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

APPLICATION FOR AUTHORIZATION TO INJECT

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

II. Operator: Mewbourne Oil Company

Address: P. O. Box 7698 - Tyler, Texas 75711

Contact party: Kevin Mayes/Ken Calvert Phone: 903/561-2900

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.

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.

* 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.

VII. Attach data on the proposed operation, including:

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.

IX. Describe the proposed stimulation program, if any.

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

* 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.

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.

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

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: Kevin Mayes Title Engineer

Signature: Kevin Mayes Date: 1/18/94

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

RECEIVED
OIL CONSERVATION DIVISION
1994 JAN 20 PM 1:23

KEVIN MAYES
NEW MEXICO
11576
REGISTERED PROFESSIONAL ENGINEER

10959 & 10960

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

(1) Lease name; Well No.; location by Section, Township, and Range; and footage location within the section.

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;

(3) the formation name and depth with expected maximum injection rates and pressures; and

(4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

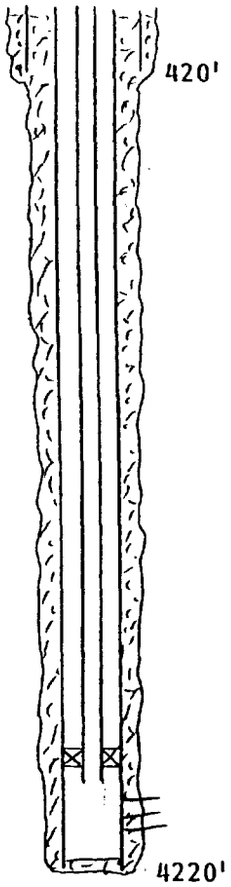
ITEM III OF NEW MEXICO OCD FORM C-108
INJECTION WELL DATA SHEET

2

Anadarko Petroleum (OPERATOR) Cavalcade Federal (LEASE)

4 (WELL NO.) 400' FSL & 660' FEL (FOOTAGE LOCATION) 21 (SECTION) 18S (TOWNSHIP) 32E (RANGE)

Schematic



TD = 4225'

Tabular Data

Surface Casing

Size 8-5/8" Cemented with 250 sx.

TOC Surface feet determined by calculation

Hole size Assume 12-1/4"

Intermediate Casing

Size N/A" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size 4-1/2" Cemented with 1160 sx.

TOC Surface feet determined by calculation

Hole size Assume 7-7/8"

Total depth 4225'

Injection interval

4096 feet to 4130 feet

(perforated or open-hole, indicate which)

Note: This well is already injecting under OCD Order R-9240.

Tubing size 2-3/8" lined with Plastic (material) set in a

Baker Lok-set (brand and model) packer at 4023 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation _____

2. Name of Field or Pool (if applicable) _____

3. Is this a new well drilled for injection? ☐ Yes ☐ No

If no, for what purpose was the well originally drilled? _____

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) _____

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. _____

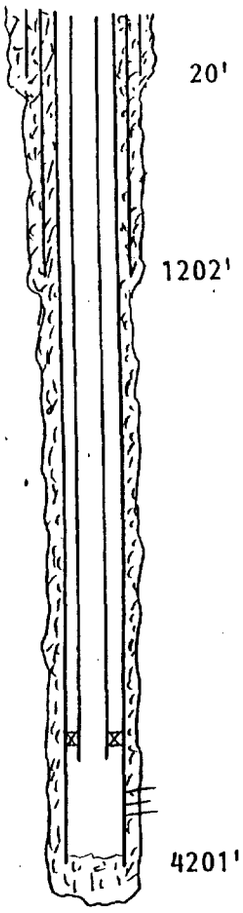
ITEM III OF NEW MEXICO OCD FORM C-108
INJECTION WELL DATA SHEET

3

Anadarko Petroleum (OPERATOR) Bennett Federal (LEASE)

1	660' FSL & 1650' FWL	22	18S	32E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic



Tabular Data

Surface Casing

Size 13-3/8" Cemented with 20 sx.

TOC Surface feet determined by calculation

Hole size Assume 17-1/2"

Intermediate Casing

Size 8-5/8" Cemented with 600 sx.

TOC Surface feet determined by calculation

Hole size Assume 12-1/4"

Long string

Size 5-1/2" Cemented with 775 sx.

TOC Surface feet determined by calculation

Hole size Assume 7-7/8"

Total depth 4302'

Injection interval

3879 feet to 4138 feet

(perforated or open-hole, indicate which)

Tubing size 2-3/8" lined with bare steel (material) set in a

Otis Permatrieve (brand and model) packer at 3779 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Queen/Penrose
2. Name of Field or Pool (if applicable) Querecho Plains
3. Is this a new well drilled for injection? ☐ Yes ☒ No

   If no, for what purpose was the well originally drilled? oil production
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used)

   No
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

   Top of Yates @ +2730'

   Top of Grayburg @ +4430'

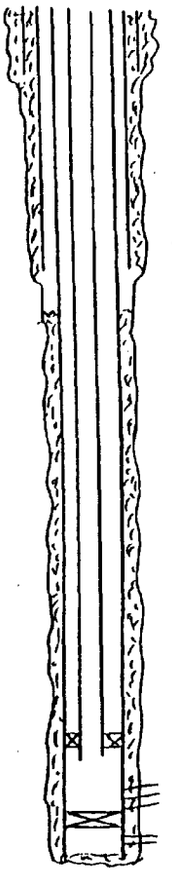
Note: All top of cement calculations incorporate 75% of the yield

Note: Cement assumed to be Class "C" unless otherwise stated

ITEM III OF NEW MEXICO OCD FORM C-108
INJECTION WELL DATA SHEET

OPERATOR	LEASE			
C. W. Stumhoffer	Flip Federal			
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
1	1650' FNL & 330' FWL	23	18S	32E

Schematic



Tabular Data

Surface Casing

Size 13-3/8" Cemented with 5 yds. ~~xx~~.

TOC Surface feet determined by calculation

Hole size Assume 17-1/2"

Intermediate Casing

Size 8-5/8" Cemented with 500 sx.

TOC Surface feet determined by calculation

Hole size Assume 12-1/4"

Long string

Size 4-1/2" Cemented with 550 sx.

TOC 2360 feet determined by calculation

Hole size Assum 7-7/8"

Total depth 4750'

Injection interval

~~4143~~ feet to 4150 feet

(perforated) or open-hole, indicate which)

Tubing size 2-3/8" lined with bare steel (material) set in a

Otis Permatrieve (brand and model) packer at 4043 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Penrose

2. Name of field or Pool (if applicable) Querecho Plains

3. Is this a new well drilled for injection? ☐ Yes ☒ No

   If no, for what purpose was the well originally drilled? oil production

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) Perforations 4648'-68'; Plug back to 4229'

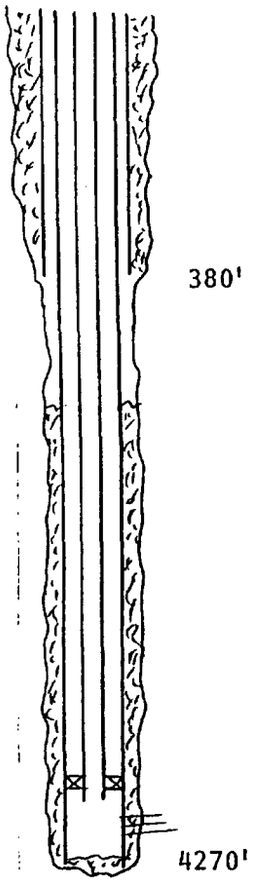
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

ITEM III OF NEW MEXICO OCD FORM C-108
INJECTION WELL DATA SHEET

Mewbourne Oil Company (OPERATOR) Edith Federal (LEASE)

2	1980' FSL & 1980' FEL	23	18S	32E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic



Tabular Data

Surface Casing

Size 8-5/8" Cemented with 250 sx.

TOC Surface feet determined by visual

Hole size 11"

Intermediate Casing

Size _____" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size 4-1/2" Cemented with 300 sx.

TOC 2966 feet determined by calculation

Hole size 7-7/8"

Total depth 4270'

Injection interval

3958 feet to 4224 feet

(perforated or open-hole, indicate which)

Tubing size 2-3/8" lined with bare steel (material) set in a

Otis Permatrieve (brand and model) packer at 3858 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Queen/Penrose
2. Name of field or Pool (if applicable) Querecho Plains
3. Is this a new well drilled for injection? ☐ Yes ☒ No

   If no, for what purpose was the well originally drilled? oil production
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used)

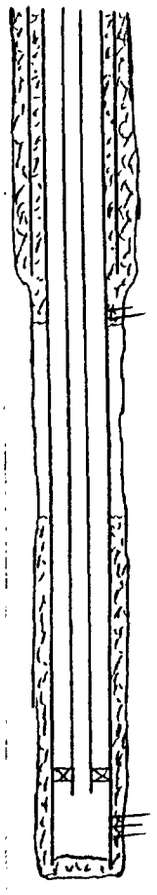
   No
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

ITEM III OF NEW MEXICO OCD FORM C-108
INJECTION WELL DATA SHEET

Mewbourne Oil Company (OPERATOR) Marshall Federal (LEASE)

1	660' FSL & 1980' FWL	23	18S	32E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic



Tabular Data

Surface Casing
Size 8-5/8" Cemented with 390 sx.
TOC Surface feet determined by visual
Hole size 12-1/4"

Intermediate Casing
Size _____" Cemented with _____ sx.
TOC _____ feet determined by _____
Hole size _____

Long string
Size 4-1/2" Cemented with 300 sx.
TOC 2934 feet determined by calculation
Hole size 7-7/8"
Total depth 4250'

Injection interval
4176 feet to 4190 feet
(perforated or open-hole, indicate which)

Tubing size 2-3/8" lined with bare steel (material) set in a
Otis Permatrieve (brand and model) packer at 4076 feet
(or describe any other casing-tubing seal).

Other Data

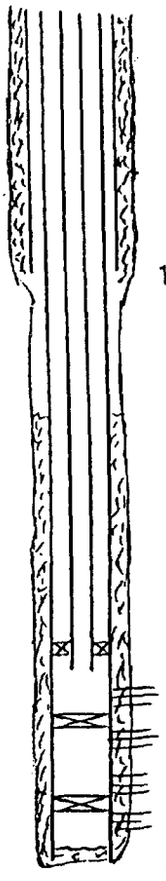
1. Name of the injection formation Penrose
2. Name of Field or Pool (if applicable) Querecho Plains
3. Is this a new well drilled for injection? ☐ Yes ☒ No
   If no, for what purpose was the well originally drilled? oil production
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used)
   A casing leak from 763'-794' was squeezed with 196 sx. of Class "C" in July 1990.
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

ITEM III OF NEW MEXICO OCD FORM C-108
INJECTION WELL DATA SHEET

Mewbourne Oil company (OPERATOR) Walker Federal (LEASE)

1 (WELL NO.) 330' FNL & 330' FWL (FOOTAGE LOCATION) 26 (SECTION) 18S (TOWNSHIP) 32E (RANGE)

Schematic



Tabular Data

Surface Casing
Size 8-5/8" Cemented with 550 sx.
TOC Surface feet determined by visual
Hole size 12-1/4"

Intermediate Casing
Size _____" Cemented with _____ sx.
TOC _____ feet determined by _____
Hole size _____

Long string
Size 5-1/2" Cemented with 500 sx.
TOC 2506 feet determined by CBL as reported in drilling report
Hole size 7-7/8"
Total depth 4725'

Injection Interval

2/83 { 3914 feet to 3947 feet
(perforated or open-hole, indicate which)

7/89 {
4658'-4670' Wet
4430'-4442' Wet ← Frac
4214'-4220' ← Frac
CIBP @ 4580'

3/90 { CIBP @ 4162'

Tubing size 2-3/8" lined with bare steel (material) set in a Otis Permatrieve (brand and model) packer at 3814 feet
(or describe any other casing-tubing seal).

Other Data

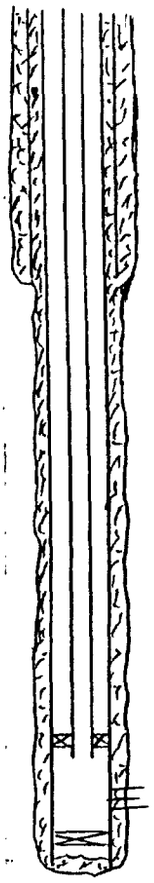
1. Name of the injection formation Queen
2. Name of field or Pool (if applicable) Querecho Plains
3. Is this a new well drilled for injection? ☐ Yes ☒ No
   If no, for what purpose was the well originally drilled? oil production
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used)
   Other perforations @ 4658'-70', 4430'-42' & 4214'-20'
   CIBP's set @ 4580' & 4162'
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

ITEM III OF NEW MEXICO OCD FORM C-108
INJECTION WELL DATA SHEET

Mewbourne Oil Company (OPERATOR) Federal E (LEASE)

8 (WELL NO.) 1650' FNL & 660' FEL (FOOTAGE LOCATION) 27 (SECTION) 18S (TOWNSHIP) 32E (RANGE)

Schematic



Tabular Data

Surface Casing

Size 8-5/8" Cemented with 600 sx.

TOC Surface feet determined by visual

Hole size 12-1/4"

Intermediate Casing

Size _____" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size 4-1/2" Cemented with 1000 sx.

TOC Surface feet determined by visual

Hole size 7-7/8"

Total depth 4325'

Injection interval

3934 feet to 4198 feet

(perforated or open-hole, indicate which)

Tubing size 2-3/8" lined with bare steel (material) set in a

Otis Permatrieve (brand and model) packer at 3834 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Queen/Penrose
2. Name of Field or Pool (if applicable) Querecho Plains
3. Is this a new well drilled for injection? ☐ Yes ☒ No

   If no, for what purpose was the well originally drilled? oil production
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used)

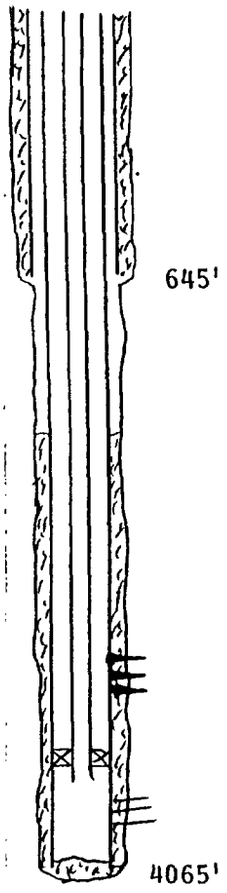
   No
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

ITEM III OF NEW MEXICO OCD FORM C-108
INJECTION WELL DATA SHEET

Mewbourne Oil Company — Anadarko Federal
OPERATOR — LEASE

WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
2	1650' FSL & 1980' FWL	27	18S	32E

Schematic



Tabular Data

Surface Casing
Size 10-3/4" Cemented with 325 sx.
TOC Surface feet determined by visual
Hole size 12"

Intermediate Casing
Size _____" Cemented with _____ sx.
TOC _____ feet determined by _____
Hole size _____

Long string
Size 4-1/2" Cemented with 400 sx.
TOC 2406 feet determined by calculation
Hole size 9" to 1260', 8" to TD
Total depth 4070'

Injection interval
3888 feet to 4026 feet
(perforated or open-hole, indicate which)

Tubing size 2-3/8" lined with bare steel (material) set in a
Otis Permatrieve (brand and model) packer at 3788 feet
(or describe any other casing-tubing seal).

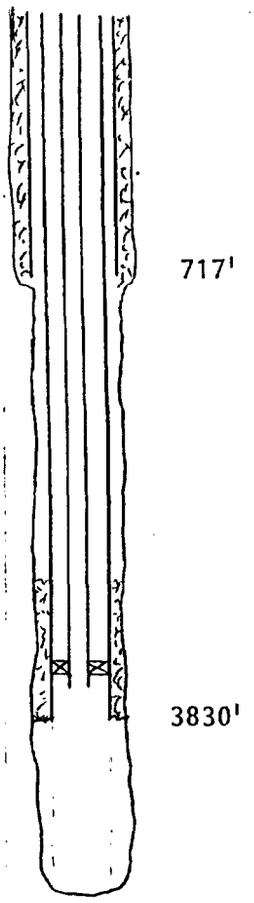
Other Data

1. Name of the injection formation Queen
2. Name of field or Pool (if applicable) Querecho Plains
3. Is this a new well drilled for injection? ☐ Yes ☒ No
   If no, for what purpose was the well originally drilled? oil production
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used)
   CIBP @ 3700'. Open perfs. @ 3203'-77'.
   There is a CIBP set @ 3150' for T.A. purposes.
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

ITEM III OF NEW MEXICO OCD FORM C-108
INJECTION WELL DATA SHEET

OPERATOR	LEASE			
Mewbourne Oil Company	Anadarko Federal			
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
3	1650' FSL & 990' FWL	27	18S	32E

Schematic



Tabular Data

Surface Casing

Size 10-3/4" Cemented with 525 sx.

TOC Surface feet determined by visual

Hole size 13-3/8"

Intermediate Casing

Size 7" Cemented with 225 sx.

TOC 3217 feet determined by calculation

Hole size 10-3/4"

Long string

Size _____" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Total depth _____

Injection interval

3830 feet to 4060 feet

(perforated or (open-hole,) indicate which)

Tubing size 2-3/8" lined with bare steel (material) set in a

Otis Permatrieve (brand and model) packer at 3730 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Queen

2. Name of field or Pool (if applicable) Querecho Plains

3. Is this a new well drilled for injection? ☐ Yes ☒ No

   If no, for what purpose was the well originally drilled? oil production

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used)

   No

   There is a CIBP set @ 3740' w/30 sx. for T.A. purposes.

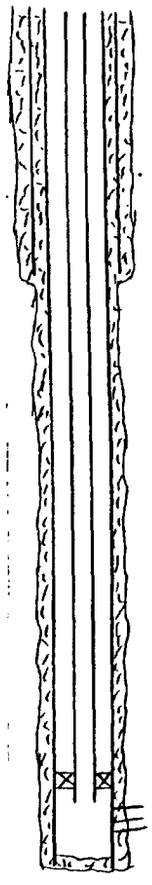
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

ITEM III OF NEW MEXICO OCD FORM C-108
INJECTION WELL DATA SHEET

Mewbourne Oil Company — OPERATOR
Federal E — LEASE

WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
9	1980' FNL & 330' FEL	28	18S	32E

Schematic



Tabular Data

Surface Casing
Size 8-5/8" Cemented with 600 sx.
TOC Surface feet determined by visual
Hole size 12 1/2"

Intermediate Casing
Size _____" Cemented with _____ sx.
TOC _____ feet determined by _____
Hole size _____

Long string
Size 4-1/2" Cemented with 850 sx.
TOC Surface feet determined by visual
Hole size 7 7/8"
Total depth 4290'

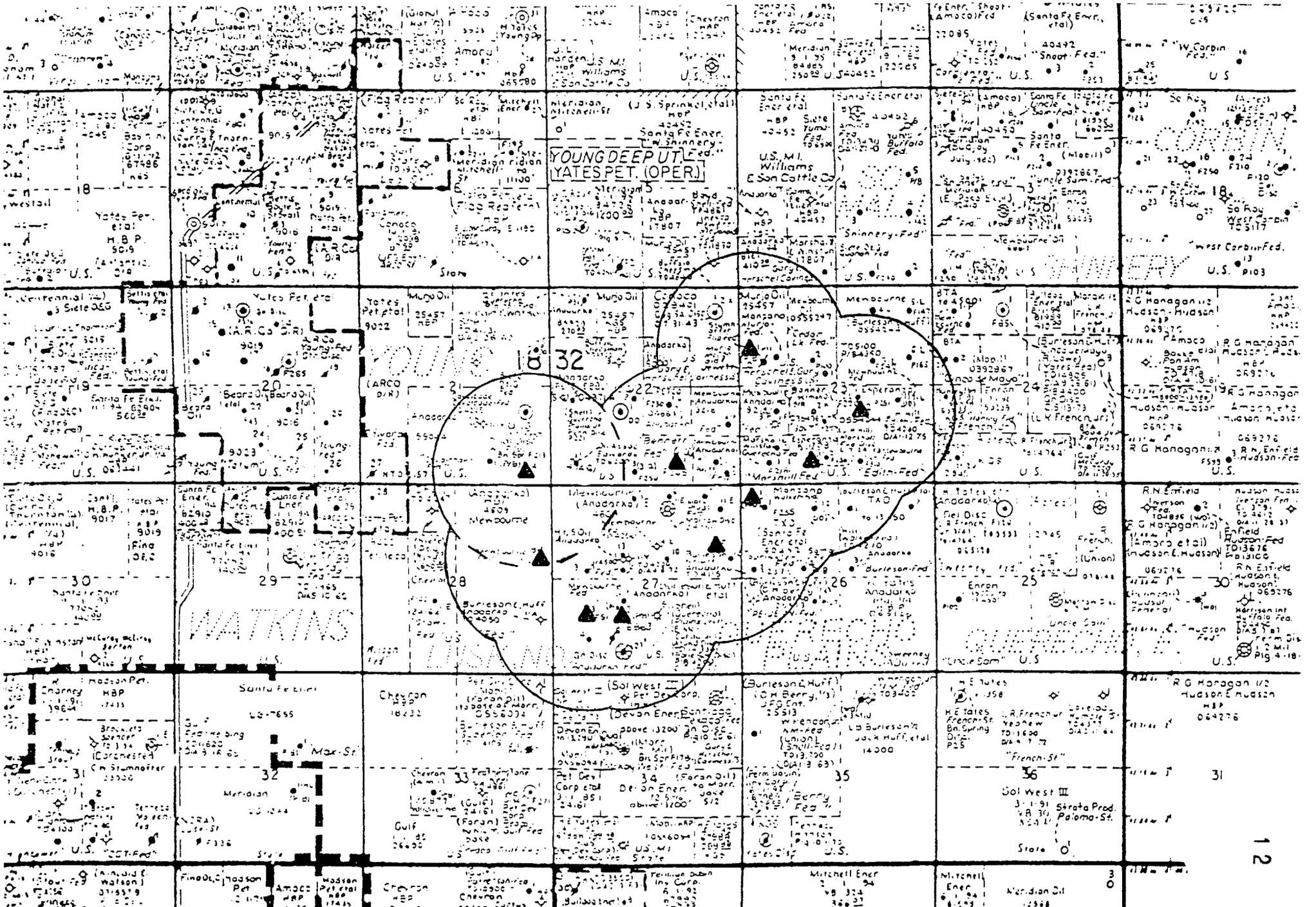
Injection interval
3875 feet to 4152 feet
(perforated or open-hole, indicate which)

Tubing size 2-3/8" lined with bare steel (material) set in a
Otis Permatrieve (brand and model) packer at 3775 feet
(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Queen/Penrose
2. Name of field or Pool (if applicable) Querecho Plains
3. Is this a new well drilled for injection? ☐ Yes ☒ No
   If no, for what purpose was the well originally drilled? oil production
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used)
   No
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

ITEM V OF NEW MEXICO OCD FORM C-108
Map of All Wells Within 2 Miles of Injectors With 1/2 Mile Radius of Investigation
Querecho Plains Queen Associated Sand Unit



ITEM VI OF NEW MEXICO OCD FORM C-108
WELLS WITHIN REVIEW AREA WHICH PENETRATE THE QUEEN
QUERECHO PLAINS QUEEN ASSOCIATED SAND UNIT
1-14-94/KMM

OPERATOR	LEASE/WELL	LOCATION	TYPE	CONSTRUCTION	TOP OF CEMENT	DATE DRILLED	TD	COMPLETION & COMMENTS
MANZANO	JEWITT FEDERAL #1	T18S, R32E, SEC 15 660 FSL, 660 FEL	OIL	13 3/8 @ 610' CMT W/ 475 SX 8 5/8 @ 4425' CMT W/ 600 SX 5 1/2 @ 8620' cmt w/ 850 sx	SURFACE 2715' 3690' CBL	12/15/70	11,830	DST 10072-120' DST 11627'-710' D&A RE-ENTER 1/92 SET 5 1/2" CASING PERF & TEST 8315'-8430' PB TO 6587' OPEN PERFS 6290'-6310'
ANADARKO PETROLEUM	CAVALCADE FED #3	T18S,R32E,SEC 21 1980 FSL, 660 FEL	T.A.	13 3/8" @ 753' CMT W/ 750 SX 8 5/8" @ 3465' CMT W/ 1700 SX 5 1/2" @ 10787' CMT W/400 SX	SURFACE SURFACE 8917'	9/16/65	12,873	O/H 10787'-11747' PERF 10502'-10712' SQZ W/ 300 SX PERF 8708'-8716' SQZ W/ 100 SX O/H 11747'-12873' PLUG 25 SX @ 12244' PLUG 25 SX @ 11925' PLUG 50 SX @ 10887' SQZ 5442'-3772' SQZ 1348'-SURFACE CLEAN OUT TO 10052'
PETRO. CORP. OF TEXAS	CAVALCADE FED #5	T18S,R32E,SEC 21 1650 FSL, 1800' FEL	D & A	SEE SCHEMATIC		10/14/85	4225	SEE SCHEMATIC
ANADARKO PETROLEUM	CAVALCADE FED #1	T18S,R32E,SEC 21 660 FSL, 1650 FEL	OIL	13 3/8" @ 405 CMT W/ 420 SX 8 5/8 @ 4175 CMT W/ 2550 SX 5 1/2 @ 10980 CMT W/ 1100 SX	SURFACE SURFACE 5837'	9/22/84	10,980	NUMEROUS DST PERF 10758'-10808' PB 10914' PERF 9760'-9768' PERF 10565'-10581' PB 4165' PERF 4103'-4138'
MALJAMAR OIL & GAS	CHEESMAN #2-X	T18S, R32E, SEC 22 C NE NE	P & A	10 @ 1165' CMT W/ 50 7 @ 3940' CMT W/ 150	733' 2868'	11/27/42	4840	LOST ORIGINAL HOLE AT 72 MOVED RIG 15' WEST O/H FROM TD TO 7" SHOE P & A
MEWBOURNE OIL CO.	FEDERAL F #2	T18S, R32E, SEC 22 1650 FSL, 330 FEL	OIL	8 5/8 @ 1194' CMT W/ 500 SX 4 1/2 @ 4282' CMT W/ 1000 SX	SURFACE(V) SURFACE(V)	11/11/82	4300	OPEN PERFS 3881'-4151'
ANADARKO PETROLEUM	FEDERAL J #1	T18S, R32E, SEC 22 2180 FSL, 1980 FEL	OIL	8 5/8 @ 1204' CMT W/ 650 SX 5 1/2 @ 4298' CMT W/ 950 SX	SURFACE SURFACE	2/13/83	4300	OPEN PERFS 3868'-4136'
ANADARKO PETROLEUM	BENNET FEDERAL Q #2	T18S, R32E, SEC 22 2310 FSL, 2310 FWL	OIL	8 5/8 @ 1203' CMT W/ 800 SX 5 1/2 @ 4292' CMT W/ 1150 SX	SURFACE SURFACE	2/23/83	4300	OPEN PERFS 3866'-4131'
ANADARKO PETROLEUM	QUERECHO PLAINS UNIT #1	T18S, R32E, SEC 22 1980 FSL, 1980 FWL	OIL	13 3/8 @ 734' CMT W/ 750 SX 9 5/8 @ 4539' CMT W/ 1150 SX 7 @ 13755' CMT W/ 900 SX	SURFACE 903' 8491'	7/10/56	14217	NUMBEROUS DST & CORE OPEN PERFS 11595'-11660'

ANADARKO PETROLEUM	BENNET FEDERAL Q #5	T18S, R32E, SEC 22 2310 FSL, 660 FWL	OIL	8 5/8 @ 1172' CMT W/ 600 SX 5 1/2 @ 4292' CMT W/ 800 SX	SURFACE SURFACE	4/30/83	4300	OPEN PERFS 3842'-4110'
OIL ASSOC. INC.	EDWARDS #1	T18S, R32E, SEC 22 660 FSL, 660 FWL	D & A	13 3/8" @ 342' 10 3/4" @ 1100' MUD 8 5/8" @ 2530' CMT W/ 50 SX	342' 1100' 2176'	2/6/51	6200	DST 5711'-5729' D & A
ANADARKO PETROLEUM	BENNET FEDERAL Q #4	T18S, R32E, SEC 22 660 FSL, 710 FWL	OIL	8 5/8 @ 1200' CMT W/ 700 SX 5 1/2 @ 4300' CMT W/ 1300 SX	SURFACE SURFACE	4/21/83	4300	OPEN PERFS 3846'-4130'
ANADARKO PETROLEUM	BENNET FEDERAL Q #3	T18S, R32E, SEC 22 330 FSL, 2310 FWL	OIL	8 5/8 @ 1203' CMT W/ 700 SX 5 1/2 @ 4295' CMT W/ 1300 SX	SURFACE SURFACE	3/5/83	4300	OPEN PERFS 3872'-4145'
MEWBOURNE OIL CO.	FED H #1	T18S, R32E, SEC 22 660 FSL, 660 FEL	OIL	8 5/8 @ 1196' CMT W/ 600 SX 4 1/2 @ 4290' CMT W/ 900 SX	SURFACE(V) 1327'	8/31/82	4300	OPEN PERFS 3888'-4154'
MEWBOURNE OIL CO.	FED H #2	T18S, R32E, SEC 22 330 FSL, 330 FEL	OIL	13 3/8 @ 440' CMT W/ 400 SX 8 5/8 @ 4472' CMT W/ 2100 SX 5 1/2 @ 8960' CMT W/ 1700 SX	SURFACE(V) SURFACE(V) SURFACE(V)	2/18/86	8960'	OPEN PERFS 8396'-8460'
MEWBOURNE OIL CO.	FED L #4	T18S, R32E, SEC 23 660 FNL, 1650 FEL	WIW	13 3/8 @ 438' CMT W/ 400 SX 8 5/8 @ 4318' CMT W/ 1600 SX 5 1/2 @ 8760' CMT W/ 1325 SX	SURFACE(V) SURFACE(V) 2155'	11/3/87	8760'	OPEN PERFS 8431'-8506' CONVERT TO INJECTION
MEWBOURNE OIL CO.	CEDAR LAKE FED #4	T18S, R32E, SEC 23 330 FNL, 1650 FWL	OIL	8 5/8 @ 450' CMT W/ 300 SX 5 1/2 @ 5003' CMT W/ 1175 SX	SURFACE(V) SURFACE(V)	10/9/91	5003	OPEN PERFS 4834'-4856'
MALJAMAR OIL & GAS	JEWITT-McDONALD #2	T18S, R32E, SEC 23 1980 FNL, 660 FWL	P & A	8 5/8 @ 1348' CMT W/ 50 7 @ 4616' CMT W/ 150	994' 2800'	2/21/44	4809'	O/H FROM TD TO 7" SHOE P & A
MEWBOURNE OIL CO.	MURJO FED #1	T18S, R32E, SEC 23 1850 FNL, 990 FWL	OIL	13 3/8 @ 350' CMT W/ 350 SX 8 5/8 @ 2777' CMT W/ 1200 SX 5 1/2 @ 10800' CMT W/ 650 SX	SURFACE(V) SURFACE(V) 7559'	6/25/87	11780'	PERF & TEST 10648'-10726 PERF & TEST 10172'-10223' PERF & TEST 9619'-9670' SQZ PERFS 9619'-9670' W/ 11 PERF & TEST 9726'-9743' PERF & TEST 9192'-9210' CIBP @ 9560' OPEN PERFS 8283'-8426' RET. BP @ 8506'
MEWBOURNE OIL CO.	CEDAR LAKE FED #2	T18S, R32E, SEC 23 1980 FNL, 1980 FWL	OIL	13 3/8 @ 478' CMT W/ 500 SX 8 5/8 @ 4286' CMT W/ 1400 SX 5 1/2 @ 8708' CMT W/ 1075 SX	SURFACE(V) SURFACE(V) 3347'	11/10/86	8700'	OPEN PERFS 8435'-8501'
MEWBOURNE OIL CO.	CEDAR LAKE FED #1	T18S, R32E, SEC 23 2300 FNL, 2300 FWL	OIL	8 5/8 @ 495' CMT W/ 250 SX 5 1/2 @ 5100' CMT W/ 375 SX	SURFACE(V) 2957'	11/1/74	5100'	PERF & TEST 4674'-4698' PERF & TEST 4627'-4637' PERF & TEST 4430'-4434' BP @ 4350' OPEN PERFS 3927'-4183'
MEWBOURNE OIL CO.	FED L#3	T18S, R32E, SEC 23 1980 FNL, 1650 FEL	OIL	13 3/8 @ 450' CMT W/ 416 SX 8 5/8 @ 4315' CMT W/ 1700 SX 5 1/2 @ 8698' CMT W/ 1475 SX	SURFACE(V) SURFACE(V) 1342'	6/19/87	8698'	OPEN PERFS 8446'-8526'
MEWBOURNE OIL CO.	FED L#6	T18S, R32E, SEC 23 1880 FNL, 660 FEL	OIL	13 3/8 @ 448' CMT W/ 475 SX 8 5/8 @ 4330' CMT W/ 1575 SX 5 1/2 @ 8650' CMT W/ 1400 SX	SURFACE(V) SURFACE(V) SURFACE(V)	7/24/88	8650'	OPEN PERFS 8436'-8520'

MEWBOURNE OIL CO.	FED L#7	T18S, R32E, SEC 23 2310 FSL, 990 FEL	WIW	8 5/8 @ 356' CMT W/ 250 SX 5 1/2 @ 8670' CMT W/ 4630 SX	SURFACE(V) 5/14/88 SURFACE(V)	8670'	DEEPEN FROM OTD @ 4281' OPEN PERFS 8485'-8552' CONVERT TO INJECTION
MEWBOURNE OIL CO.	FED L#2	T18S, R32E, SEC 23 2310 FSL, 2030 FEL	WIW	13 3/8 @ 441' CMT W/ 450 SX 8 5/8 @ 4293' CMT W/ 1800 SX 5 1/2 @ 8750' CMT W/ 925 SX	SURFACE(V) 10/14/86 SURFACE(V) 4137'	8750'	OPEN PERFS 8458'-8531' CONVERT TO INJECTION
MEWBOURNE OIL CO.	GOVERNMENT K #1	T18S, R32E, SEC 23 1700 FSL, 2300 FWL	OIL	8 5/8 @ 418' CMT W/ 300 SX 5 1/2 @ 4800' CMT W/ 750 SX	SURFACE 9/29/74 514'	4800'	OPEN PERFS 4178'-4190'
MEWBOURNE OIL CO.	GOVERNMENT K #2	T18S, R32E, SEC 23 1950 FSL, 1980 FWL	WIW	13 3/8 @ 700' CMT W/ 700 SX 8 5/8 @ 4800' CMT W/ 3100 SX 5 1/2 I/ 4408'-8900' CMT W/ 900 SX	SURFACE(V) 9/19/86 SURFACE(V) 4408'	8900'	OPEN PERFS 8343'-8515' CONVERT TO INJECTION
MEWBOURNE OIL CO.	FED F#1	T18S, R32E, SEC 23 1650 FSL, 990 FWL	OIL	8 5/8 @ 1167' CMT W/ 600 SX 5 1/2 @ 4300' CMT W/ 665 SX	SURFACE(V) 9/29/77 500'	4300'	OPEN PERFS 4132'-4163'
MEWBOURNE OIL CO.	FED F#3	T18S, R32E, SEC 23 1980 FSL, 990 FWL	WIW	13 3/8 @ 480' CMT W/ 275 SX 8 5/8 @ 4285' CMT W/ 1700 SX 5 1/2 @ 8570' CMT W/ 1375 SX	SURFACE(V) 12/31/86 SURFACE(V) SURFACE(V)	8570'	OPEN PERFS 8362'-8448' CONVERT TO INJECTION
MEWBOURNE OIL CO.	QUERECHO FED #1	T18S, R32E, SEC 23 610 FSL, 760 FWL	OIL	13 3/8 @ 354' CMT W/ 385 SX 8 5/8 @ 3047' CMT W/ 1475 SX 5 1/2 @ 8565' CMT W/ 1250 SX	SURFACE 12/31/85 SURFACE 2331'	9580'	NUMBEROUS DST OPEN PERFS 8414'-8447'
MEWBOURNE OIL CO.	MARSHALL FED #2	T18S, R32E, SEC 23 990 FSL, 990 FWL	OIL	8 5/8 @ 367' CMT W/ 350 SX 4 1/2 @ 4293' CMT W/ 860 SX	SURFACE(V) 12/23/81 SURFACE(V)	4293'	OPEN PERFS 3906'-4160'
MEWBOURNE OIL CO.	QUERECHO FED #2	T18S, R32E, SEC 23 760 FSL, 2310 FWL	OIL	13 3/8 @ 374' CMT W/ 385 SX 8 5/8 @ 3010' CMT W/ 1300 SX 5 1/2 @ 8703' CMT W/ 1100 SX	SURFACE 5/6/86 SURFACE 3217'	9100'	OPEN PERFS 8459'-8526'
MEWBOURNE OIL CO.	FEDERAL L#1	T18S, R32E, SEC 23 660 FSL, 1980 FEL	OIL	13 3/8 @ 459' CMT W/ 400 SX 8 5/8 @ 4345' CMT W/ 1700 SX 5 1/2 @ 9050' CMT W/ 1050 SX	SURFACE(V) 4/22/86 SURFACE(V) 3814'	9050'	OPEN PERFS 8474'-8538'
MEWBOURNE OIL CO.	FED P#2	T18S, R32E, SEC 24 1980 FNL, 330 FWL	OIL	13 3/8 @ 430' CMT W/ 450 SX 8 5/8 @ 4330' CMT W/ 1950 SX 5 1/2 @ 8725' CMT W/ 1425 SX	SURFACE 8/5/89 SURFACE 1618'	8725'	OPEN PERFS 8468'-8524'
HANLEY PETRO.	HANLEY "24" FED #1	T18S, R32E, SEC 24 2310 FSL, 330 FWL	P & A	13 3/8 @ 410' CMT W/ 400 SX 8 5/8 @ 3015' CMT W/ 1125 SX 4 1/2 @ 8700' CMT W/ 1930 SX	SURFACE 12/30/90 SURFACE 1380'	8700'	OPEN PERFS 8492'-8567' P & A
MEWBOURNE OIL CO.	BURLESON FED #1	T18S, R32E, SEC 26 660 FNL, 2310 FEL	WIW	11 3/4 @ 350' CMT W/ 485 SX 8 5/8 @ 2800' CMT W/ 2250 SX 4 1/2 @ 8700' CMT W/ 1205 SX	SURFACE 11/2/85 SURFACE 4130'	8700'	OPEN PERFS 8512'-8572' CONVERT TO INJECTION
MEWBOURNE OIL CO.	SPRINKLE FED #2	T18S, R32E, SEC 26 660 FNL, 1980 FWL	WIW	8 5/8 @ 547' CMT W/ 400 SX 5 1/2 @ 8711' CMT W/ 1950 SX	SURFACE 10/3/85 SURFACE	8711'	OPEN PERFS 8542'-8574' CONVERT TO INJECTION
MEWBOURNE OIL CO.	SPRINKLE FED #1	T18S, R32E, SEC 26 660 FNL, 660 FWL	WIW	13 3/8 @ 536' CMT W/ 500 SX 8 5/8 @ 4814' CMT W/ 2825 SX 4 1/2 @ 10635' CMT W/ 735 SX	SURFACE(V) 5/11/85 SURFACE(V) 7847'	13350'	PERF & TEST 10196'-10350' PB 10175' PERF & TEST 8439'-8532' SQZ 8439'-8478' OPEN PERFS 8507'-8532' CONVET TO INJECTION

MEWBOURNE OIL CO.	SPRINKLE FED #3	T18S, R32E, SEC 26 2310 FNL, 330 FWL	OIL	11 3/4 @ 350' CMT W/ 485 SX 8 5/8 @ 2767' CMT W/ 1700 SX 5 1/2 @ 8710' CMT W/ 700 SX	SURFACE SURFACE 5219'	3/9/86	8710'	OPEN PERFS 8502'-8568'
SANTA FE ENERGY	SPRINKLE FED #4	T18S, R32E, SEC 26 2310 FNL, 1650 FWL	OIL	13 3/8 @ 353' CMT W/ 370 SX 8 5/8 @ 2810' CMT W/ 1050 SX 5 1/2 @ 9700' CMT W/ 900 SX	SURFACE SURFACE 5212'	1/28/87	9700'	OPEN PERFS 8823'-8836' CIBP @ 8805' OPEN PERFS 8541'-8587' BP @ 6920' OPEN PERFS 5626'-5638'
BURLESON & HUFF	ANADARKO "26" #1	T18S, R32E, SEC 26 1980 FSL, 330 FWL	D & A	10 3/4 @ 697' CMT W/ 321 SX	SURFACE(V)	8/14/72	4124'	D & A
MEWBOURNE OIL CO.	FED E#11	T18S, R32E, SEC 27 660 FNL, 530 FEL	WIW	13 3/8 @ 1125' CMT W/ 1120 SX 8 5/8 @ 4480' CMT W/ 2400 SX 5 1/2 @ 8972' CMT W/ 1625 SX	SURFACE SURFACE 868'	11/30/85	8971'	OPEN PERFS 8360'-8486' PERFS BELOW CIBP 8826'-88 CONVERT TO INJECTION
MEWBOURNE OIL CO.	FED E#7	T18S, R32E, SEC 27 330 FNL, 990 FEL	OIL	8 5/8 @ 1208' CMT W/ 560 SX 4 1/2 @ 4300' CMT W/ 950 SX	SURFACE(V) SURFACE(V)	7/10/83	4300'	OPEN PERFS 3900'-4171'
MEWBOURNE OIL CO.	FED E#6	T18S, R32E, SEC 27 330 FNL, 1980 FEL	OIL	8 5/8 @ 1220' CMT W/ 560 SX 4 1/2 @ 4310' CMT W/ 1050 SX	SURFACE(V) SURFACE(V)	6/30/83	4310'	OPEN PERFS 3879'-4154'
MEWBOURNE OIL CO.	FED E#1	T18S, R32E, SEC 27 660 FNL, 1980 FEL	GAS	13 3/8 @ 650' CMT W/ 650 SX 9 5/8 @ 4540' CMT W/ 2975 SX 5 1/2 @ 12898' CMT W/ 550 SX	SURFACE(V) SURFACE(V) 10327'	10/31/76	12898'	OPEN PERFS 12625'-12791' ✓
MEWBOURNE OIL CO.	FED E#5	T18S, R32E, SEC 27 330 FNL, 2310 FEL	OIL	8 5/8 @ 1210' CMT W/ 550 SX 4 1/2 @ 4300' CMT W/ 900 SX	SURFACE(V) 389'	5/9/83	4300'	OPEN PERFS 3872'-4150'
MEWBOURNE OIL CO.	FED E#3	T18S, R32E, SEC 27 2310 FNL, 990 FWL	OIL	8 5/8 @ 1200' CMT W/ 400 SX 4 1/2 @ 4250' CMT W/ 800 SX	SURFACE(V) 773'	7/9/78	4250'	OPEN PERFS 3904'-4178'
MEWBOURNE OIL CO.	FED E#13	T18S, R32E, SEC 27 1980 FNL, 1980 FWL	OIL	13 3/8 @ 460' CMT W/ 485 SX 8 5/8 @ 4248' CMT W/ 1500 SX 5 1/2 @ 9020' CMT W/ 1225 SX	SURFACE(V) SURFACE(V) 2911'	8/12/87	9020'	OPEN PERFS 8504'-8534'
MEWBOURNE OIL CO.	FED E#2	T18S, R32E, SEC 27 2310 FNL, 1980 FWL	OIL	8 5/8 @ 1151' CMT W/ 600 SX 4 1/2 @ 4220' CMT W/ 450 SX	SURFACE(V) 2264'	9/19/77	4220'	OPEN PERFS 3910'-4041'
H & S OIL CO.	ANADARKO 1-Y	T18S, R32E, SEC 27 1980 FNL, 1995 FWL	D & A	8 5/8 @ 500' CMT W/ 400 SX	SURFACE	3/30/72	4200'	D & A
MEWBOURNE OIL CO.	FED E#4	T18S, R32E, SEC 27 1650 FNL, 2310 FEL	D & A	8 5/8 @ 1220' CMT W/ 500 SX	SURFACE(V)	7/17/78	4250'	D & A
MEWBOURNE OIL CO.	FED E#10	T18S, R32E, SEC 27 2310 FNL, 2310 FEL	WIW	13 3/8 @ 456' CMT W/ 475 SX 8 5/8 @ 4542' CMT W/ 2600 SX 5 1/2 @ 9020' CMT W/ 1400 SX	SURFACE SURFACE 2038'	5/14/85	9020'	OPEN PERFS 8501'-8530' CONVERT TO INJECTION
MEWBOURNE OIL CO.	FED E#12	T18S, R32E, SEC 27 1980 FNL, 330 FEL	OIL	13 3/8 @ 440' CMT W/ 450 SX 8 5/8 @ 4310' CMT W/ 1800 SX 5 1/2 @ 9052' CMT W/ 835 SX	SURFACE(V) SURFACE(V) 4888'	3/16/86	9050'	OPEN PERFS 8470'-8532'
BURLESON & HUFF	ANADARKO FEDERAL #5	T18S, R32E, SEC 27 1650 FSL, 2310 FEL	P & A	8 5/8 @ 338' CMT W/ 200 SX 4 1/2 @ 4084' CMT W/ 400 SX	SURFACE(V) 2346'	12/17/74	4084'	OPEN PERFS 3917'-4052' B.P. @ 4011' PERF & TEST 3014'-3686' P & A

MEWBOURNE OIL CO.	FED G#1	T18S, R32E, SEC 27 1980 FSL, 1980 FWL	OIL	13 3/8 @ 441' CMT W/ 550 SX 8 5/8 @ 4505' CMT W/ 1500 SX 5 1/2 @ 13061' CMT W/ 1395 SX	SURFACE SURFACE 6831'	6/23/78	13061'	PERF & PROD 12693'-12814 PB @ 9850' PERF & PROD 9750'-9778' PB @ 9700' PERF & PROD 8862'-8924' PB @ 8800' OPEN PERFS 8506'-8538'
MEWBOURNE OIL CO.	ANADARKO FEDERAL #4	T18S, R32E, SEC 27 990 FSL, 990 FWL	P & A	8 5/8 @ 325' CMT W/ 150 SX 4 1/2 @ 4080' CMT W/ 410 SX	SURFACE(V) 2256'	6/18/74	4080'	OPEN PERFS 4011'-4032' CIBP @ 3980' OPEN PERFS 3885'-3917' P & A
MEWBOURNE OIL CO.	ANADARKO FEDERAL #6 (O.H. ELK AM FED #1)	T18S, R32E, SEC 27 990 FSL, 1650 FWL	P & A	8 5/8 @ 352' CMT W/ 150 SX 4 1/2 @ 4870' CMT W/ 600 SX	SURFACE(V) 2269'	3/5/76	4870'	PERF & TEST 4816'-4826' CIBP @ 4700' PERF & TEST 4030'-4046' CIBP @ 4000' OPEN PERFS 3901'-3932' P & A
MEWBOURNE OIL CO.	ANADARKO FEDERAL #1 (ORIG. Q. P. UNIT #2)	T18S, R32E, SEC 27 660 FSL, 1980 FWL	P & A	13 3/8 @ 753' CMT W/ 750 SX 9 5/8 @ 4548' CMT W/ 1300 SX 5 1/2 @ 13004' CMT W/ 1750 SX	SURFACE SURFACE 7284'	2/7/58	14330'	NUMBEROUS DST PERF & TEST 12723'-12838' PERF & TEST 11922'-11935' CUT 5 1/2 PULL & RESET @ CMT W/ 600 SX OPEN PERFS 8538'-8560' BP @ 6400' OPEN PERFS 6254'-6277' PULL 5 1/2 BP @ 4200' OPEN PERFS 3910'-4035' P & A
BURLESON & HUFF	ANADARKO "A" #1	T18S, R32E, SEC 28 1650 FSL, 300 FEL	D & A	8 5/8 @ 334' CMT W/ 225 SX 4 1/2 @ 4045' CMT W/ 450 SX	SURFACE 2089'	2/11/75	4045'	PERF & TEST 4003'-4017' PERF & TEST 3985'-3997' D & A
BURLESON & HUFF	SUPERIOR FEDERAL #1	T18S, R32E, SEC 33 330 FNL, 330 FEL	D & A	13 3/8 @ 353' 10 3/4 @ 697' CMT W/ 325 SX 8 5/8 @ 1315' MUDDED	SURFACE	11/5/72	4106'	D & A
SOL WEST 111	NELLIE #1	T18S, R32E, SEC 34 660 FNL, 1980 FWL	D & A	8 5/8 @ 493' CMT W/ 325 SX 4 1/2 @ 4250' CMT W/ 300 SX	SURFACE 2946'	6/2/73	4250'	PERF & TEST 4053-4071' PERF & TEST 3921'-3988' PERF & TEST 3126'-3223' D & A

NOTE: TOP OF CEMENT IS CALCULATED WIHTOUT COMPENSATION FOR COLLARS AND USES 75% EXCESS.
CALCULATIONS ASSUME SLURRY YIELDS OF 1.32 CUFT/SX FOR CASING SET SHALLOWER THAN 6000', AND
1.08 CUFT/SX FOR DEEPER CASING.
V= VISUAL
CBL= CEMENT BOND LOG.

ITEM VI OF NEW MEXICO OCD FORM C-108
PLUGGED WELL DETAIL

Cavalcade Oil Corp. (OPERATOR) Cavalcade "21" Federal (LEASE)

5	1650' FSL & 1800' FEL	21	18S	32E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

Tabular Data

Surface Casing
Size 8-5/8" Cemented with 250 sx
TOC Surface feet determined by visual
Hole size _____

Intermediate Casing
Size N/A" Cemented with _____ sx
TOC _____ feet determined by _____
Hole size _____

Long string
Size N/A" Cemented with _____ sx
TOC _____ feet determined by _____
Hole size _____
Total depth 4225'

Injection interval
_____ feet to _____ feet
(perforated or open-hole, indicate which)

Tubing size _____ lined with _____ (material) set in a _____ (brand and model) packer at _____ feet
(or describe any other casing-tubing seal).

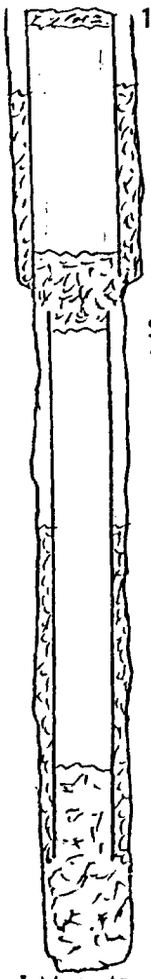
Other Data

1. Name of the injection formation _____
2. Name of field or Pool (if applicable) _____
3. Is this a new well drilled for injection? ☐ Yes ☐ No
   If no, for what purpose was the well originally drilled? _____
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) _____
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. _____

ITEM VI OF NEW MEXICO OCD FORM C-108
PLUGGED WELL DETAIL

Maljamar Oil & Gas	Chessman			
OPERATOR	LEASE			
2-X	C NE NE	22	18S	32E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic



10 sx. @ Surface

Shoe @ 1165'

Stub @ 1237'
100 sx. @ 1072'-1245'

350 sx. across open hole to 3107'

Shoe @ 3940'

Tabular Data

Surface Casing
Size N/A " Cemented with _____ sx
TOC _____ feet determined by _____
Hole size _____

Intermediate Casing
Size 10 " Cemented with 50 sx
TOC 733 feet determined by calculation
Hole size 11"

Long string
Size 7 " Cemented with 150 sx
TOC 2868 feet determined by calculation
Hole size 8-5/8"
Total depth 4840'

Injection interval
_____ feet to _____ feet
(perforated or open-hole, indicate which)

Tubing size _____ lined with _____ (material) set in a _____ (brand and model) packer at _____ feet
(or describe any other casing-tubing seal).

Other Data

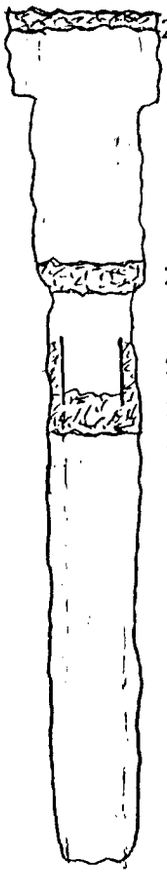
1. Name of the injection formation _____
2. Name of field or Pool (if applicable) _____
3. Is this a new well drilled for injection? ☐ Yes ☐ No
   If no, for what purpose was the well originally drilled? _____
4. Has the well ever been perforated in any other zone(s)? List all such perforated interval and give plugging detail (sacks of cement or bridge plug(s) used) _____
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. _____

ITEM VI OF NEW MEXICO OCD FORM C-108
PLUGGED WELL DETAIL

Oil Associates, Inc. (OPERATOR) Edwards (LEASE)

1 (WELL NO.) 660' FSL & 660' FWL (FOOTAGE LOCATION) 22 (SECTION) 18S (TOWNSHIP) 32E (RANGE)

Schematic



Tabular Data

Surface Casing
Size 13-3/8 " Cemented with ~~0~~ sx.
TOC _____ feet determined by _____
Hole size _____

Intermediate Casing
Size 10-3/4 " Cemented with ~~0~~ sx.
TOC _____ feet determined by _____
Hole size _____

Long string
Size 8-5/8 " Cemented with 50 sx.
TOC 2176 feet determined by calculation
Hole size _____
Total depth 6200'

Injection interval
_____ feet to _____ feet
(perforated or open-hole, indicate which)

Tubing size _____ lined with _____ (material) set in a
_____ (brand and model) packer at _____ feet
(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation _____
2. Name of field or Pool (if applicable) _____
3. Is this a new well drilled for injection? /7/ Yes /7/ No
   If no, for what purpose was the well originally drilled? _____
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) _____
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. _____

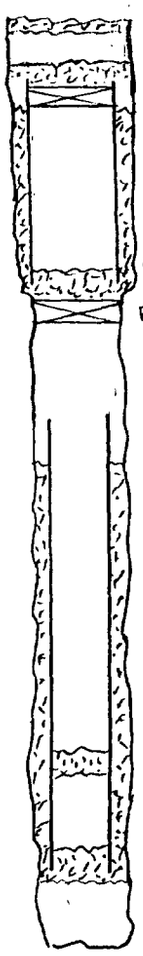
ITEM VI OF NEW MEXICO OCD FORM C-108
PLUGGED WELL DETAIL

Maljamar Oil & Gas Jewett-McDonald

OPERATOR LEASE

2	1980' FNL & 660' FWL	23	18S	32E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic



Tabular Data

Surface Casing
Size N/A " Cemented with _____ sx.
TOC _____ feet determined by _____
Hole size _____

Intermediate Casing
Size 8-5/8 " Cemented with 50 sx
TOC 994 feet determined by calculation
Hole size _____

Long string
Size 7 " Cemented with 150 sx
TOC 2800 feet determined by calculation
Hole size _____
Total depth 4809'

Injection interval
_____ feet to _____ feet
(perforated or open-hole, indicate which)

Tubing size _____ lined with _____ (material) set in a _____ (brand and model) packer at _____ feet
(or describe any other casing-tubing seal).

Other Data

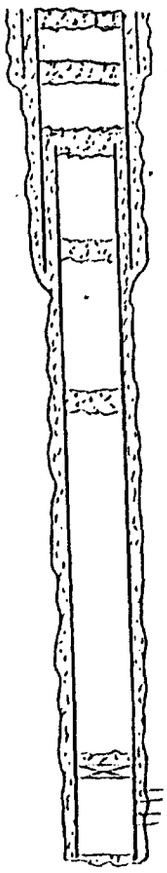
1. Name of the injection formation _____
2. Name of field or Pool (if applicable) _____
3. Is this a new well drilled for injection? ☐ Yes ☐ No
   If no, for what purpose was the well originally drilled? _____
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) _____
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. _____

ITEM VI OF NEW MEXICO OCD FORM C-108
PLUGGED WELL DETAIL

HANLEY PETRO. INC. (Operation) HANLEY 24 FEDERAL (Lease)

1 (Well No.) 2310 FSL, 330 FWL (Footage Location) 24 (Section) 18S (Township) 32E (Range)

Schematic



20 sxs @ 55'

410'

35 sxs @ 460'

CMT 1981'-1825'

25 sxs @ 3000'

3015'

25 sxs @ 4900'

CIBP @ 8375' with 20 sxs cement

Perfs 8492'-8567'

8700'

Tubular Data

Surface Casing

Size 13 3/8 " Cemented with 400 sx.

TOC Surface feet determined by Calcn.

Hole size 17 1/2"

Intermediate Casing

Size 8 5/8 " Cemented with 1125 sx.

TOC Surface feet determined by Calcn.

Hole size 11"

Long string

Size 4 1/2 " Cemented with 1930 sx.

TOC 1380' feet determined by Calcn.

Hole size 7 7/8"

Total depth 8700'

Injection interval

_____ feet to _____ feet

(perforated or open-hole, indicate which)

NOTE: Cut and pulled 1932' of 4 1/2"

Tubing size _____ lined with _____ (material) set in a

_____ (brand and model) packer at _____ feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation _____

2. Name of Field or Pool (if applicable) _____

3. Is this a new well drilled for injection? ☐ Yes ☐ No

If no, for what purpose was the well originally drilled? _____

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) _____

5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. _____

ITEM VI OF NEW MEXICO OCD FORM C-108
PLUGGED WELL DETAIL

Burleson & Huff — Anadarko "26"
OPERATOR — LEASE

1	1980' FSL & 330' FWL	26	18S	32E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic

Tabular Data

Surface Casing
Size 10-3/4" Cemented with 321 sx.
TOC Surface feet determined by visual
Hole size _____

Intermediate Casing
Size N/A" Cemented with _____ sx.
TOC _____ feet determined by _____
Hole size _____

Long string
Size N/A" Cemented with _____ sx.
TOC _____ feet determined by _____
Hole size _____
Total depth 4124'

Injection interval
_____ feet to _____ feet
(perforated or open-hole, indicate which)

Tubing size _____ lined with _____ (material) set in a _____ (brand and model) packer at _____ feet
(or describe any other casing-tubing seal).

Other Data

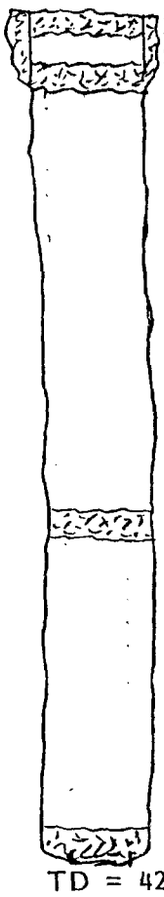
1. Name of the injection formation _____
2. Name of field or Pool (if applicable) _____
3. Is this a new well drilled for injection? ☐ Yes ☐ No
   If no, for what purpose was the well originally drilled? _____
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) _____
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. _____

ITEM VI OF NEW MEXICO OCD FORM C-108
PLUGGED WELL DETAIL

H & S Oil Co. (OPERATOR) Anadarko (LEASE)

1-Y (WELL NO.) 1980' FNL & 1995' FWL (FOOTAGE LOCATION) 27 (SECTION) 18S (TOWNSHIP) 32E (RANGE)

Schematic



Tabular Data

Surface Casing

Size 8-5/8" Cemented with 400 sx.

TOC Surface feet determined by calculation

Hole size _____

Intermediate Casing

Size N/A" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size N/A" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Total depth 4200'

Injection interval

_____ feet to _____ feet

(perforated or open-hole, indicate which)

Tubing size _____ lined with _____ (material) set in a

_____ (brand and model) packer at _____ feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation _____

2. Name of Field or Pool (if applicable) _____

3. Is this a new well drilled for injection? ☐ Yes ☐ No

If no, for what purpose was the well originally drilled? _____

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) _____

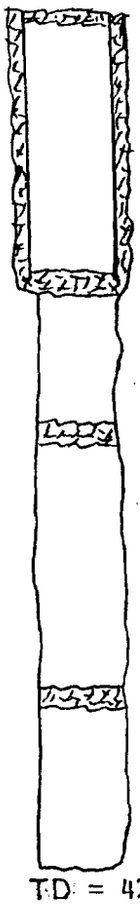
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. _____

ITEM VI OF NEW MEXICO OCD FORM C-108
PLUGGED WELL DETAIL

Mewbourne Oil Co. (OPERATOR) Federal E (LEASE)

4 (WELL NO.) 1650' FNL & 2310' FEL (FOOTAGE LOCATION) 27 (SECTION) 18S (TOWNSHIP) 32E (RANGE)

Schematic



Tabular Data

Surface Casing

Size N/A " Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Intermediate Casing

Size 8-5/8 " Cemented with 500 sx

TOC Surface feet determined by visual

Hole size _____

Long string

Size _____ " Cemented with _____ sx

TOC _____ feet determined by _____

Hole size _____

Total depth 4250'

Injection interval

_____ feet to _____ feet

(perforated or open-hole, indicate which)

Tubing size _____ lined with _____ (material) set in a

_____ (brand and model) packer at _____ feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation _____
2. Name of Field or Pool (if applicable) _____
3. Is this a new well drilled for injection? ☐ Yes ☐ No

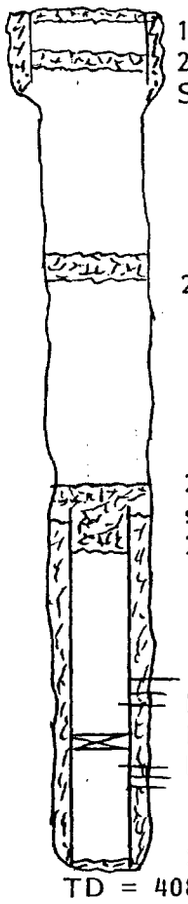
   If no, for what purpose was the well originally drilled? _____
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) _____
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. _____

ITEM VI OF NEW MEXICO OCD FORM C-108
PLUGGED WELL DETAIL

Burleson & Huff (OPERATOR) Anadarko Federal (LEASE)

5 (WELL NO.) 1650' FSL & 2310' FEL (FOOTAGE LOCATION) 27 (SECTION) 18S (TOWNSHIP) 32E (RANGE)

Schematic



Tabular Data

Surface Casing
Size 8-5/8" Cemented with 200 sx.
TOC Surface feet determined by visual
Hole size

Intermediate Casing
Size N/A" Cemented with sx.
TOC feet determined by
Hole size

Long string
Size 4-1/2" Cemented with 400 sx.
TOC 2346 feet determined by calculation
Hole size
Total depth 4084'

Injection interval
feet to feet
(perforated or open-hole, indicate which)

Tubing size lined with (material) set in a
(brand and model) packer at feet
(or describe any other casing-tubing seal).

Other Data

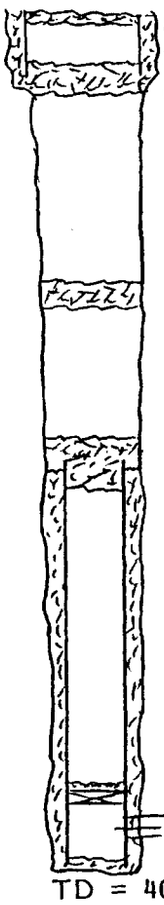
1. Name of the injection formation
2. Name of Field or Pool (if applicable)
3. Is this a new well drilled for injection? ☐ Yes ☐ No
   If no, for what purpose was the well originally drilled?
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used)
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

ITEM VI OF NEW MEXICO OCD FORM C-108
PLUGGED WELL DETAIL

Mewbourne Oil Co. (OPERATOR) Anadarko Federal (LEASE)

4	990' fSL & 990' FWL	27	18S	32E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic



Tabular Data

Surface Casing

Size 8-5/8" Cemented with 150 sx.

TOC Surface feet determined by circulating

Hole size 10-3/4"

Intermediate Casing

Size _____" Cemented with _____ sx

TOC _____ feet determined by _____

Hole size _____

Long string

Size 4-1/2" Cemented with 400 sx

TOC 2256 feet determined by calculation

Hole size 7-3/4"

Total depth 4080'

Injection interval

_____ feet to _____ feet

(perforated or open-hole, indicate which)

Tubing size _____ lined with _____ (material) set in a _____ (brand and model) packer at _____ feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation _____

2. Name of field or Pool (if applicable) _____

3. Is this a new well drilled for injection? ☐ Yes ☐ No

   If no, for what purpose was the well originally drilled? _____

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) _____

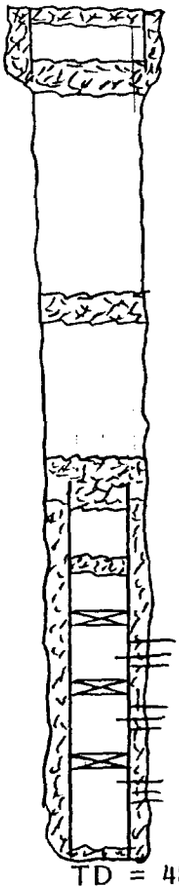
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. _____

ITEM VI OF NEW MEXICO OCD FORM C-108
PLUGGED WELL DETAIL

Mewbourne Oil Co. (OPERATOR) Anadarko Federal (LEASE)

6 (WELL NO.) 990' FSL & 1650' FWL (FOOTAGE LOCATION) 27 (SECTION) 18S (TOWNSHIP) 32E (RANGE)

Schematic



25 sx. @ 64'
Shoe @ 352'
75 sx. @ 420'-305'

30 sx. @ 1305'-1220'

Csg. stub @ 2344'
25 sx. @ 2400'-2275'
25 sx. @ 3025'

CIBP @ 3850' w/10 sx.
Perfs. @ 3901'-3932'
CIBP @ 4000' w/3 sx.
Perfs. @ 4030'-4046'
CIBP @ 4700' w/4 sx.
Perfs. @ 4816'-4826'.

Shoe @ 4870'
TD = 4870'

Tabular Data

Surface Casing

Size 8-5/8" Cemented with 150 sx.
TOC Surface feet determined by circulating
Hole size 13-3/8"

Intermediate Casing

Size _____" Cemented with _____ sx
TOC _____ feet determined by _____
Hole size _____

Long string

Size 4-1/2" Cemented with 600 sx
TOC 2269 feet determined by calculation
Hole size 6-3/4"
Total depth 4870'

Injection interval

_____ feet to _____ feet
(perforated or open-hole, indicate which)

Tubing size _____ lined with _____ (material) set in a _____ (brand and model) packer at _____ feet

(or describe any other casing-tubing seal).

Other Data

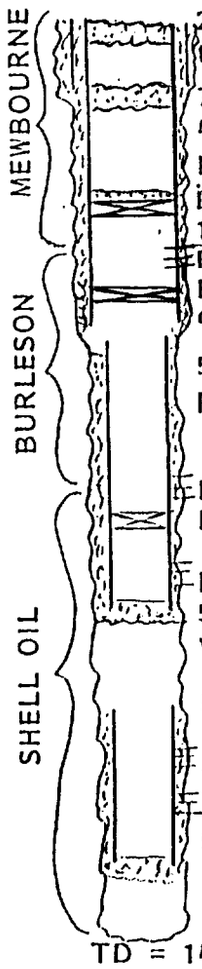
1. Name of the injection formation _____
2. Name of Field or Pool (if applicable) _____
3. Is this a new well drilled for injection? ☐ Yes ☐ No
   If no, for what purpose was the well originally drilled? _____
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) _____
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. _____

ITEM VI OF NEW MEXICO OCD FORM C-108
PLUGGED WELL DETAIL

MEWBOURNE OIL CO. (OPERATOR) ANADARKO FEDERAL (LEASE)

1 (WELL NO.) 660 FSL, 1980 FWL (FOOTAGE LOCATION) 27 (SECTION) 18S (TOWNSHIP) 32E (RANGE)

Schematic



TOC calcn. @ 5947'

Tabular Data

Surface Casing
Size 13 3/8" Cemented with 750 sx.
TOC Surface feet determined by Calcn.
Hole size 16"

Intermediate Casing
Size 9 5/8" Cemented with 1300 sx.
TOC Surface feet determined by Calcn.
Hole size 10 3/4"

Long string (See Schematic)
Size _____" Cemented with _____ sx.
TOC _____ feet determined by _____
Hole size _____
Total depth _____

Injection interval
_____ feet to _____ feet
(perforated or open-hole, indicate which)

Tubing size _____ lined with _____ (material) set in a _____ (brand and model) packer at _____ feet

(or describe any other casing-tubing seal).

Other Data

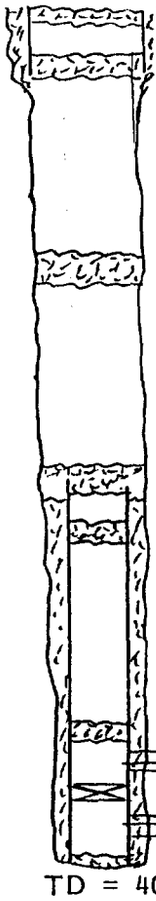
1. Name of the injection formation _____
2. Name of Field or Pool (if applicable) _____
3. Is this a new well drilled for injection? ☐ Yes ☐ No
   If no, for what purpose was the well originally drilled? _____
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) _____
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. _____

ITEM VI OF NEW MEXICO OCD FORM C-108
PLUGGED WELL DETAIL

Burleson & Huff (OPERATOR) Anadarko "A" (LEASE)

1 (WELL NO.) 1650' FSL & 300' FEL (FOOTAGE LOCATION) 28 (SECTION) 18S (TOWNSHIP) 32E (RANGE)

Schematic



Tabular Data

Surface Casing

Size 8-5/8" Cemented with 225 sx

TOC Surface feet determined by calculation

Hole size _____

Intermediate Casing

Size N/A" Cemented with _____ s

TOC _____ feet determined by _____

Hole size _____

Long string

Size 4-1/2" Cemented with 450 s

TOC 2089 feet determined by calculation

Hole size _____

Total depth 4045'

Injection interval

_____ feet to _____ feet

(perforated or open-hole, indicate which)

Tubing size _____ lined with _____ (material) set in a

_____ (brand and model) packer at _____ feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation _____

2. Name of field or Pool (if applicable) _____

3. Is this a new well drilled for injection? ☐ Yes ☐ No

If no, for what purpose was the well originally drilled? _____

4. Has the well ever been perforated in any other zone(s)? List all such perforated interval and give plugging detail (sacks of cement or bridge plug(s) used) _____

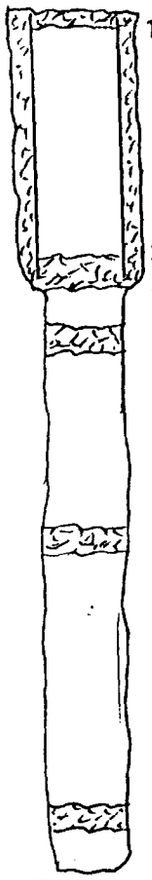
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. _____

ITEM VI OF NEW MEXICO OCD FORM C-108
PLUGGED WELL DETAIL

Burleson & Huff (OPERATOR) Superior Federal (LEASE)

1 (WELL NO.) 330' FNL & 330' FEL (FOOTAGE LOCATION) 33 (SECTION) 18S (TOWNSHIP) 32E (RANGE)

Schematic



Tabular Data

Surface Casing
Size N/A " Cemented with _____ sx.
TOC _____ feet determined by _____
Hole size _____

Intermediate Casing
Size 10-3/4 " Cemented with 325 sx
TOC Surface feet determined by calculation
Hole size 12-1/4"

Long string
Size _____ " Cemented with _____ sx
TOC _____ feet determined by _____
Hole size _____
Total depth 4106'

Injection interval
_____ feet to _____ feet
(perforated or open-hole, indicate which)

Tubing size _____ lined with _____ (material) set in a _____ (brand and model) packer at _____ feet
(or describe any other casing-tubing seal).

Other Data

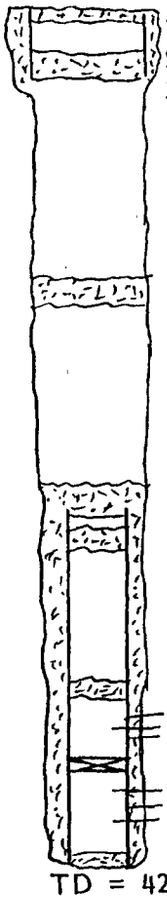
1. Name of the injection formation _____
2. Name of Field or Pool (if applicable) _____
3. Is this a new well drilled for injection? ☐ Yes ☐ No
   If no, for what purpose was the well originally drilled? _____
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) _____
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. _____

ITEM VI OF NEW MEXICO OCD FORM C-108
PLUGGED WELL DETAIL

Burleson & Huff
Sol West III — OPERATOR
Nellie — LEASE

1	660' FNL & 1980' FWL	34	18S	32E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE

Schematic



Tabular Data

Surface Casing
Size 8-5/8" Cemented with 325 sx.
TOC Surface feet determined by calculation
Hole size _____

Intermediate Casing
Size N/A" Cemented with _____ sx.
TOC _____ feet determined by _____
Hole size _____

Long string
Size 4-1/2" Cemented with 300 sx.
TOC 2946' feet determined by calculation
Hole size _____
Total depth 4250'

Injection interval
_____ feet to _____ feet
(perforated or open-hole, indicate which)

Tubing size _____ lined with _____ (material) set in a _____ (brand and model) packer at _____ feet
(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation _____
2. Name of Field or Pool (if applicable) _____
3. Is this a new well drilled for injection? ☐ Yes ☐ No
   If no, for what purpose was the well originally drilled? _____
4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) _____
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area. _____

ITEM VII OF NEW MEXICO OCD FORM C-108
DATA ON PROPOSED OPERATIONS
QUERECHO PLAINS QUEEN ASSOCIATED SAND UNIT
1-19-94/KMM

ITEM VII (1) Proposed average initial injection rate is 4000 bwpd for the field.
Proposed maximum injection rate for any one injector should not exceed 800 bwpd.

ITEM VII (2) The injection system will be operated as a closed system.

ITEM VII (3) Based on a .80 psi/ft frac gradient, a depth to shallowest Penrose perf of 4096', and a .44 psi/ft injection fluid the proposed maximum surface injection pressure is 1400 psi.

ITEM VII (4) The source of injection water for the subject unit will be the Querecho Plains Bone Spring Sand Unit. The source of water for the Bone Spring Unit is fresh water supplied by the city of Carlsbad, Delaware produced water, and Bone Spring produced water. A copy of these water analyze is attached.

ITEM VII (5) Not applicable.

ITEM VIII OF NEW MEXICO OCD FORM C-108
GEOLOGIC DATA ON THE INJECTION ZONE & UNDERGROUND DRINKING WATER
QUERECHO PLAINS QUEEN ASSOCIATED SAND UNIT
1-19-94/KMM

The zone being targeted for water injection at Querecho Plains are the Queen/Penrose sands at depths from 3886'-4222' in the well Federal E NO. 7, Section 27, T18S, R32E. The Queen/Penrose sands are a sequence of well consolidated sandstone, siltstone, and shale strata of Permian Guadalupe age cemented with calcareous material. An eleven percent porosity cut off is used to determine net pay as porosity less than eleven percent is considered impermeable at the existing and proposed reservoir pressure and reservoir fluid regimes. Net pay isopach maps show the areal extent of the targeted sands. Impermeable shale deposits exist above and below the targeted sands thus defining the permeable limits of the reservoir. The Queen reservoir has a water-oil contact defining its Southeast edge. All injected fluids should remain in the reservoir with the exception of cycling to the surface though wellbores.

Based on communications with the New Mexico State Engineer's Roswell office (Ken Fresquez) and OCD files at Hobbs there appears to be eleven fresh water wells within T18S & R32E. Three of these wells are within the area of review. The deepest of these wells has a total depth of 700'. The source strata tapped by this well is the Triassic "Red Beds" and the only other strata Mr. Fresquez referred to as potentially fresh was the Alluvium which is shallower than the "Red Beds". There are no known fresh water strata underlying the Queen/Penrose.

ITEMS IX THROUGH XII
QUERECHO PLAINS QUEEN ASSOCIATED SAND UNIT
1-19-94/KMM

ITEM IX. All of the current wellbores proposed for unitization have an existing fracture stimulation. Any new wells drilled subsequent to unitization will also be treated with a fracture stimulation, and it is assumed that all of the wellbores will be treated with acid at least once during the life of the waterflood.

ITEM X. All logging and test data for the existing wellbores already exists on file with the state of New Mexico Oil Conservation Division (OCD) and will not be resubmitted with this application.

ITEM XI. As stated in ITEM VIII, it appears the only strata within one mile of our proposed unit which contains water of possible drinking quality is confined to 700' and shallower. No contamination of this drinking water should occur as all existing wellbores which penetrate the Queen/Penrose in the proposed area are completed or plugged in a manner to prevent communication from our flood to these water strata.

ITEM XII. After reviewing the geology of the Queen/Penrose strata in a one and one-half mile radius around the proposed unit area, no evidence appears of fractures or any hydrologic connection between the target sands and any overlying or underlying strata.

CAPROCK LABORATORIES, INC.
3312 BANKHEAD HIGHWAY
MIDLAND, TEXAS 79701
(915) 689 - 7252

May 21, 1992

Mewburne Oil Company
P. O. Box 7698
Tyler, Texas 75711

Attention: Kevin Mays

Subject: Water Compatibility Study

Gentlemen:

Presented in this report are the final results of a water compatibility study performed on 5 samples of produced water provided to this laboratory by Core Laboratory on behalf of Mewburne Oil Company. API Water Analysis was performed on each of the samples to determine their ionic characteristics. Based on these analyses, the scaling tendency with respect to cacium carbonate and calcium sufate were calculated and reported on May 19, 1992 (our Job Number 9205032). The samples were physically mixed to determine if precipitates would form. Turbidity was measured as percent transmittance on each of the combinations at 420 nanometers wavelength on a Milton Roy Model 601 Spectrophotometer.

The turbidity data are presented in this report and indicated ~~that~~ that the water from the Federal "E" #5 tank battery (Queen Formation) and the water from the Cedardrake Federal #4 well formed precipitates whe combined in the ratios tested (very slight decreaces in transmittance were observed). Additional analyses were performed on the waters to determine their barium concentrations and are also presented in this report. Based on calculations from theoretical combinations, all of the waters have a tendency to form both calcium carbonate and calcium sulfate scale on their own and these tendencies do not increase when mixed. The fresh water from Double Eagle and the Delaware produced water from the Cedardrake Federal #4 well both have barium and therefore presents the possibility of barium sulfate scale formation when combined with waters high in sulfate.

In conclusion, based on all of the analyses and physical combinations of these waters, the Delaware produced water from the Jewitt Feed #1 appears to be the most compatible water to the Bone Springs water from the Federal "L" lease.

Respectfully yours,

James L. Pritchard, Lab Manager
Caprock Laboratories, Inc.

LABORATORIES, INC.
3312 Bankhead Hwy.
Midland, Texas 79701
(915) 689-7252
FAX # (915) 689-0130

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : MEWBOURNE OIL CO.
Lease : FEDERAL E
Well No.: #5 T.B.
Job No.: 9205032

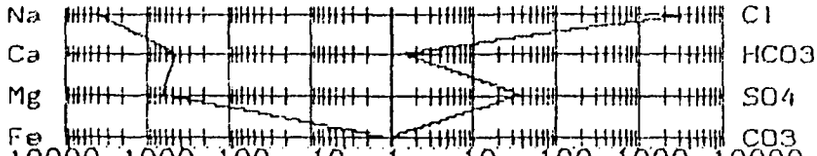
Sample Loc. : QUEEN PENCOSE PROD. WATER
Date Sampled :
Attention :
Analysis No. : 1

ANALYSIS

		MG/L	EQ. WT.	*MEQ/L
1.	pH	6.100		
2.	Specific Gravity 60/60 F.	1.171		
3.	$CaCO_3$ Saturation Index @ 80 F.	+1.948		
	@ 140 F.	+2.648		
	Dissolved Gasses			
4.	Hydrogen Sulfide	0.0		
5.	Carbon Dioxide	Not Determined		
6.	Dissolved Oxygen	Not Determined		
	Cations			
7.	Calcium (Ca^{++})	8,978	/ 20.1 =	446.67
8.	Magnesium (Mg^{++})	8,266	/ 12.2 =	677.54
9.	Sodium (Na^{+}) (Calculated)	94,120	/ 23.0 =	4,092.17
10.	Barium (Ba^{++})	0.0		
	Anions			
11.	Hydroxyl (OH^{-})	0	/ 17.0 =	0.00
12.	Carbonate (CO_3^{--})	0	/ 30.0 =	0.00
13.	Bicarbonate (HCO_3^{-})	85	/ 61.1 =	1.39
14.	Sulfate (SO_4^{--})	1,950	/ 48.8 =	39.96
15.	Chloride (Cl^{-})	183,647	/ 35.5 =	5,173.15
16.	Total Dissolved Solids	297,046		
17.	Total Iron (Fe)	22	/ 18.2 =	1.21
18.	Total Hardness As $CaCO_3$	56,450		
19.	Resistivity @ 75 F. (Calculated)	0.001 /cm.	= .1 Ω/m	

LOGARITHMIC WATER PATTERN

*meq/L.



*Milli Equivalents per Liter

Calculated Calcium Sulfate solubility in this brine is 1,232 mg/L. at 90 F.

PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *meq/L =	mg/L.
$Ca(HCO_3)_2$	81.04	1.39	113
$CaSO_4$	68.07	39.96	2,720
$CaCl_2$	55.50	405.32	22,495
$Mg(HCO_3)_2$	73.17	0.00	0
$MgSO_4$	60.19	0.00	0
$MgCl_2$	47.62	677.54	32,265
$NaHCO_3$	84.00	0.00	0
$NaSO_4$	71.03	0.00	0
NaCl	58.46	4,090.30	239,119

Analyst

Remarks and Comments:

CAPROCK LABORATORIES, INC.
3312 Bankhead Hwy.
Midland, Texas 79701
(915) 689-7252
FAX # (915) 689-0130

WATER ANALYSIS REPORT

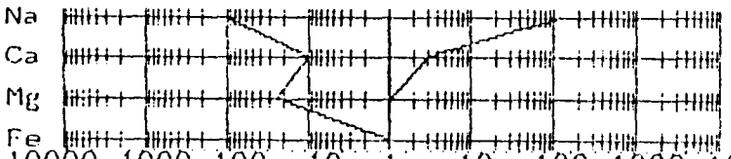
SAMPLE

Oil Co. :
Lease : DOUBLE EAGLE
Well No.: FRESH WATER
Job No.: 9205032

Sample Loc. :
Date Sampled :
Attention :
Analysis No. : 3

ANALYSIS			MG/L	EQ. WT.	*MEQ/L
1.	pH		9.100		
2.	Specific Gravity 60/60 F.		0.996		
3.	$CaCO_3$ Saturation Index	@ 80 F.	+1.548		
		@ 140 F.	+2.388		
	Dissolved Gasses				
4.	Hydrogen Sulfide		0.0		
5.	Carbon Dioxide		Not Determined		
6.	Dissolved Oxygen		Not Determined		
	Cations				
7.	Calcium	(Ca^{++})	200	/ 20.1 =	9.95
8.	Magnesium	(Mg^{++})	304	/ 12.2 =	24.92
9.	Sodium	(Na^{+}) (Calculated)	2,507	/ 23.0 =	109.00
10.	Barium	(Ba^{++})	6	/ 68.7 =	0.09
	Anions				
11.	Hydroxyl	(OH^{-})	0	/ 17.0 =	0.00
12.	Carbonate	(CO_3^{--})	0	/ 30.0 =	0.00
13.	Bicarbonate	(HCO_3^{-})	183	/ 61.1 =	3.00
14.	Sulfate	(SO_4^{--})	50	/ 48.8 =	1.02
15.	Chloride	(Cl^{-})	4,963	/ 35.5 =	139.80
16.	Total Dissolved Solids		8,213		
17.	Total Iron (Fe)		1	/ 18.2 =	0.05
18.	Total Hardness As $CaCO_3$		1,752		
19.	Resistivity @ 75 F. (Calculated)		0.685 /cm.		

LOGARITHMIC WATER PATTERN
*meq/L.



*Milli Equivalents per Liter

Calculated Calcium Sulfate solubility in this brine is 2,814 mg/L. at 90 F.

PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *meq/L =	mg/L.
$Ca(HCO_3)_2$	81.04	3.00	243
$CaSO_4$	68.07	0.94	64
$CaCl_2$	55.50	6.02	334
$Mg(HCO_3)_2$	73.17	0.00	0
$MgSO_4$	60.19	0.00	0
$MgCL_2$	47.62	24.92	1,187
$NaHCO_3$	84.00	0.00	0
$NaSO_4$	71.03	0.00	0
NaCl	58.46	108.87	6,364

Analyst

Remarks and Comments:

CAPROCK LABORATORIES, INC.
3312 Bankhead Hwy.
Midland, Texas 79701
(915) 689-7252
FAX # (915) 689-0130

WATER ANALYSIS REPORT

SAMPLE

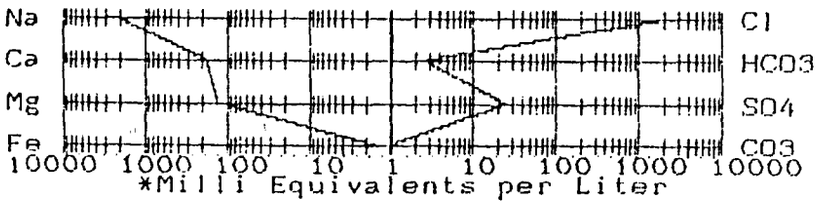
Oil Co. : MEWBOURNE OIL CO.
Lease : FEDERAL L LEASE
Well No.:
Job No.: 9205032

Sample Loc. : BONE SPRINGS PROD. WATER
Date Sampled :
Attention :
Analysis No. : 5

ANALYSIS

			MG/L	EQ. WT.	*MEQ/L
1.	pH		7.550		
2.	Specific Gravity 60/60 F.		1.110		
3.	$CaCO_3$ Saturation Index	@ 80 F.	+0.842		
		@ 140 F.	+1.722		
	Dissolved Gasses				
4.	Hydrogen Sulfide		0.0		
5.	Carbon Dioxide		Not Determined		
6.	Dissolved Oxygen		Not Determined		
	Cations				
7.	Calcium (Ca^{++})		3,527	/ 20.1 =	175.47
8.	Magnesium (Mg^{++})		1,556	/ 12.2 =	127.54
9.	Sodium (Na^{+})	(Calculated)	52,547	/ 23.0 =	2,284.65
10.	Barium (Ba^{++})		Not Determined		
	Anions				
11.	Hydroxyl (OH^{-})		0	/ 17.0 =	0.00
12.	Carbonate (CO_3^{--})		0	/ 30.0 =	0.00
13.	Bicarbonate (HCO_3^{-})		159	/ 61.1 =	2.60
14.	Sulfate (SO_4^{--})		1,300	/ 48.8 =	26.64
15.	Chloride (Cl^{-})		90,760	/ 35.5 =	2,556.62
16.	Total Dissolved Solids		149,849		
17.	Total Iron (Fe)		28	/ 18.2 =	1.51
18.	Total Hardness As $CaCO_3$		15,214		
19.	Resistivity @ 75 F. (Calculated)		0.037 /cm.		

LOGARITHMIC WATER PATTERN
*meq/L.



*Milli Equivalents per Liter

Calculated Calcium Sulfate solubility in this brine is 4,032 mg/L. at 90 F.

PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *meq/L =	mg/L.
$Ca(HCO_3)_2$	81.04	2.60	211
$CaSO_4$	68.07	26.64	1,813
$CaCl_2$	55.50	146.23	8,116
$Mg(HCO_3)_2$	73.17	0.00	0
$MgSO_4$	60.19	0.00	0
$MgCL_2$	47.62	127.54	6,074
$NaHCO_3$	84.00	0.00	0
$NaSO_4$	71.03	0.00	0
NaCl	58.46	2,282.85	133,455

K Rea
Analyst

Remarks and Comments:

CAPROCK LABORATORIES, INC.
3312 Bankhead Hwy.
Midland, Texas 79701
(915) 689-7252
FAX # (915) 689-0130

WATER ANALYSIS REPORT

SAMPLE

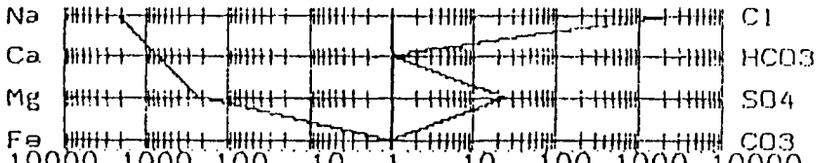
Oil Co. : MEWBOURNE OIL CO.
Lease : CEDARDRAKE FEDERAL
Well No.: #4
Job No.: 9205032

Sample Loc. : DELAWARE PROD. WATER
Date Sampled :
Attention :
Analysis No. : 4

ANALYSIS

		MG/L	EQ. WT.	*MEQ/L
1.	pH	6.900		
2.	Specific Gravity 60/60 F.	1.148		
3.	$CaCO_3$ Saturation Index @ 80 F.	+0.668		
	@ 140 F.	+1.778		
	Dissolved Gasses			
4.	Hydrogen Sulfide	0.0		
5.	Carbon Dioxide	Not Determined		
6.	Dissolved Oxygen	Not Determined		
	Cations			
7.	Calcium (Ca^{++})	14,749	/ 20.1 =	733.78
8.	Magnesium (Mg^{++})	2,674	/ 12.2 =	219.18
9.	Sodium (Na^{+}) (Calculated)	49,932	/ 23.0 =	2,170.96
10.	Barium (Ba^{++})	22	/ 68.7 =	0.32
	Anions			
11.	Hydroxyl (OH^{-})	0	/ 17.0 =	0.00
12.	Carbonate (CO_3^{--})	0	/ 30.0 =	0.00
13.	Bicarbonate (HCO_3^{-})	49	/ 61.1 =	0.80
14.	Sulfate (SO_4^{--})	1,300	/ 48.8 =	26.64
15.	Chloride (Cl^{-})	109,904	/ 35.5 =	3,095.89
16.	Total Dissolved Solids	178,630		
17.	Total Iron (Fe)	18	/ 18.2 =	0.99
18.	Total Hardness As $CaCO_3$	47,843		
19.	Resistivity @ 75 F. (Calculated)	0.014 /cm.		

LOGARITHMIC WATER PATTERN
*meq/L.



*Milli Equivalents per Liter

Calculated Calcium Sulfate solubility in this brine is 1,111 mg/L. at 90 F.

PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *meq/L =	mg/L.
$Ca(HCO_3)_2$	81.04	0.80	65
$CaSO_4$	68.07	26.32	1,792
$CaCl_2$	55.50	706.66	39,220
$Mg(HCO_3)_2$	73.17	0.00	0
$MgSO_4$	60.19	0.00	0
$MgCL_2$	47.62	219.18	10,437
$NaHCO_3$	84.00	0.00	0
$NaSO_4$	71.03	0.00	0
NaCl	58.46	2,170.05	126,861

Analyst

Remarks and Comments:

CAPROCK LABORATORIES, INC.
3312 Bankhead Hwy.
Midland, Texas 79701
(915) 689-7252
FAX # (915) 689-0130

WATER ANALYSIS REPORT

SAMPLE

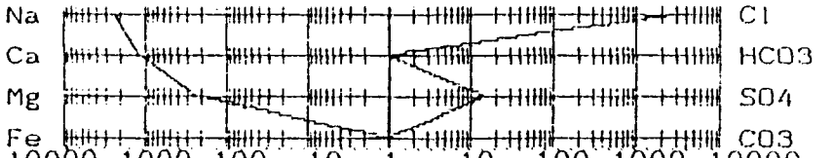
Oil Co. : MANZANO OIL
Lease : JEWITT FEED
Well No.: #1
Job No.: 9205032

Sample Loc. : DELAWARE PROD.
Date Sampled :
Attention :
Analysis No. : 2

ANALYSIS

		MG/L	EQ. WT.	*MEQ/L
1.	pH	6.550		
2.	Specific Gravity 60/60 F.	1.165		
3.	$CaCO_3$ Saturation Index @ 80 F.	+1.052		
	@ 140 F.	+2.812		
	Dissolved Gasses			
4.	Hydrogen Sulfide	0.0		
5.	Carbon Dioxide	Not Determined		
6.	Dissolved Oxygen	Not Determined		
	Cations			
7.	Calcium (Ca^{++})	24,529	/ 20.1 =	1,220.35
8.	Magnesium (Mg^{++})	2,772	/ 12.2 =	227.21
9.	Sodium (Na^{+}) (Calculated)	52,982	/ 23.0 =	2,303.57
10.	Barium (Ba^{++})	0.0		
	Anions			
11.	Hydroxyl (OH^{-})	0	/ 17.0 =	0.00
12.	Carbonate (CO_3^{--})	0	/ 30.0 =	0.00
13.	Bicarbonate (HCO_3^{-})	61	/ 61.1 =	1.00
14.	Sulfate (SO_4^{--})	750	/ 48.8 =	15.37
15.	Chloride (Cl^{-})	132,594	/ 35.5 =	3,735.04
16.	Total Dissolved Solids	213,688		
17.	Total Iron (Fe)	15	/ 18.2 =	0.84
18.	Total Hardness As $CaCO_3$	72,665		
19.	Resistivity @ 75 F. (Calculated)	0.001 /cm.		

LOGARITHMIC WATER PATTERN
*meq/L.



*Milli Equivalents per Liter

Calculated Calcium Sulfate solubility in this brine is 590 mg/L. at 90 F.

PROBABLE MINERAL COMPOSITION

COMPOUND	EQ. WT.	X *meq/L =	mg/L.
$Ca(HCO_3)_2$	81.04	1.00	81
$CaSO_4$	68.07	15.37	1,046
$CaCl_2$	55.50	1,203.98	66,821
$Mg(HCO_3)_2$	73.17	0.00	0
$MgSO_4$	60.19	0.00	0
$MgCL_2$	47.62	227.21	10,820
$NaHCO_3$	84.00	0.00	0
$NaSO_4$	71.03	0.00	0
NaCl	58.46	2,303.85	134,683

Analyst

Remarks and Comments: