

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☒ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☒ OIL CONSERVATION DIVISION

II. Operator: Breck Operating Corp.

Address: P.O. Box 911, Breckenridge, Texas 76024

Contact party: Kevin G. Duncan Phone: (817) 559-3355

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 R-3770

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 G. Duncan Title Petroleum Engineer

Signature: Kevin G. Duncan Date: 8/10/88

* 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 district office.

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.

Breck Operating Corp.

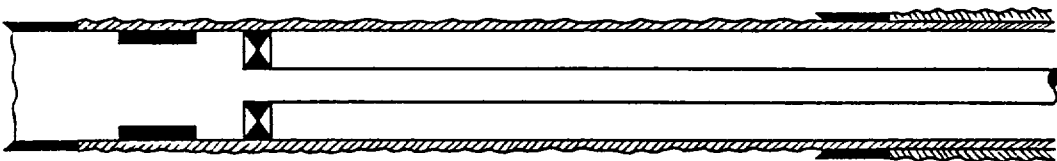
Milnesand Unit

LLAS5F

24 Unit Letter J, 1980' FSL & 1980' FEL 19

WELL NO. FOOTAGE LOCATION

SECTION

8S
TOWNSHIP35E
RANGESchematicTabular DataSurface Casing

Size 8-5/8" " Cemented with 350 sx.
 TOC Surface feet determined by circulated.
 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 1375 sx.
 TOC Surface feet determined by circulated
 Hole size 7-7/8"
 Total depth 4785'

Injection Interval

4653 feet to 4725 feet
 (perforated or ~~perforated~~ indicate which)

Tubing size 2-3/8" lined with plastic set in a
 (material)
Baker Loc-Set packer nt 4600 feet
 (brand and model)
 (or describe any other casing-tubing seal).

Other Data

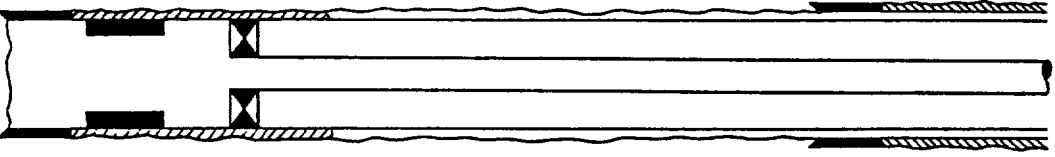
1. Name of the injection formation San Andres
2. Name of field or Pool (if applicable) Milnesand (San Andres)
3. Is this a new well drilled for injection? ☐ Yes ☒ No
 If no, for what purpose was the well originally drilled? Oil

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. No overlying Underlying -5500' SL (Penn)

Breck Operating Corp. Milnesand Unit
 OPERATOR LEASE

311 Unit Letter B, 660' FNL and 1980' FEL 19 85 35E
 WELL NO. FOOTAGE LOCATION SECTION TOWNSHIP RANGE

SchematicTabular DataSurface Casing

Size 8-5/8 " Cemented with 225 sx.
 TOC Surface feet determined by circulated.
 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 200 sx.
 TOC 3943' feet determined by calculation
 Hole size 7-7/8"
 Total depth 4720'

Injection interval

4566 feet to 4646 feet
 (perforated or ~~xxxxxxx~~ indicate which)

INJECTION WELL DATA SHEET -- SIDE 2

tubing size 2-3/8" lined with plastic set in a
 (material)
Baker Loc-Set packer at 4500' feet
 (brand and model)
 (or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres

2. Name of field or Pool (if applicable) Milnesand (San Andres)

3. Is this a new well drilled for injection? ☐ Yes ☒ No
 If no, for what purpose was the well originally drilled? Oil

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. Overlying - None Underlying -5500 SL (Penn)

INJECTION WELL DATA SHEET

SIDE 1

Breck Operating Corp.
OPERATOR

Milnesand Unit
LEASE

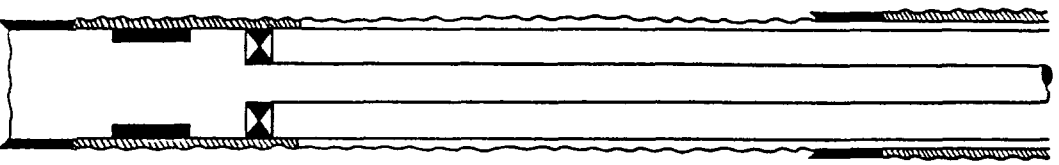
514 Unit Letter J, 1980' FSL and 1980' FEL
WELL NO. FOOTAGE LOCATION

SECTION 24

TOWNSHIP 8S

RANGE 34E

Schematic



Tabular Data

Surface Casing

Size 8-5/8" " Cemented with 225 sx.
 TOC Surface feet determined by circulated
 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 200 sx.
 TOC 4081 feet determined by calculation
 Hole size 7-7/8"
 Total depth 4772'

Injection interval

4658 feet to 4736 feet
 (perforated or ~~XXXXXX~~, indicate which)

INJECTION WELL DATA SHEET -- SIDE 2

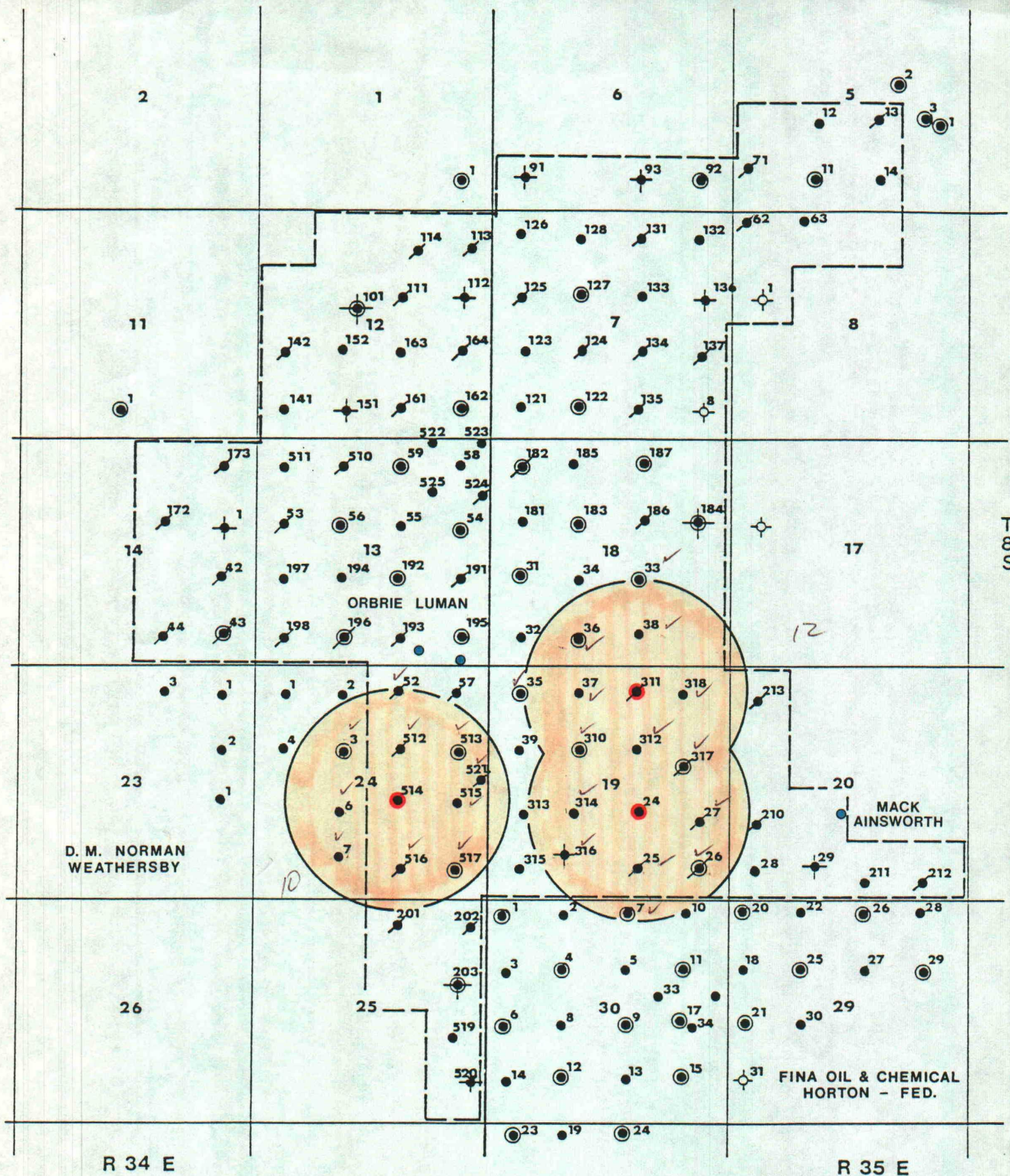
Tubing size 2-3/8" lined with Plastic (material) sel in a
Baker Loc-Set packer at 4600 feet
 (brand and model)
 (or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation San Andres
2. Name of field or Pool (if applicable) Milnesand (San Andres)
3. Is this a new well drilled for injection? ☐ Yes ☒ No
 If no, for what purpose was the well originally drilled? Oil

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. Overlying - None Underlying -5500 SL (Penn)



- - WELL TO BE CONVERTED
- - AREA OF REVIEW
- - FRESHWATER WELL

BRECK OPERATING CORP.
MILNESAND (SAN ANDRES) UNIT
ROOSEVELT COUNTY, NEW MEXICO
 Scale 1"=3000'

OK

TABULATION OF DATA ON WELLS
WITHIN AREA OF REVIEW

Breck Operating Corp.

Milnesand Unit, Well #25

Location: Sec. 19-8S-35E; 660' FSL & 1980' FEL
Casing: 8-5/8" @ 368' w/ 300 sx. cement circ.
4-1/2" @ 4780' w/ 1760 sx. cement circ. ✓
Perforations: 4667'-4733' (San Andres)
TD: 4780'

Milnesand Unit, Well #26

Location: Sec. 19-8S-35E; 660' FSL & 660' FEL
Casing: 8-5/8" @ 367' w/ 300 sx. cement circ.
4-1/2" @ 4800' w/ 1760 sx. cement circ. ✓
Perforations: 4658'-4738' (San Andres)
TD: 4800'

Milnesand Unit, Well #27

Location: Sec. 19-8S-35E; 1720' FSL & 660' FEL
Casing: 8-5/8" @ 357' w/ 350 sx. cement circ.
4-1/2" @ 4775' w/ 1645 sx. cement circ. ✓
Perforations: 4677'-4740' (San Andres)
TD: 4775'

Milnesand Unit, Well #33

Location: Sec. 18-8S-35E; 1980' FSL & 1980' FEL
Casing: 10-3/4" @ 430' w/ 400 sx. cement circ.
7-5/8" @ 4920' w/ 1950 sx. cement circ. ✓
5-1/2" Liner @ 4759'-9273' w/ 500 sx. ✓
Perforations: 4536'-4636' (San Andres)
TD: 9273'
PBDT: 4745' (CIBP w/ 2 sx. cement)

Milnesand Unit, Well #35

Location: Sec. 19-8S-35E; 660' FNL & 660' FWL
Casing: 10-3/4" @ 435' w/ 425 sx. cement circ. ✓
7-5/8" @ 4780' w/ 1700 sx. TOC @ 500' ✓
5-1/2" Liner @ 4710'-9325' w/ 175 sx. ✓
Perforations: 4549'-4635' (San Andres)
TD: 9325'
PBDT: 4695' (CIBP W/ 2 sx. cement)

Tabulation of Data on Wells Within Area of Review - Cont'd.

Breck Operating Corp.

Milnesand Unit, Well #36

Location: Sec. 18-8S-35E; 660' FSL & 1980' FWL
Casing: 8-5/8" @ 432' w/ 450 sx. cement circ.
4-1/2" @ 4751' w/ 300 sx. TOC @ 4000'
Perforations: 4550'-4600' (San Andres)
TD: 4751'

Milnesand Unit, Well #37

Location: Sec. 19-8S-35E; 660' FNL & 1980' FWL
Casing: 8-5/8" @ 450' w/ 450 sx. cement circ.
4-1/2" @ 4699' w/ 200 sx. TOC @ 4200'
Perforations: 4558'-4628' (San Andres)
TD: 4700'
PBSD: 4670'

Milnesand Unit, Well #38

Location: Sec. 18-8S-35E; 660' FSL & 1980' FEL
Casing: 8-5/8" @ 440' w/ 450 sx. cement circ.
4-1/2" @ 4700' w/ 200 sx. TOC @ 4200'
Perforations: 4550'-4616' (San Andres)
TD: 4700'

Milnesand Unit, Well #52

Location: Sec. 24-8S-34E; 660' FNL & 1980' FEL
Casing: 13-3/8" @ 375' w/ 375 sx. cement circ.
8-5/8" @ 4185' w/ 1695 sx. cement circ.
5-1/2" @ 9370' w/ 200 sx. TOC @ 8348'
Cut 5-1/2" @ 4703' & reset @ 4703' w/
225 sx. cement, TOC @ 3382'
Perforations: 4565'-4624' (San Andres)
TD: 9375'
PBSD: 4703'

Milnesand Unit, Well #310

Location: Sec. 19-8S-35E; 1980' FNL & 1908' FWL
Casing: 8-5/8" @ 363' w/ 225 sx. cement circ.
4-1/2" @ 4725' w/ 200 sx. TOC @ 4225'
Perforations: 4618'-4680' (San Andres)
TD: 4725'

Breck Operating Corp.

Milnesand Unit, Well #312

Location: Sec. 19-8S-35E; 1980' FNL & 1980' FEL
Casing: 8-5/8" @ 365' w/ 225 sx. cement circ.
4-1/2" @ 4735' w/ 200 sx. TOC @ 4235'
Perforations: 4618'-4689' (San Andres)
TD: 4735'

Milnesand Unit, Well #314

Location: Sec. 19-8S-35E; 1980' FSL & 1909' FWL
Casing: 8-5/8" @ 366' w/ 225 sx. cement circ.
4-1/2" @ 4755' w/ 200 sx. TOC @ 4255'
Perforations: 4650'-4724' (San Andres)
TD: 4755'

Milnesand Unit, Well #316

Location: Sec. 19-8S-35E; 990' FSL & 1654' FWL
Casing: 8-5/8" @ 360' w/ 225 sx. cement circ.
4-1/2" @ 4730' w/ 200 sx. TOC @ 4230'
Perforations: 4646'-4714' (San Andres)
TD: 4730'
Well P&A'd 9/25/83 - See Attachments

Milnesand Unit, Well #317

Location: Sec. 19-8S-35E; 2310' FNL & 990' FEL
Casing: 8-5/8" @ 356' w/ 225 sx. cement circ.
4-1/2" @ 4717' w/ 200 sx. TOC @ 4217'
Perforations: 4633'-4712' (San Andres)
TD: 4717'

Milnesand Unit, Well #318

Location: Sec. 19-8S-35E; 660' FNL & 990' FEL
Casing: 8-5/8" @ 362' w/ 225 sx. cement circ.
4-1/2" @ 4700' w/ 200 sx. TOC @ 4200'
Perforations: 4580'-4667' (San Andres)
TD: 4700'

Milnesand Unit, Well #512

Location: Sec. 24-8S-34E; 1980' FNL & 1980' FEL
Casing: 8-5/8" @ 365' w/ 200 sx. cement circ.
4-1/2" @ 4699' w/ 200 sx. TOC @ 4200'
Perforations: 4610'-4679' (San Andres)
TD: 4700'

Tabulation of Data on Wells Within Area of Review - Cont'd.

Breck Operating Corp.

Milnesand Unit, Well #513

Location: Sec. 24-8S-34E; 1980' FNL & 660' FEL
Casing: 8-5/8" @ 357' w/ 200 sx. cement circ.
4-1/2" @ 4730' w/ 250 sx. TOC @ 4230'
Perforations: 4622'-4682' (San Andres)
TD: 4730'

Milnesand Unit, Well #515

Location: Sec. 24-8S-34E; 1980' FSL & 660' FEL
Casing: 8-5/8" @ 359' w/ 225 sx. cement circ.
4-1/2" @ 4800' w/ 225 sx. TOC @ 4250'
Perforations: 4662'-4741' (San Andres)
TD: 4800'

Milnesand Unit, Well #516

Location: Sec. 24-8S-34E; 660' FSL & 1980' FEL
Casing: 8-5/8" @ 360' w/ 350 sx. cement circ.
4-1/2" @ 4795' w/ 200 sx. TOC @ 4295'
Perforations: 4665'-4743' (San Andres)
TD: 4795'

Milnesand Unit, Well #517

Location: Sec. 24-8S-34E; 660' FSL & 660' FEL
Casing: 8-5/8" @ 370' w/ 225 sx. cement circ.
4-1/2" @ 4790' w/ 200 sx. TOC @ 4290'
Perforations: 4624'-4676' (San Andres)
TD: 4791'

Milnesand Unit, Well #521

Location: Sec. 24-8S-34E; 2630' FNL & 100' FEL
Casing: 8-5/8" @ 368' w/ 300 sx. cement circ.
5-1/2" @ 4803' w/ 1500 sx. cement circ. ✓
Perforations: 4635'-4742' (San Andres)
TD: 4803'
PBDT: 4763'

D.M. Norman

F.W. Weathersby, Well #3

Location: Sec. 24-8S-34E; 1980' FNL & 1980' FWL
Casing: 8-5/8" @ 450' w/ 260 sx. cement circ.
5-1/2" @ 4760' w/ 250 sx. TOC @ 3485'
Perforations: 4605'-4672' (San Andres)
TD: 4760'

Tabulation of Data on Wells Within Area of Review - Cont'd.

D.M. Norman

F.W. Weathersby, Well #6

Location: Sec. 24-8S-34E; 1980' FSL & 1980' FWL
Casing: 8-5/8" @ 442' w/ 260 sx. cement circ.
5-1/2" @ 4780' w/ 250 sx. TOC @ 3505'
Perforations: 4637'-4702' (San Andres)
TD: 4780'

F.W. Weathersby, Well #7

Location: Sec. 24-8S-34E; 990' FSL & 330' FEL
* No structural or completion information was available
on this well.

Fina Oil & Chemical Company

Horton-Federal, Well #7

Location: Sec. 30-8S-35E; 330' FNL & 2241' FEL
Casing: 8-5/8" @ 412' w/ 225 sx. cement circ.
4-1/2" @ 4686' w/ 200 sx. TOC @ 4186'
Perforations: 4674'-4688' (San Andres)
TD: 4696'

→ 8 5/8 @ 2150 - circ.

7 7/8 hole w/ 4 1/2 w/ 200

TOC . 3975 (70%)

OPERATOR'S COPY
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN TRIPPLICATE
(Other instructions on
reverse side)

Form approved.
Budget Bureau No. 42-R1424.

SUNDRY NOTICES AND REPORTS ON WELLS

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

1. <input checked="" type="checkbox"/> OIL WELL <input type="checkbox"/> GAS WELL <input type="checkbox"/> OTHER 2. NAME OF OPERATOR UNION TEXAS PETROLEUM CORPO. 3. ADDRESS OF OPERATOR 1400 Wilco Bldg., Midland, TX 79701 4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. See also space 17 below.) At surface Unit Letter "N", 990' FSL & 1654.5' FWL 14. PERMIT NO. 4231' GR, 4239.5' KB 15. ELEVATIONS (Show whether DF, RT, GR, etc.)		5. LEASE DESIGNATION AND SERIAL NO. LC 060978 6. IF INDIAN, ALLOTTEE OR TRIBE NAME 7. UNIT AGREEMENT NAME Milnesand (SA) Unit 8. FARM OR LEASE NAME 9. WELL NO. 316 10. FIELD AND POOL, OR WILDCAT Milnesand 11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec.18, T8S, R35E 12. COUNTY OR PARISH Roosevelt 13. STATE NM
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16. Check Appropriate Box To Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

TEST WATER SHUT-OFF <input type="checkbox"/> FRACTURE TREAT <input type="checkbox"/> SHOOT OR ACIDIZE <input type="checkbox"/> REPAIR WELL <input type="checkbox"/> (Other) <input type="checkbox"/>	PULL OR ALTER CASING <input type="checkbox"/> MULTIPLE COMPLETE <input type="checkbox"/> ABANDON* <input type="checkbox"/> CHANGE PLANE <input type="checkbox"/>
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SUBSEQUENT REPORT OF:

WATER SHUT-OFF <input type="checkbox"/> FRACTURE TREATMENT <input type="checkbox"/> SHOOTING OR ACIDIZING <input type="checkbox"/> (Other) <input type="checkbox"/>	REPAIRING WELL <input type="checkbox"/> ALTERING CASING <input type="checkbox"/> ABANDONMENT* <input checked="" type="checkbox"/>
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(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

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

Sept. 23, 1983 - MIRUSU - Removed wellhead, installed BOP - Set CIBP @ 4595' & dumped 35' cement on top. RIH w/2 3/8" tbgs. & displace hole w/10# mud laden gel.

Sept. 24, 1983 - Perf. 4 1/2" csg. @ 2235' w/4 holes, Set cement retainer at 2135' - squeezed w/30 sx. Class "C", PO of retainer and dumped 10 sx. cement on top. Perf. 4 1/2" csg. @ 420' Set cement retainer @ 320' - tested csg. to 500 psi - csg. held. Stung into retainer, established circ. and cemented to surf. w/100 sx. Class "C".

Sept. 25, 1983 - Removed BOP, set 50' cement plug at surf. Cut off 4 1/2" csg. Welded steel plate across csg. - set dry hole marker and cleaned up location - WELL NOW P&A.

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

SIGNED [Signature]

TITLE Prod. Services Supr

DATE 9-30-83

(This space for Federal or State office use)

APPROVED BY _____
CONDITIONS OF APPROVAL, IF ANY:

TITLE _____

APPROVED PETER W. CHESTER DATE <u>9-30-83</u> <u>[Signature]</u> MAY 3 1985	
BUREAU OF LAND MANAGEMENT ROSWELL RESOURCE AREA	

*See Instructions on Reverse Side

BRECK OPERATING CORP.

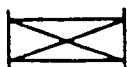
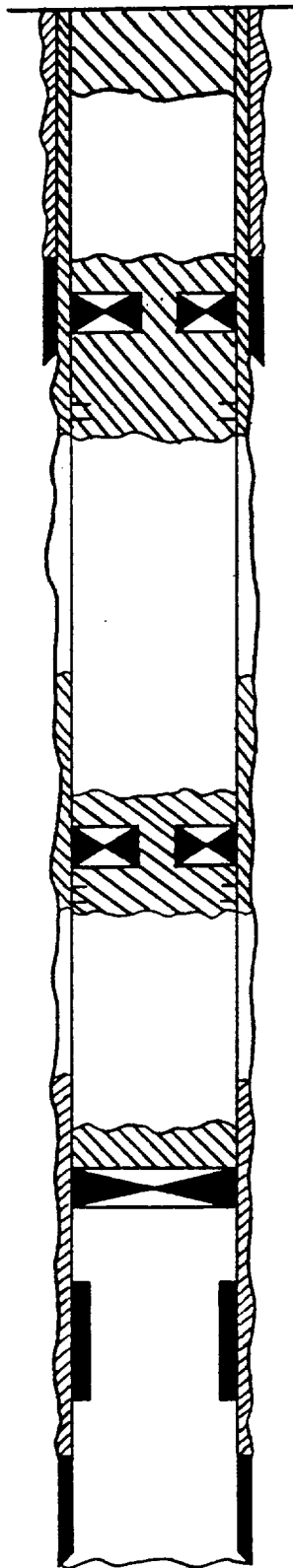
P.O. BOX 911

BRECKENRIDGE, TEXAS 76024-0911

DATE 8-1-88 WELL NO. 316 LEASE HILLESAND UNIT FIELD HILLESAND (SA)

PLUGGING PROCEDURE

- CIBP SET @ 4595' W/ 35' CMT ON TOP.
DISPLACED HOLE W/ 10# MUD LADEN GEL.
- PERF @ 2235' W/ 4 HOLES. SET CMT RET @ 2135' & SQUEEZED W/ 30 SK CMT. DUMPED 10 SK CMT ON TOP.
- PERF @ 420' W/ 4 SHOTS. SET CMT RET @ 320' & SQUEEZED W/ 100 SK CMT TO SURFACE.
- PUMP 50' CMT PLUG @ SURFACE.
- CUT OF CSG & WELD ON PLATE.
- SET DRY HOLE MARKER.



BRIDGE PLUG



PACKER



CENTRALIZER



SCRATCHER



BASKET



PERFORATION

DATA ON THE PROPOSED OPERATION

Proposed Injection Volume: Average - 200 Bbl/Day
Maximum - 400 Bbl/Day

Proposed Injection Pressure: Average - 1400 psi.
Maximum - 1500 psi.

Injection system is closed.

Sources of injection fluid are produced saltwater and freshwater.
The appropriate chemical analysis are included.

Injection is into a zone productive of oil and/or gas.

No stimulation program is proposed on the wells to be converted.

WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY: BRECK OPERATING
LEASE: WEST MILNESAND UNIT
SAMPLE POINT: LUMAN WATER WELL
SAMPLE DATE: 1/30/87
SAMPLE TEMP.:

pH: 7.1
H2S: 0
SPECIFIC GRAVITY: 1

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
HCO3	244.00	4.00
Cl	161.00	4.54
SO4	25.00	0.52
Ca	120.00	6.00
Mg	24.30	1.99
Na	24.48	1.06

IONIC STRENGTH = 0.01
TOTAL HARDNESS = 400.0 mg/ltr.
TOTAL DISSOLVED SOLIDS = 598.8 mg/ltr.

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS PER LITER
Ca(HCO3)2	4.00	324.16
CaSO4	0.52	35.45
CaCl2	1.48	82.09
Mg(HCO3)2	0.00	0.00
MgSO4	0.00	0.00
MgCl2	1.99	94.85
NaHCO3	0.00	0.00
Na2SO4	0.00	0.00
NaCl	1.06	62.22

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO3 @ 80 DEG F. = 0.1
CaCO3 @ 120 DEG F. = 0.4

SATURATION POINT

CaSO4 @ 70 DEG F. = 2236.9 MG/LTR.
CaSO4 @ 110 DEG F. = 2293.6 MG/LTR.

(THIS SAMPLE CONTAINED 35.5 MG/LTR. CaSO4)

WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY: BRECK OPERATING
LEASE: WEST MILNESAND UNIT
SAMPLE POINT: *ripped from human 4 WMU 191*
SAMPLE DATE: 02-02-87
SAMPLE TEMP.:

pH: 5.7

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
HCO3	213.50	3.50
Cl	109046.00	3071.72
SO4	1131.25	23.57
Ca	4230.00	211.50
Mg	1346.25	134.94
Na	63315.00	2752.83

IONIC STRENGTH = 3.29
TOTAL HARDNESS = 17349.7 mg/ltr.
TOTAL DISSOLVED SOLIDS = 179451.9 mg/ltr.

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS PER LITER
Ca(HCO3)2	3.50	283.64
CaSO4	23.57	1604.25
CaCl2	184.43	10235.99
Mg(HCO3)2	0.00	0.00
MgSO4	0.00	0.00
MgCl2	134.94	6425.77
NaHCO3	0.00	0.00
Na2SO4	0.00	0.00
NaCl	2752.35	160902.20

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO3 @ 80 DEG F. = -0.6
CaCO3 @ 120 DEG F. = -0.1

SATURATION POINT

CaSO4 @ 70 DEG F. = 3468.5 MG/LTR.
CaSO4 @ 110 DEG F. = 3454.0 MG/LTR.

(THIS SAMPLE CONTAINED 1604.3 MG/LTR. CaSO4)

WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY: BRECK OPERATING
LEASE: WEST MILNESAND UNIT
SAMPLE POINT: WELL 191
SAMPLE DATE: 11/13/86
SAMPLE TEMP.: NA

pH: 5.6
H₂S: 100
SPECIFIC GRAVITY: 1.165

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
HCO ₃	244.00	4.00
Cl	145341.00	4094.11
SO ₄	1500.00	31.25
Ca	5600.00	280.00
Mg	2187.00	179.26
Na	84412.31	3670.10

IONIC STRENGTH = 4.38
TOTAL HARDNESS = 23000.0 mg/ltr.
TOTAL DISSOLVED SOLIDS = 239125.5 mg/ltr.
TOTAL IRON (Fe) = 10.0 ppm

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS PER LITER
Ca (HCO ₃) ₂	4.00	324.16
CaSO ₄	31.25	2127.19
CaCl ₂	244.75	13583.67
Mg (HCO ₃) ₂	0.00	0.00
MgSO ₄	0.00	0.00
MgCl ₂	179.26	8536.47
NaHCO ₃	0.00	0.00
Na ₂ SO ₄	0.00	0.00
NaCl	3670.10	214554.10

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO₃ @ 80 DEG F. = -0.2
CaCO₃ @ 120 DEG F. = 0.3

SATURATION POINT

CaSO₄ @ 70 DEG F. = 2583.4 MG/LTR.
CaSO₄ @ 110 DEG F. = 2614.6 MG/LTR.

(THIS SAMPLE CONTAINED 2127.2 MG/LTR. CaSO₄)

GEOLOGICAL DATA ON THE INJECTION ZONE

Lithologic Detail: Dolomite w/ anhydrite inclusions

Geological Name: San Andres

Average Thickness: 80'

Average Depth: 4625'

Underground source of drinking water overlying the injection zone in the proposed area is the Ogallala at an average depth of 75'.

WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY: BRECK OPERATING CORP.
LEASE: WEST MILNESAND UNIT
SAMPLE POINT: LUMAN WATER WELL #1
SAMPLE DATE: 8-9-88
SAMPLE TEMP.:

pH: 7.0
H₂S: 0
SPECIFIC GRAVITY: 1.002

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
HCO ₃	244.00	4.00
Cl	4922.00	138.65
SO ₄	875.00	18.23
Ca	920.00	46.00
Mg	607.50	49.80
Na	1496.89	65.08

IONIC STRENGTH = 0.22
TOTAL HARDNESS = 4800.0 mg/ltr.
TOTAL DISSOLVED SOLIDS = 9060.2 mg/ltr.

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS PER LITER
Ca(HCO ₃) ₂	4.00	324.16
CaSO ₄	18.23	1240.86
CaCl ₂	23.77	1319.28
Mg(HCO ₃) ₂	0.00	0.00
MgSO ₄	0.00	0.00
MgCl ₂	49.80	2371.24
NaHCO ₃	0.00	0.00
Na ₂ SO ₄	0.00	0.00
NaCl	65.08	3804.69

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO₃ @ 80 DEG F. = 0.3
CaCO₃ @ 120 DEG F. = 0.8

SATURATION POINT

CaSO₄ @ 70 DEG F. = 2773.0 MG/LTR.
CaSO₄ @ 110 DEG F. = 2812.6 MG/LTR.

(THIS SAMPLE CONTAINED 1240.9 MG/LTR. CaSO₄)

WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY: BRECK OPERATING CORP.
LEASE: WEST MILNESAND UNIT
SAMPLE POINT: LUMAN WATER WELL #4
SAMPLE DATE: 8-9-88
SAMPLE TEMP.:

pH: 7.4
H₂S: 0
SPECIFIC GRAVITY: 1

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
HCO ₃	122.00	2.00
Cl	856.00	24.11
SO ₄	375.00	7.81
Ca	400.00	20.00
Mg	121.50	9.96
Na	91.22	3.97

IONIC STRENGTH = 0.05
TOTAL HARDNESS = 1500.0 mg/ltr.
TOTAL DISSOLVED SOLIDS = 1965.4 mg/ltr.

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS PER LITER
Ca(HCO ₃) ₂	2.00	162.08
CaSO ₄	7.81	531.80
CaCl ₂	10.19	565.41
Mg(HCO ₃) ₂	0.00	0.00
MgSO ₄	0.00	0.00
MgCl ₂	9.96	474.25
NaHCO ₃	0.00	0.00
Na ₂ SO ₄	0.00	0.00
NaCl	3.97	231.86

CALCULATED SCALING TENDENCIES

SCALING INDEX

CaCO₃ @ 80 DEG F. = 0.5
CaCO₃ @ 120 DEG F. = 0.9

SATURATION POINT

CaSO₄ @ 70 DEG F. = 2036.4 MG/LTR.
CaSO₄ @ 110 DEG F. = 2092.5 MG/LTR.

(THIS SAMPLE CONTAINED 531.8 MG/LTR. CaSO₄)

WATER ANALYSIS REPORT
furnished by TRETOLITE CHEMICALS

COMPANY: BRECK OPERATING CORP.
LEASE: WEST MILNESAND UNIT
SAMPLE POINT: AINSWORTH WATER WELL
SAMPLE DATE: 8-9-88
SAMPLE TEMP.:

pH: 7.5
H₂S: 0
SPECIFIC GRAVITY: 1

TITRATED AND CALCULATED IONS

	MILLIGRAMS PER LITER	MILLIEQUIVALENTS PER LITER
HCO ₃	122.00	2.00
Cl	642.00	18.08
SO ₄	250.00	5.21
Ca	240.00	12.00
Mg	97.20	7.97
Na	122.49	5.33

IONIC STRENGTH = 0.04
TOTAL HARDNESS = 1000.0 mg/ltr.
TOTAL DISSOLVED SOLIDS = 1473.3 mg/ltr.

PROBABLE MINERAL COMPOSITION AND ION PAIRING

	MILLIEQUIVALENTS PER LITER	MILLIGRAMS PER LITER
Ca(HCO ₃) ₂	2.00	162.08
CaSO ₄	5.21	354.53
CaCl ₂	4.79	265.94
Mg(HCO ₃) ₂	0.00	0.00
MgSO ₄	0.00	0.00
MgCl ₂	7.97	379.40
NaHCO ₃	0.00	0.00
Na ₂ SO ₄	0.00	0.00
NaCl	5.33	311.34

CALCULATED SCALING TENDENCIES

SCALING INDEX


CaCO₃ @ 80 DEG F. = 0.5
CaCO₃ @ 120 DEG F. = 0.8

SATURATION POINT

CaSO₄ @ 70 DEG F. = 2195.9 MG/LTR.
CaSO₄ @ 110 DEG F. = 2252.5 MG/LTR.

(THIS SAMPLE CONTAINED 354.5 MG/LTR. CaSO₄)

Breck Operating Corp. has examined available geological 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.


Kevin G. Duncan
Petroleum Engineer

STATE OF TEXAS

COUNTY OF STEPHENS

BEFORE ME, the undersigned authority, on this day personally appeared Kevin G. Duncan, who being by me duly
(Name)
sworn, deposes and says copies of the attached application were sent by certified mail to the names and addresses as listed, on the following date, to wit: August 12, 1988.

Kevin G. Duncan
(Signature)

SUBSCRIBED and Sworn to before me this the 12th day of August, 1988, to certify which witness my hand and seal of office.

Skye D. Byars
Notary Public, State of Texas

SKYE D. BYARS, Notary Public
State of Texas
My Commission Expires 4/28/90

MILNESAND UNIT
WELLS #24, #311, & #514
ROOSEVELT COUNTY, NEW MEXICO

SURFACE OWNERS

Vernon Rogers & Nena Hargrove
c/o Ruth Rogers
826 W. 19th St.
Portales, New Mexico 88130

Irene Terrell
5912 Gladeside Court
Dallas, Texas 75248

OFFSET OPERATORS

Fina Oil & Chemical Company
1004 N. Rig Spring St.
Suite 400
Midland, Texas 79701

D.M. Norman
606 W. Tennessee
Midland, Texas 79701

LEGAL NOTICE
NOTICE OF APPLICATION
FOR FLUID INJECTION
WELL PERMIT

Breck Operating Corp., P.O. Box
911, Breckenridge, Texas 76024
has applied to the New Mexico Oil
Conservation Commission for a
permit to inject fluid into a formation
which is productive of oil or gas.

The applicant proposes to inject
fluid into the San Andres formation,
Milnesand Unit, Well Nos. 24, Sec.
19, T-8S, R-35E, #311, Sec. 19,
T-8S, R-35E, and #514, Sec. 24,
T-8S, R-34E. These wells all will be
expansion of an existing waterflood
and will inject a maximum of 400
barrels of water per day at an
approximate injection pressure of
1500#.

Interested parties must file objec-
tions or requests for hearing with the
Oil Conservation Division, P.O. Box
2088, Santa Fe, New Mexico 87501
withing 15 days.

Contact party for the applicant is
Kevin G. Duncan, Petroleum Engi-
neer, 817/559-3355.

Published in the Portales News-
Tribune July 26, 1988. Legal #0400.

Affidavit of Publication

0

I, Marshall Stinnett
Business Manager of

THE PORTALES NEWS-TRIBUNE

a newspaper of general paid circulation and entered under
second class postal privilege in Roosevelt County, published
daily, (except Saturday) at Portales, New Mexico, for the fifty-
two (52) consecutive weeks preceding this date, do solemnly
swear that a copy of the above notice, as per clipping attached,
was published weekly in the regular and entire issue of said

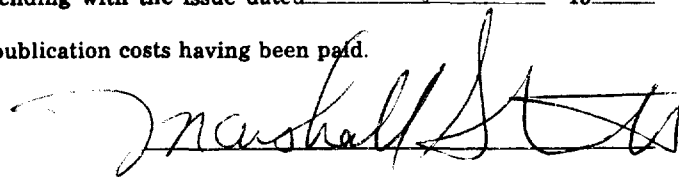
newspaper, and not in any supplement thereof for 1

consecutive weeks commencing with the issue dated _____

July 26 19 88

and ending with the issue dated July 26 19 88

All publication costs having been paid.



Subscribed and sworn to before me this 26th day of July 19 88

Re Maria Barnett
Notary Public

My commission expires 3/7/91 19 91



STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT
OIL CONSERVATION DIVISION
HOBBS DISTRICT OFFICE

GARREY CARRUTHERS
GOVERNOR

8-15-88

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 _____
WFX ☒ _____
PMX _____

Gentlemen:

I have examined the application for the:

<i>Brack Open 224</i>	<i>midland ut # 24-J</i>	<i>19-8-35</i>
	<i>" # 311-B</i>	<i>19-8-35</i>
	<i>" # 514-J</i>	<i>24-8-34</i>
Operator	Lease & Well No.	Unit S-T-R

and my recommendations are as follows:

Not all P&A wells included in our
data

Yours very truly,

[Signature]
Jerry Sexton
Supervisor, District 1

/ed