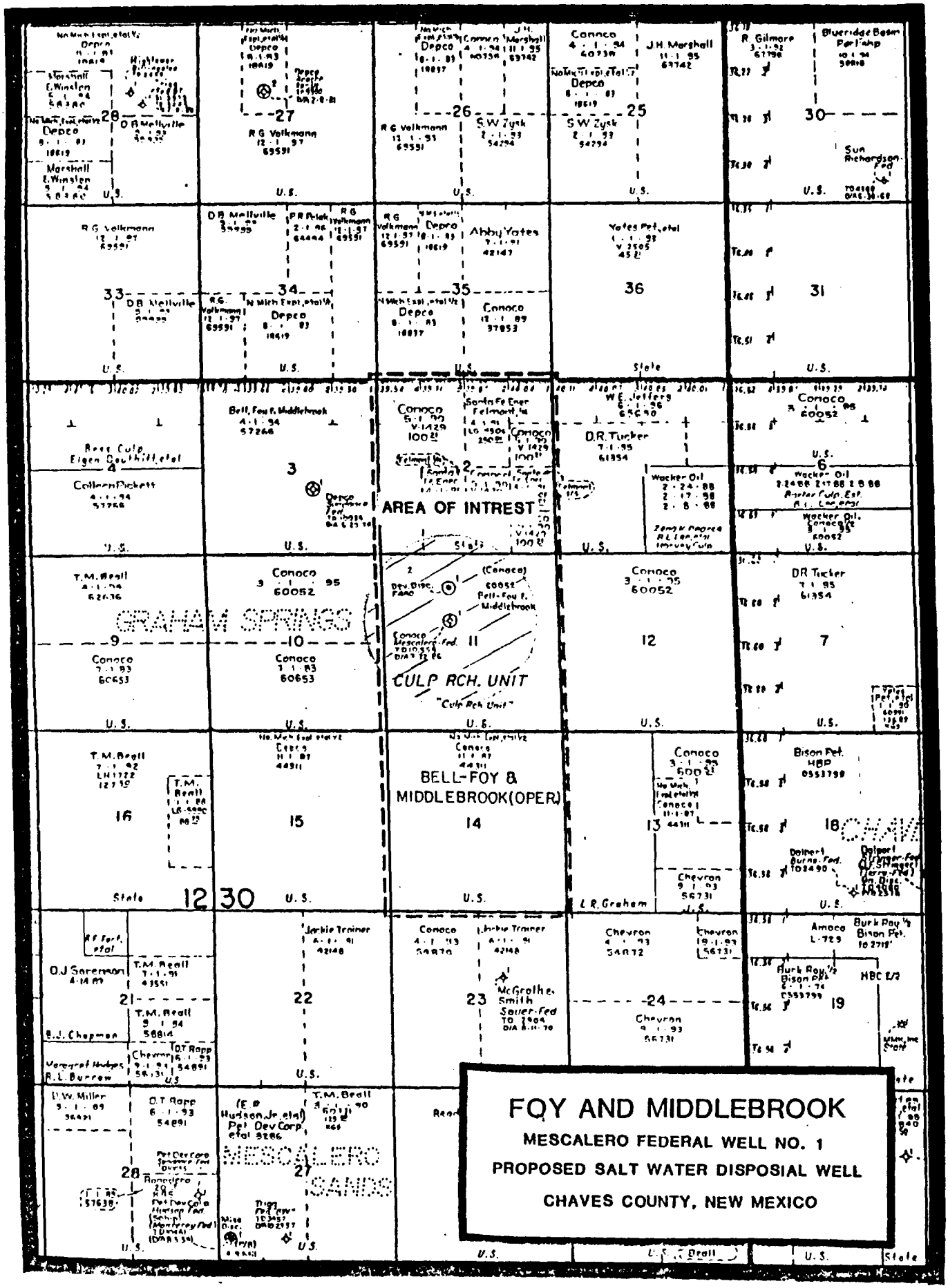
d) Set 45 sk "H" cmt plug from 833' - 733'

e) Set 20 sk "H" cmt plug from 50' - 0'

*This plug was checked with a wire line. Top of cement was found at 4231'.

5) There are no known zones above or below the proposed disposal zone which are economically productive of oil or gas.

V.


AREA OF INTREST
GRAHAM SPRINGS
CULP RCH. UNIT
BELL-FOY & MIDDLEBROOK(OPER)
MESCALERO SANDS
FOY AND MIDDLEBROOK
MESCALERO FEDERAL WELL NO. 1
PROPOSED SALT WATER DISPOSIAL WELL
CHAVES COUNTY, NEW MEXICO

VI. Well Data for Any Well which is located within one-half mile of the proposed disposal well.

1) Lease Name & Well No.

Foy & Middlebrook - Operator

Culp Ranch Unit Well No. 1

990' FNL & 1980' FWL

Sec. 11, T-12-S, R-30-E (C)

Chaves County, New Mexico

2) Date Drilled - Nov. 12, 1987

3) Casing and Cement Record:

Type	Hole Size	Csg. Size	Depth Set	Sks Cmt	Remarks
Surface	17-1/2"	13-3/8"	450	450	Cmt circulated
Inter.	11"	8-5/8"	2980	1450	Cmt circulated
Prod.	7-7/8"	5-1/2"	10251	1180	*see remarks below

*Two stage cement job - DV Tool@ 6985'

1st stage 200 sks cmt calculated toc 8900'

2nd stage 980 sks cmt " " 2500'

4) Total Depth - 10,280'

5) Completion Record

Open Hole 10251 - 280'

Completed Natural

Flow - 480 BOPD, 0 BWPD, Gas TSTM

on 16/64" chk 41.2°API oil FTP 350#

6) Attached is a schematic of the Conoco - Mescalero Federal Well No. 1 (F11, 12S, 30E) which is the only other well in the area of review. This well was drilled, never completed, and subsequently plugged and abandoned March 22, 1986. A schematic of the Foy & Middlebrook Culp Ranch Unit No. 1 is also attached.

DATE 5-9-88

PRESENT

WELL DATA SHEET

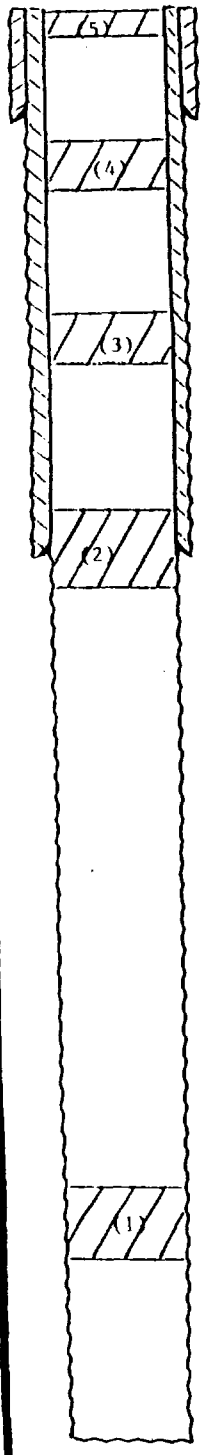
Lease Mescalero Federal Well No. 1

Location 1980' FNL & 1980' FWL, Sec. 11, T-12-S, R-30-E (F) County Chaves State New Mexico

K.B. Elev. 4022'
G.L. Elev. 4003'
D.F. Elev. 4021'

Date Plugged 3-22-86
Formation(s) All zones non-commercial.

The primary objective was the Devonian.



Cut 13-3/8" & 9-5/8" csg off 4' below GL. Weld plate on 13-3/8" & install marker.

~~13-3/8~~ N.A. #
Gr. N.A. Thd. ST&C
Set @ 429'
w/ 350 Sks.
Hole Size 16"
Cement circulated.
Tested csg to 600#
Held O.K.

9-5/8 " 36 #
Gr. K-55 Thd. LT&C
Set @ 4300
w/ 2113 Sks.
Hole Size 12-1/4"
Cement circulated.
Tested csg to 1040#
Held O.K.

Top of Devonian 10,259'
Well P&A. Did not run prod. csg.

Hole Size 8-3/4"

3-22-86

Set Cmt Plugs Set as Follows:

(1) Set 85 sx "H" cmt plug from 7670' - 7470'
(2) Set 105 sx "H" cmt plug from 4375' - 4225'. Found top w/wire line at 4231'
(3) Set 45 sx "H" cmt plug from 1675' - 1575'
(4) Set 45 sx "H" plug from 833' - 733'
(5) Set 20 sx "H" plug from 50' - 0'

DST Results

UNDESIGNATED - DEVONIAN - CHAVES COUNTY, NEW MEXICO - 1.0000000
API NUMBER: 30-005-21052 API NUMBER: 40-20-4785
D & T MESCALERO 11 NO. 1 - OBJECTIVE: 10,700' DEVONIAN
LOCATION: 1980' FNL & 1980' FWL OF SECTION 11, T-21S, R-30E
TD: 10,554'PBTD: NA PERF: NACL ELEV: NA DATE SPUD: 1/14/86
RIG REL: 3/22/86 COMPLETED: P&A FORMATION: DEVONIAN PERFS: NONE WORK DONE: Ran 13 jts 13-3/8" surface csg. RU Dowell. Cemented csg w/350 sx class "C" w/4% gel. Returns to surface. Tested to 600 psi w/no leaks. RU Schlumberger. Logged well w/GR-DLL-MSFL-CAL & NGT-LDT-CNL-FDC from 4296'-1500' (GR-CAL to 500'). 2nd run w/GR-LSS from 4296'-2200'. Ran 103 jts 9-5/8", 36#, K-55 LT&C intermediate csg. RU Dowell. Cmtd csg w/1163 class "C" light + 18% salt & 950 sx class "C" + 2% $CACL_2$. Returns to surface. Tested to 1040 psi w/no leaks. RU Schlumberger. Logged well w/DLL-MSFL-GR-CAL from 10,483'-4300' & CNL-LDT-FDC-GR-CAL from 10,604'-4300'. 3rd run w/LSS-GR from 8970'-4300'. DST #2: Flopetrol-Johnston 10,227'-10,550'. Surface performance: Steady increasing blow to 15.37 psi during IF; increased to 69.45 psi during FF. Drill Pipe Recovery: 8571' total fluid; slightly oil cut mud. Sample chamber recovery: Pressure: 40 psi Cu.ft. Gas: 0.01 C.C. Oil: 520 C.C. Water: 1870 C.C. Mud: 10 Tot. Liq.: 2400 API Gravity: 39.4 at 60°F 40 at 68°F. Drill Pipe Recovery: 486' gas & scavenger cut drilling fluid; 2.67 bbls. Total fluid sample chamber recovery: Pressure: 200 psi DST #3. Baker-Lynes Testing 10,250'-10,305'. Surface Performance: First flow inc. to 1.5 oz.; second flow incr. to 51 psi, third flow 21 psi, ran nitrogen to blow down drill pipe, ran third flow to get fluid to surface-no pressure data. Drill Pipe Recovery: 640' oil, 5694' heavy oil cut water; 1500' water. Fit Recovery: 23 BO, 113 BW Sample Chamber Recovery: Chamber contaminated - not reported. Set blanced cmt plug from 10,759'-9540' w/410 sx class "H" cmt. DST #4, no test, pkrs failed. DST #5: Flopetrol-Johnston 9322-9543'. Surface Performance: Initial Flow inc to 81 psi; second flow inc from 1.37 psi to 4.07 psi; third flow inc from 3.47 psi to 3.81 psi. Drill Pipe Recovery: 486' gas & scavenger cut drilling fluid; 2.67 bbls total fluid. Sample Chamber Recovery: Pressure 200 psi. All zones non-commercial. RU Dowell. Set 85 sx "H" cmt plug from 7670'-7470'. Set 105 sx class "H" cmt plug from 4375'-4225'. RU wireline & tagged top of cmt top at 4231'. Set 45 sx class "H" cmt plug from 1675'-1575'. Set 45 sx class "H" cmt plug from 833'-733'. Cut off 13-3/8" & 9-5/8" csg 4' below GL. Set 50' class "H" surface plug w/20 sx & 3% $CACL_2$. Welded plate onto 13-3/8" csg & placed well abandonment marker 4' above GL.
Final Report

Plug Back Total Depth Surface
Total Depth 10,554'
Well Name Mescalero Federal No. 1

DATE 5-9-88

WELL DATA SHEET

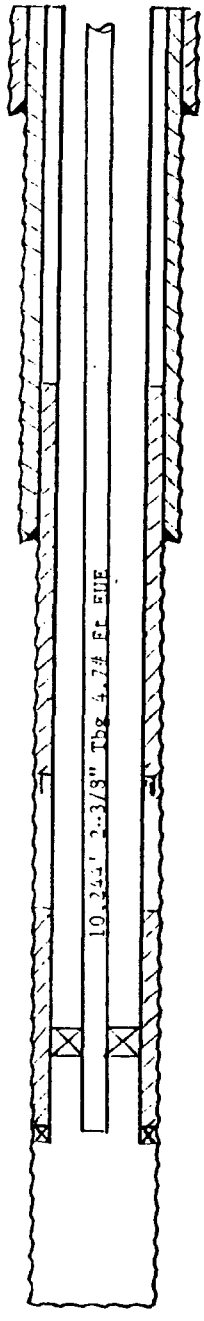
Lease Culp Ranch Unit Well No. 1

Location 990' FNL & 1980' FWL, Sec. 11, T-12-S, R-30-E County Chaves State New Mexico

K.B. Elev. 4024'
G.L. Elev. 4005.5
D.F. Elev. 4006

Date Completed 11-12-87
Formation(s) Devonian

Open hole 10,251' - 280'. Completed natural, flow 480 BOPD, 0 BWPD, Gas TSTM, FTP 350#, 16/64" Chk. 41.2° API oil.



13-3/8" 48 #
Gr. N.A. Thd. ST&C
Set @ 450'
w/ 450 Sks.
Hole Size 17-1/2"
Cement circulated

TOC @ 2500'
calculated

8-5/8" " 24 & 32 #
Gr. J-55 Thd. LT&C
Set @ 2980'
w/ 1450 Sks.
Hole Size 11"
Cement circulated

DV tool 6985'

Baker Model "R-3 Double Grip" pkr at 10,147'

Top of Devonian 10,240'

5-1/2" 17 #
Gr. K & N Thd. LT&C
Set @ 10,251' w/pkr shoe
w/ 1180 Sks.
Hole Size 7-7/8"
Open Hole 10,251 - 282'

DST #1
10,179-244' No recovery, DST failed.

DST #2
10,170-282' (Devonian). Rec 9998' free oil, no wtr, & 175 bbl 40° gravity in tank, sampler rec 2255 cc oil + .0325 ft^3 gas, DST No. 2 as follows

IHP	5000#
15 min Preflow	1649# - 2062#
60 min ISIP	4036#
60 min 2nd FP	2319# - 3743#
120 min FSIP	4036#
FHP	5000#
BHT	157°F

Gas & fluid to surface in 30 mins. after flow
TOC 8900' calculated

Plug Back Total Depth 10,280'
Total Depth 10,280'
Well Name Culp Ranch Unit #1

VII. Data For the Proposed Disposal Well

1) Average daily rate 500 BWPD increasing to a maximum daily rate of 4000 BWPD.

2) This will be a closed system designed to keep oxygen from entering the SWD well. An oil blanket will be kept in the disposal tank. Automatic kill switch will keep the oil blanket from being pumped down the disposal well.

3) Initially the disposal well should be on a vacuum. The maximum pressure will not exceed 2000 PSI.

4) There are a number of San Andres disposal wells in Eddy, Lee and Chaves counties, New Mexico. Quite often produced Devonian water is disposed by using these wells. There does not appear to be a major compatibility problem. An analysis of the Devonian water is attached. Also attached is a letter from Martin Water Laboratories Inc. dated May 17, 1988. In this letter it is indicated that the hydrogen sulfide normally found in the San Andres formation could cause minor iron sulfide precipitation. Corrosion in the proposed system should be minimal as it is planned to internally coat the surface line tubing and packer to prevent corrosion. Should iron sulfide be precipitated it can be easily removed by acidizing.

5) The disposal of the produced water will be into a zone known to be not productive of oil and gas at or within one mile of the proposed well. A typical water analysis for the San Andres formation is attached.

VII. 4)

P O BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

LABORATORY NO. 28349
SAMPLE RECEIVED 2-26-88
RESULTS REPORTED 3-1-88

TO: Bell, Foy & Middlebrook
300 West Texas, Suite 210, Midland, TX

COMPANY Bell, Foy & Middlebrook LEASE Culp Ranch Unit
FIELD OR POOL Wildcat
SECTION ___ BLOCK ___ SURVEY ___ COUNTY Chaves STATE NM
SOURCE OF SAMPLE AND DATE TAKEN:
NO. 1 Recovered water - taken from Culp Ranch Unit #1. 2-25-88
NO. 2
NO. 3
NO. 4
REMARKS: Devonian

CHEMICAL AND PHYSICAL PROPERTIES

	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0337			
pH When Sampled				
pH When Received	6.49			
Bicarbonate as HCO_3	651			
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	5,200			
Calcium as Ca	1,660			
Magnesium as Mg	255			
Sodium and/or Potassium	15,716			
Sulfate as SO_4	2,196			
Chloride as Cl	25,922			
Iron as Fe	3.3			
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	46,390			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen, Winkler				
Hydrogen Sulfide	0.0			
Resistivity, ohms/m at 77° F.	0.175			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The above results correlate well with our nearest Devonian records in the Caprock field.

Form No. 3

By W. Keegan White, B.S.

cc: Mr. Robert Setzler, Midland

VII. 4)

Martin Water Laboratories, Inc.
WATER CONSULTANTS SINCE 1953
BACTERIAL AND CHEMICAL ANALYSES

P.O. BOX 1468
MONAHANS, TEXAS 79756
PH. 943-3234 or 563-1040

709 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 683-4521

May 17, 1988

Mr. Robert Setzler
4101 Dawn Circle
Midland, Texas 79701

Re: Bell, Foy & Middlebrook

Dear Mr. Setzler:

The objective of this letter is to evaluate possible compatibility between the Culp Ranch Unit #1 water reported on laboratory #288349 (3-1-88) and San Andres water in the area. Our nearest San Andres records are very distant, ranging from 20-25 miles north and northwest and 25 miles to the northeast; therefore, there is questionable reliability in these records regarding characteristics of San Andres in the area of this Devonian well. However, in making these comparisons, we have identified a single factor that could be of concern. Some of these distant San Andres records have hydrogen sulfide, which could be expected to cause minor iron sulfide precipitation when mixed with this Devonian water. However, if the iron content in this Devonian is ever higher from more corrosion, then this would increase the incompatibility.

In the above we have addressed the possibility of combining these waters on the surface for re-injection. However, we would have no concern regarding the mild incompatibility discussed above if the San Andres were to be injected into the Devonian interval. This is to say that we would not expect this incompatibility to prevent injecting San Andres into the Devonian interval.

We have attempted to give some insight into possible compatibility regarding the waters in question. However, we do feel that if there is any known San Andres in the area of the Graham Springs field, a record should be obtained of this water to establish a more accurate evaluation of compatibilities.

Very truly yours,

Waylan C. Martin

WCM/sn

VII 5.

SAN ANDRES
WATER ANALYSIS REPORT

Company _____ Date Sampled 5-3-88

Field Chaveroo County Lea

Lease _____ State New Mexico

Well _____ Formation San Andres

Type of Water Produce Water, B/D _____

Sampling Point Well Head Sampled By _____

DISSOLVED SOLIDS

CATIONS	mg/l		meq/l
Sodium, Na+(Calc)	60743	÷ 23	2641
Calcium, Ca++	28400	÷ 20	1420
Magnesium, Mg++	6561	÷ 12.2	538
Barium, Ba++	Neg.	÷ 68.7	-0-
Iron, Fe (Total)	4		

ANIONS			
Chloride, Cl-	163000	÷ 35.5	4592
Sulfate, So_4=	250	÷ 48	5
Carbonate, Co3	0	÷ 30	0
Bicarbonate, HCo3	122	÷ 61	2

OTHER PROPERTIES

pH 5.2

Specific Gravity 1.140

H_2S Positive

Total Dissolved Solids 259076

Total Hardness 98000

VIII. GEOLOGIC DATA FOR DISPOSAL ZONES

Name: Lower San Andres

Depth: 3996' - 4106'

Thickness: 10'

Lithology: Dolomite: Light Brown - Tan, very fine crystalline

Porosity: (Density/Neutron Crossplot) 16 - 18%

Resistivity: 5 - 10 ohms - 100% salt water

Depth: 4100 - 4122'

Thickness; 22'

lithology: Sandstone: clear - frosted, very fine to fine-grain, rounded to subrounded.

Porosity: (Density Neutron Crossplot) 22 - 24%

Resistivity: 1 ohm - 100% salt water

The Ogallala appears to be the only source of potable ground water in this area. Depth to groundwater in the Ogallala does not exceed 500 feet in this area. There are no known sources of drinking water below the injection interval.

IX. PROPOSED STIMULATION TREATMENT:

1) Remove marker. Cut plate off 9-5/8" casing. Install well head.

2) Drill out the following cmt plugs, using drill collars, bit casing scraper and 3-1/2" work string.

   a) 0 - 50'

   b) 733' - 833'

   c) 1575' - 1675'

3) Pressure test 9-5/8" csg and cmt plug from 4375'-4225' to 2000#. If system holds pressure proceed to step 4. If it does not hold pressure, set CIBP @ 4200' & cap w/10' cmt POH w/work string and BHA.

4) Run correlation log & perf 3996' - 4106' & 4100' - 4122' w/2 jet shot/foot.

5) Run work string and RTTS pkr. Acidize intervals 3996' - 4106' and 4100' - 4122' w/2500 gal 15% NEFE acid. Establish injection rate. If rate is less than 2 BPM on a vacuum proceed to step No. 6.

6) Frac well with 15,000 gal Gel carrying 21,300# 20-40 mesh sand at 15 BPM at 2000# WHP.

7) POH w/work string & RTTS pkr. RIH w/plastic coated 2-7/8" tbg and plastic coated Baker 51B-A3 Lok-Set csg pker for 9-5/8" csg. Set pkr at 3950' in 10,000# tension.

8) Fill annulus w/inhibited 2% KCL wtr. w/gage at surf to monitor csg press. & second gage to monitor disposal tbg. pressure.

9) Install well head. Place well on disposal service.

10) See attached well bore schematic.

IX

DATE 5-9-88

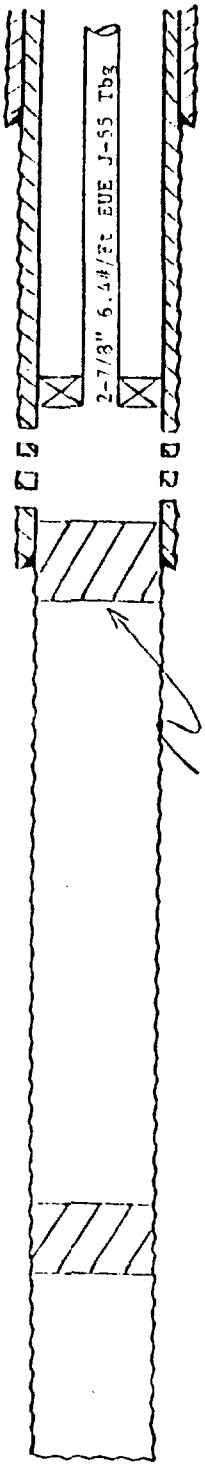
PROPOSED
WELL DATA SHEET

Lease Mescalero Federal Well No. 1

Location 1980' FNL & 1980' FWL, Sec. 11, T-12-S, R-30-E County Chaves State New Mexico

K.B. Elev. 4022'
G.L. Elev. 4003'
D.F. Elev. 4021'

Date June - 1988
Formation(s) San Andres



13-3/8" N.A. #
Gr. N.A. Thd. ST&C
Set @ 429'
w/ 350 Sks.
Hole Size 16"
Cement circulated
Tested csg to 600#
Held O.K.

Baker Model A-3 Lok-Set

Proposed San Andres perf.
3996'-4106' & 4100'-4122'

9-5/8" 36 #
Gr. K-55 Thd. LT&C
Set @ 4300'
w/ 2113 Sks.
Hole Size 12-1/4"
Cement circulated
Tested csg to 1040#
Held O.K.

105 sx "H" cmt plug
from 4375' - 4225'
Found top of plug
w/wire line at 4231'

85 sx "H" cmt plug
from 7670' - 7470'

Top of Devonian 10,259'

Well P&A Did not run prod. csg.

Hole Size 8-1/4"

Proposed San Andres Disposal Zone:

Perf: 3996'-4016' & 4100'-4122'
(2 jet/ft)

Treatment: Acidize w/2500 gal. 15% acid. Establish inj. rate if necessary frac w/15,000 gal Gel containing 21,300# snd.

NOTE: Tbg & Pkr plastic coated for corrosion. Annulus (9-5/8 x 2-7/8") filled w/inhibited csg pack fluid

Plug Back Total Depth 4231'
Total Depth 10,554'
Well Name Mescalero Federal #1

X. Logs have been submitted to the NMOCC for this well in October 1986 and are now a part of the public record. Formation tops for well are as follows:

MESCALERO FEDERAL NO. 1

KB 4022

Anhydrite	1690	(+2332)
Yates	2372	(+1650)
San Andres	2840	(+1182)
Tubb	5678	(-1656)
Abo	6500	(-2478)
Base of Abo	6950	(-2928)
Wolfcamp	7600	(-3578)
Cisco	8188	(-4166)
Canyon	8520	(-4498)
Strawn	8922	(-4900)
Atoka	9250	(-5228)
Mississippian	9580	(-5558)
Woodford	10235	(-6213)
Devonian	10259	(-6237)
Total Depth	10550	(-6528)

None of the zones were found to be commercially productive of oil or gas

XI. A chemical analysis for fresh water is attached.

XII. All available data have been examined and there is no evidence that open faults or other hydrologic connection exists between the disposal zone and any underground source of drinking water.

XIII. A copy of proof of notice is attached.

XI

P O BOX 1468
MONAHANS TEXAS 79756
PH. 943-3234 OR 563-1040

Martin Water Laboratories, Inc.

709 W INDIANA
MIDLAND TEXAS 79701
PHONE 683-4521

RESULT OF WATER ANALYSES

LABORATORY NO. 588199

TO: Bell, Foy & Middlebrook
310 West Texas, Suite 210, Midland, TX

SAMPLE RECEIVED 5-23-88

RESULTS REPORTED 5-24-88

COMPANY Bell, Foy & Middlebrook LEASE Culp Ranch Unit

FIELD OR POOL Graham Springs

SECTION 11 BLOCK ____ SURVEY T-12S & R-30E COUNTY Chaves STATE NM

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Ogallala water - taken from windmill ½ mile north of Culp Ranch Unit #1. 5-21-88

NO. 2 Ogallala water - taken from windmill 3/4 mile northwest of Culp Ranch Unit #1. 5-21-88

NO. 3

NO. 4

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0020	1.0028		
pH When Sampled				
pH When Received	7.36	9.77		
Bicarbonate as HCO_3	173	83		
Supersaturation as $CaCO_3$				
Undersaturation as $CaCO_3$				
Total Hardness as $CaCO_3$	168	95		
Calcium as Ca	48	27		
Magnesium as Mg	11	7		
Sodium and/or Potassium	6	87		
Sulfate as SO_4	25	113		
Chloride as Cl	9	21		
Iron as Fe	0.48	0.24		
Barium as Ba				
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	273	378		
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen, Winkler				
Hydrogen Sulfide	0.0	0.0		
Resistivity, ohms/m at 77° F.	34.00	18.00		
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				
Carbonate, as CO_3	0	41		

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks The undersigned certifies the above to be true and correct to the best of his knowledge and belief.

Form No. 3

By Waylan C. Martin, M.A.

cc: Mr. Robert Setzler, Midland

AFFIDAVIT OF PUBLICATION

County of Chaves
State of New Mexico, }

I, Jean M. Pettit,

Manager

Of the Roswell Daily Record, a daily newspaper published at Roswell, New Mexico, do solemnly swear that the clipping hereto attached was published once a week in the regular and entire issue of said paper and not in a supplement thereof for a period

of once

..... weeks

beginning with the issue dated 31

May, 19 88

and ending with the issue dated 31

May, 19 88

Jean M. Pettit
Manager

Sworn and subscribed to before me

this 31st day of

May, 19 88

Marylou S. Skaggs
Notary Public

My commission expires

July 21, 19 90

(Seal)

Publish May 31, 1988

PROOF OF NOTICE

Foy and Middlebrook, 310 West Texas, Suite 210, Midland, Texas 79701, Phone (915) 687-0144, Mr. Steven Foy, owner, has applied to the State of New Mexico Energy, Minerals & Natural Resource Department for a permit to dispose of produced water into a formation not productive of oil and gas. It is proposed to convert the Mescalero Federal No. 1 into a salt water disposal well. This well is located 1980' FN&WL (F) Sec. 11, T-12-S, R-30-E, Chaves County, New Mexico. Injection will be into perforations from 3996' to 4122' into the lower San Andres formation. Initial injection pressure is anticipated to be 0# with the maximum pressure not to exceed 2000#. Should anyone object, please file your objection with the NMOCC, P.O. Box 2088, Santa Fe, New Mexico 87501 within 15 days after this notice has been published.

Foy and Middlebrook, 310 West Texas, Suite 210, Midland, Texas 79701, Phone (915) 687-0144, Mr. Steven Foy, proposes to convert the Mescalero Federal No. 1 into a salt water disposal well. This well is located 1980' FN&WL (F) Sec. 11, T-12-S, R-30-E, Chaves County, New Mexico. Injection will be into perforations from 3996' to 4122' into the lower San Andres formation. Initial injection pressure is anticipated to be 0# with the maximum pressure not to exceed 2000#. Should anyone object, please file your objection with the NMOCC, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days after this notice has been published.

STATE OF NEW MEXICO

ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION

~~HOBBS DISTRICT OFFICE~~

6-8-88

GARREY CARRUTHERS
GOVERNOR

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

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

RE: Proposed:
MC _____
DHC _____
NSL _____
NSP _____
SWD X
WFX _____
PMX _____

Gentlemen:

I have examined the application for the:

Foy & Middlebrook (Conoco Inc) Mescalero Fed #1-F 11-12-30
Operator Lease & Well No. Unit S-T-R

and my recommendations are as follows:

OK

Yours very truly,

Jerry Sexton
Supervisor, District 1

/ed