STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

For the 1st Five wells
Lea County, New Mexico

FORM C-108
Revised 4-1-98

APPLICATION FOR AUTHORIZATION TO INJECT — Dagger Draw Water Flood

I. PURPOSE: ___X___ Secondary Recovery _____ Pressure Maintenance ___ ____ Disposal _____ Storage
Application qualifies for administrative approval? ____X____ Yes _____ No

II. OPERATOR:
ADDRESS: 105 South 4th Street, Artesia, New Mexico 88210
CONTACT PARTY: Sam Brandon PHONE: (505) 748-4281

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 ___X___ No
If yes, give the Division order number authorizing the project: _____

RECEIVED
FEB 10 2004
Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

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 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 re-injected 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 geologic data on the injection zone including appropriate litho logic detail, geologic 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 sources 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 sources 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: Sam Brandon TITLE: Operations Engineer
SIGNATURE: _____ DATE: _____

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

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

BEFORE THE OIL CONSERVATION DIVISION
Santa Fe, New Mexico
Case Nos. 13227/13228 Exhibit No. 20
Submitted by:
Yates Petroleum Corporation
Hearing Date: March 4, 2004

C-108 Application for Authorization to Inject
Yates Petroleum Corporation
North Dagger Draw Waterflood Project
Sections 19 and 30, T19S, R25E
Eddy County, New Mexico

I. The purpose of converting these wells is to initiate a waterflood project in the Canyon Dolomite.

Yates Petroleum Corporation plans to convert 5 wells to a water injection service into the Canyon Dolomite.

II. Operator: Yates Petroleum Corporation
105 South Fourth Street
Artesia, NM 88210
Sam Brandon (505) 748-4281

III. Well Data: See Attachment A

IV. This is not an expansion of an existing project.

V. See attached map, Attachment B.

VI. See Attachment C.

VII. 1. Proposed average daily project injection volume will be approximately 12500 BWPD (2500 BWPD per well). Maximum daily injection volume will be approximately 25000 BWPD (5000 BWPD per well).

2. This will be a closed system.

3. Proposed average injection pressure – 0 psi. Rates will be controlled to maintain pressure below formation fracture pressure.
Proposed maximum injection pressure –1520 psi.

4. Sources of injected water would be produced water from the Canyon Dolomite.

VIII. 1. The proposed injection interval is the portion of the Canyon Dolomite formation consisting of porous Dolomite at depths of 7620' – 7908'.

2. Possible Fresh water zones overlie the proposed injection formations at depths to approximately 390'. There are no fresh water zones underlying the formation.

IX. The proposed disposal interval may be acidized with 15 or 20% HCL acid.

X. Logs were filed at your office when the well was drilled.

XI. There are four active fresh water wells within one mile of the proposed water injection wells. Analysis of water from these wells and a location map are Attachment D.

XII. Yates Petroleum Corporation has examined geologic and engineering data and has found that there is no evidence of faulting in the proposed interval. (Attachment E)

XIII. Proof of notice.

A. Certified letters sent to the surface owner and offset operators attached (Attachment F)

B. Copy of legal advertisement attached. (Attachment G)

XIV. Certification is signed.

Yates Petroleum Corporation
Ross EG Federal Com No. 5
Sec. 19-19S-25E
Eddy County, New Mexico

Attachment A
Page 1

III. Well Data

A. 1. Lease Name/Location
Ross EG Federal Com No. 5
Sec. 19-19S-25E
860' FNL & 860' FEL (A)

30-015-26937

2. Casing Strings:
Proposed well condition:
9⅝" 36# at 1161'. Hole size 14¾. Cemented with 1300 sacks. Cement circulated

7" 26# J55 & N80 at 8230'. Hole size 8¾". Cemented in two stages with 675 sacks in first stage (cement circulated) and 1075 sacks in second stage (cement circulated). DV tool @ 5775'.

3. Tubing string will be plastic coated or cement lined 2⅞" 6.5# N80.

4. Propose to use Guiberson or Baker plastic-coated or nickel-plated packer set at 7650'±.

B. 1. Injection Formation: Canyon

2. Injection interval into cased hole perforations 7725'-7908'.

3. Well was originally drilled as a Canyon well with perforations at 7725'- 41', 7775-7809', 7827-43' and 7881'-82'.

4. Next higher (shallower) oil or gas zone within 2 miles – Wolfcamp
Next lower (deeper) oil or gas zone within 2 miles – Strawn.

5.

Yates Petroleum Corporation
Ross EG Federal Com No. 12
Sec. 19-19S-25E
Eddy County, New Mexico

Attachment A
Page 1

30-015-27053

III. Well Data

A. 1. Lease Name/Location
Ross EG Federal Com No. 12
Sec. 19-19S-25E
1980' FNL & 660' FEL (H)

2. Casing Strings:
Proposed well condition:

9⅝" 36# at 1077'. Hole size is 14¾". Cemented with 1300 sacks. Cement circulated.

7" 23 & 26# J55 & N80 at 8275'. Hole size is 8¾". Cemented in two stages with 600 sacks in first stage (cement circulated) and 850 sacks in second stage (cement circulated). DV tool @ 5624'.

3. Tubing string will be plastic coated or cement lined 2⅞" 6.5# N80.

4. Propose to use Guiberson or Baker plastic-coated or nickel-plated packer set at 7680'±.

B. 1. Injection Formation: Canyon

2. Injection interval into cased hole perforations 7740'-7882'.

3. Well was originally drilled as a Canyon well with perforations at 7792'- 7804' and 7830'-40'.

4. Next higher (shallower) oil or gas zone within 2 miles – Wolfcamp
Next lower (deeper) oil or gas zone within 2 miles – Strawn.

Yates Petroleum Corporation
Ross EG Federal Com No. 9
Sec. 19-19S-25E
Eddy County, New Mexico

Attachment A
Page 1

30-015-26949

III. Well Data

A. 1. Lease Name/Location
Ross EG Federal Com No. 9
Sec. 19-19S-25E
1980' FSL & 660' FEL (I)

2. Casing Strings:
Proposed well condition:

9⅝" 36#, K55 at 1120'. Hole size 14¾". Cemented with 1200 sacks. Cement circulated

7" 23 & 26# J55 & N80 at 8230'. Hole size 8¾". Cemented in two stages with 650 sacks in first stage (cement circulated) and 850 sacks in second stage (cement circulated). DV tool @ 5624'.

3. Tubing string will be plastic coated or cement lined 2⅞" 6.5# N80.

4. Propose to use Guiberson or Baker plastic-coated or nickel-plated packer set at 7670'±.

B. 1. Injection Formation: Canyon

2. Injection interval into cased hole perforations 7718'-7896'.

3. Well was originally drilled as a Canyon well with perforations at 7718'-24', 7752-72', 7801-28' and 7844'-56'.

4. Next higher (shallower) oil or gas zone within 2 miles – Wolfcamp
Next lower (deeper) oil or gas zone within 2 miles – Strawn.

Yates Petroleum Corporation
Dagger Draw 30N Com No. 15
Sec. 30-19S-25E
Eddy County, New Mexico

Attachment A
Page 1

30-015-27689

III. Well Data

A. 1. Lease Name/Location
Dagger Draw 30N Com No. 15
Sec. 30-19S-25E
660' FNL & 660' FEL

A

2. Casing Strings:
Proposed well condition:
9⅝" 36#, K55 at 1115'. Hole size 14¾". Cemented with 1100 sacks. Cement circulated.

7" 26# K55 at 8058'. Hole size 8¾". Cemented in two stages with 500 sacks and second stage with 620 sacks. Top of cement 480' by temperature survey.

3. Tubing string will be plastic coated or cement lined 2⅞" 6.5# N80.

4. Propose to use Guiberson or Baker plastic-coated or nickel-plated packer set at 7580'±.

B. 1. Injection Formation: Canyon

2. Injection interval into cased hole perforations 7620'-7826'.

3. Well was originally drilled as a Canyon well with perforations at 7620'-70', 7677-99', 7742-68', 7780-94' and 7802'-26'.

4. Next higher (shallower) oil or gas zone within 2 miles – Wolfcamp
Next lower (deeper) oil or gas zone within 2 miles – Strawn.

Yates Petroleum Corporation
Dagger Draw 30N Com No. 17
Sec. 30-19S-25E
Eddy County, New Mexico

Attachment A
Page 1

III. Well Data

A. 1. Lease Name/Location
Dagger Draw 30N Com No. 17
Sec. 30-19S-25E
1665' FNL & 660' FEL H

30-015-27378

2. Casing Strings:
Proposed well condition:

9⅝" 36#, K55 at 1105'. Hole size is 14¾". Cemented with 1100 sacks. Cement circulated.

7" 26# K55 at 8100'. Hole size is 8¾". Cemented in two stages with 600 sacks in first stage and 700 sacks in second stage (cement circulated). DV tool @ 5041'.

3. Tubing string will be plastic coated or cement lined 2⅞" 6.5# N80.

4. Propose to use Guiberson or Baker plastic-coated or nickel-plated packer set at 7610'±.

B. 1. Injection Formation: Canyon

2. Injection interval into cased hole perforations 7654'-7827'.

3. Well was originally drilled as a Canyon well with perforations at 7654'-99', 7720-48', 7772-89' and 7802'-27'.

4. Next higher (shallower) oil or gas zone within 2 miles – Wolfcamp
Next lower (deeper) oil or gas zone within 2 miles – Strawn.

Well Name: Dagger Draw 30N Com # 15 Field: _____

Location: 660' FNL & 660' FEL Sec. 30-19S-25E Eddy Co, NM

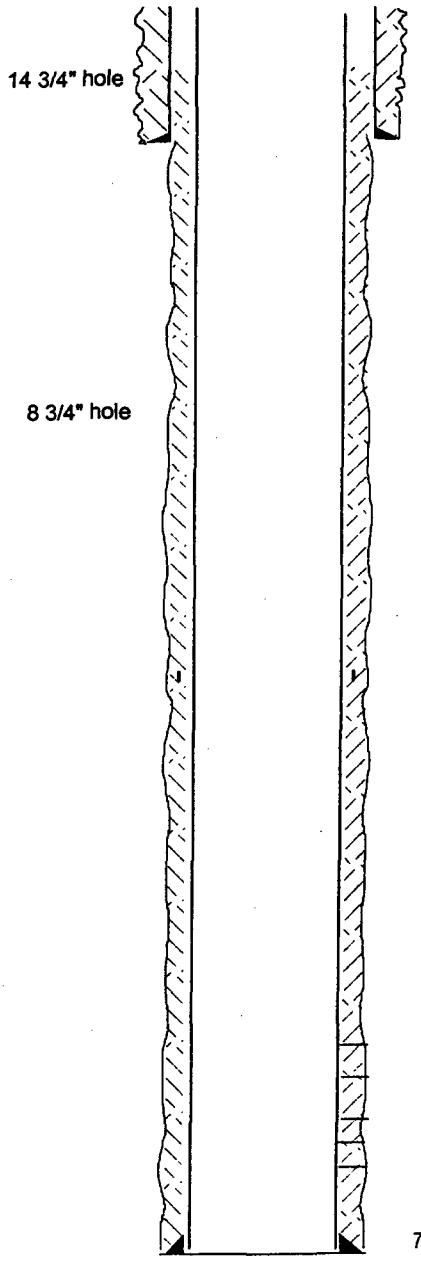
GL: 3539.5' Zero: _____ AGL: _____ KB: _____

Spud Date: 10/14/93 Completion Date: _____

Comments: _____

Casing Program	
Size/Wt/Grade/Conn	Depth Set
9 5/8" 36# K55	1115'
7" 26# K55	8058'

CURRENT CONFIGURATION



TOC (behind 7") @ 480'

9 5/8" csg @ 1115'. Cmtd w/ 1100 sx. Cmt circ.

DV tool @ 5030'

Canyon perfs:
7620-70'
7677-99'
7742-68'
7780-94'
7802-26'

7" csg @ 8058'. Cmtd 1st stg w/ 500 sx. Cmtd 2nd stg w/ 620 sx.

SKETCH NOT TO SCALE

DATE: 9/11/03

Well Name: Dagger Draw 30N Com # 15 Field: _____

Location: 660' FNL & 660' FEL Sec. 30-19S-25E Eddy Co, NM

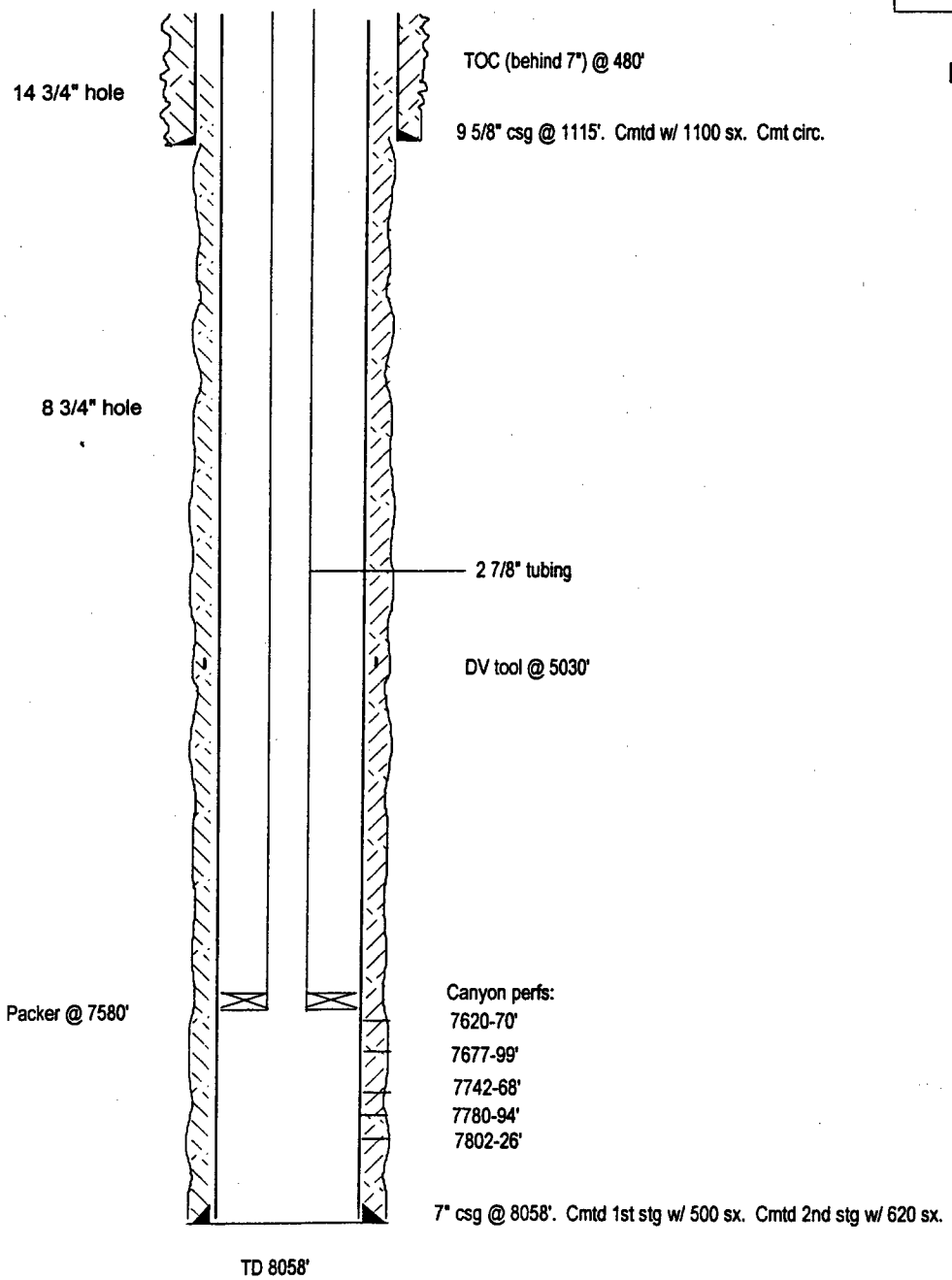
GL: 3539.5' Zero: _____ AGL: _____ KB: _____

Spud Date: 10/14/93 Completion Date: _____

Comments: _____

Casing Program	
Size/Wt/Grade/Conn	Depth Set
9 5/8" 36# K55	1115'
7" 26# K55	8058'

PROPOSED CONFIGURATION



SKETCH NOT TO SCALE

DATE: 9/11/03

Well Name: Dagger Draw 30N Com # 17 Field: _____

Location: 1665' FNL & 660' FEL Sec. 30-19S-25E Eddy Co, NM

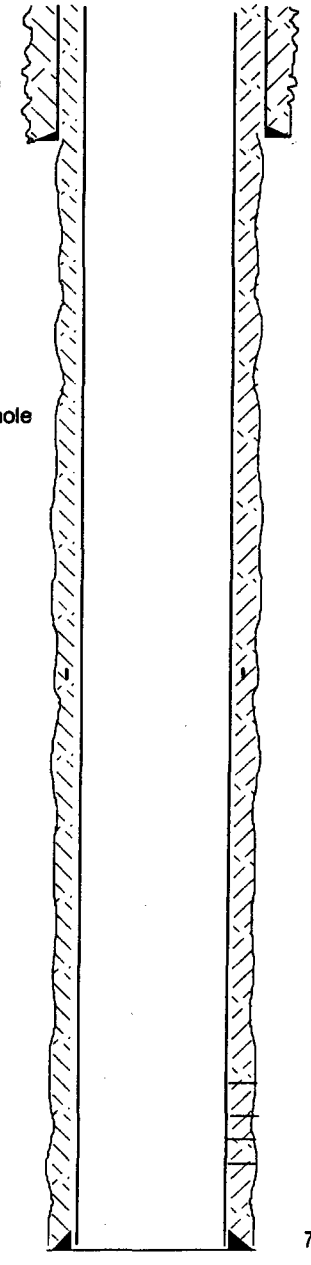
GL: 3564.5' Zero: _____ AGL: _____ KB: _____

Spud Date: 4/20/93 Completion Date: _____

Comments: _____

Casing Program	
Size/Wt/Grade/Conn	Depth Set
9 5/8" 36# K55	1105'
7" 26# K55	8100'

CURRENT CONFIGURATION



9 5/8" csg @ 1105'. Cmtd w/ 1100 sx. Cmt circ.

DV tool @ 5041'

Canyon perfs:

7654-99'
7720-48'
7772-89'
7802-27'

7" csg @ 8100'. Cmtd 1st stg w/ 600 sx. Cmtd 2nd stg w/ 700 sx. Cmt circ.

SKETCH NOT TO SCALE

DATE: 9/11/03

Well Name: Dagger Draw 30N Com # 17 Field: _____

Location: 1665' FNL & 660' FEL Sec. 30-19S-25E Eddy Co, NM

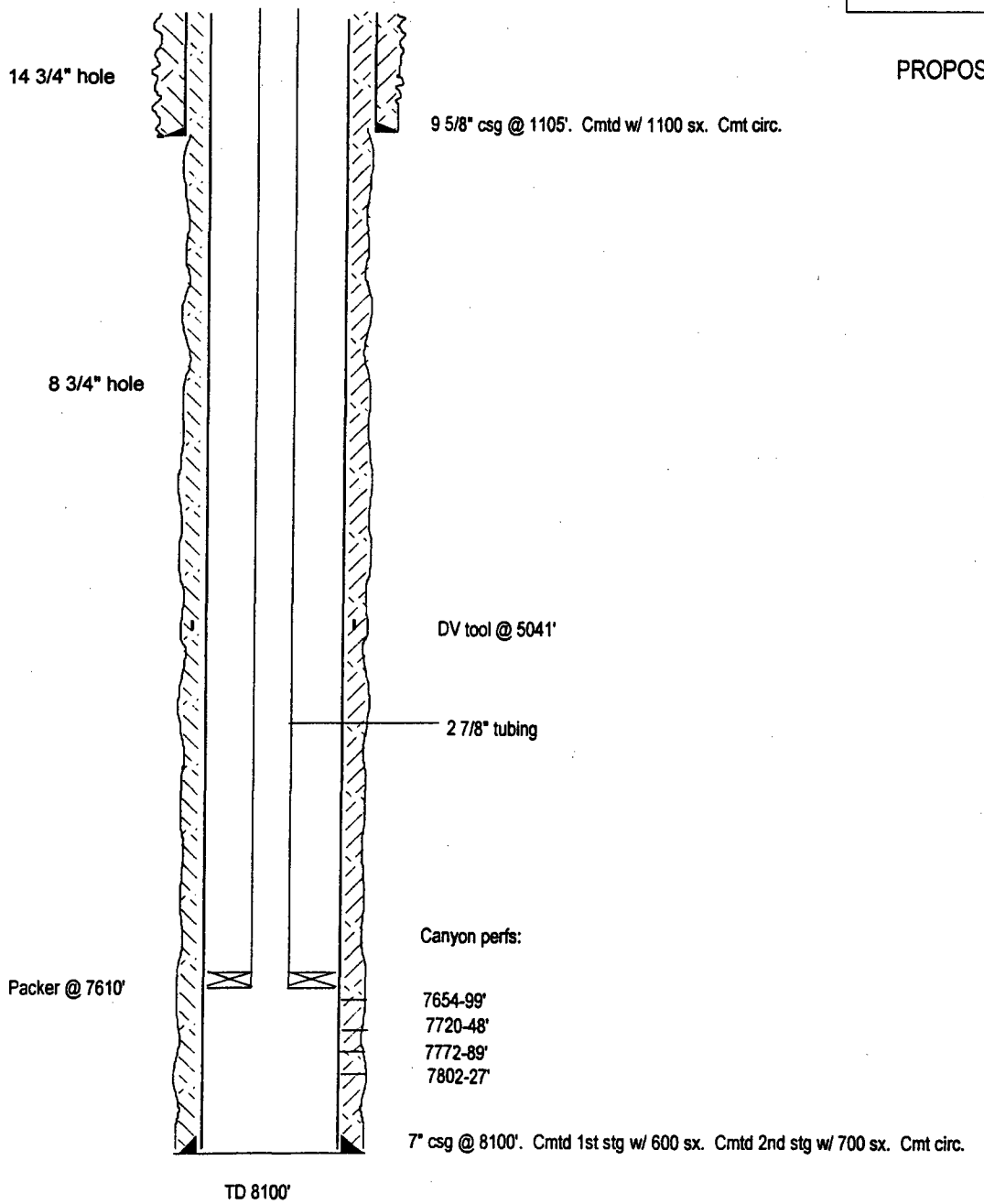
GL: 3564.5' Zero: _____ AGL: _____ KB: _____

Spud Date: 4/20/93 Completion Date: _____

Comments: _____

Casing Program	
Size/Wt/Grade/Conn	Depth Set
9 5/8" 36# K55	1105'
7" 26# K55	8100'

PROPOSED CONFIGURATION



SKETCH NOT TO SCALE

DATE: 9/11/03

Well Name: Ross EG Federal Com #5 Field: _____

Location: 860' FNL & 860' FEL Sec. 19-19S-25E Eddy Co, NM

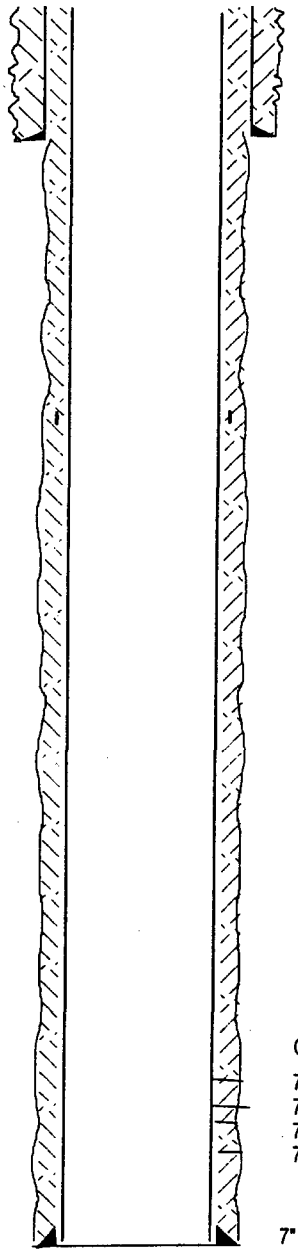
GL: 3573' Zero: _____ AGL: _____ KB: _____

Spud Date: 4/10/92 Completion Date: _____

Comments: _____

Casing Program	
Size/Wt/Grade/Conn	Depth Set
9 5/8" 36#	1161'
7" 26# N80 & J55	8230'

CURRENT CONFIGURATION



14 3/4" hole

9 5/8" csg @ 1161'. Cmtd w/ 1300 sx. Cmt circ.

8 3/4" hole

DV tool @ 5775'

Canyon perfs:
7725-41'
7775-7809'
7827-43'
7881-82'

7" csg @ 8230'. Cmtd 1st stg w/ 675 sx. Cmtd 2nd stg w/ 1075 sx. Cmt circ.

SKETCH NOT TO SCALE

DATE: 9/11/03

Well Name: Ross EG Federal Com #5 Field: _____

Location: 860' FNL & 860' FEL Sec. 19-19S-25E Eddy Co, NM

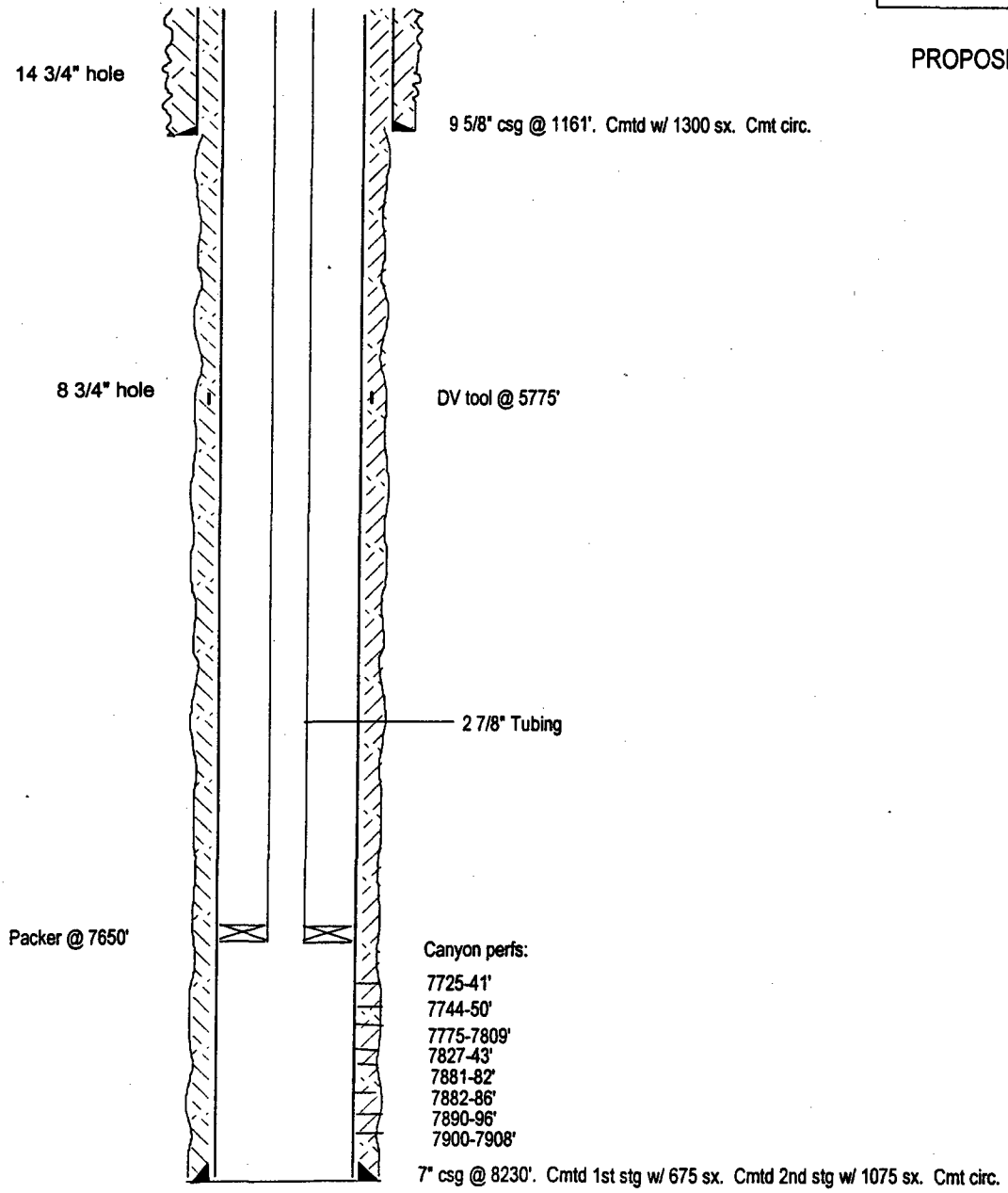
GL: 3573' Zero: _____ AGL: _____ KB: _____

Spud Date: 4/10/92 Completion Date: _____

Comments: _____

Casing Program	
Size/Wt/Grade/Conn	Depth Set
9 5/8" 36#	1161'
7" 26# N80 & J55	8230'

PROPOSED CONFIGURATION



SKETCH NOT TO SCALE

DATE: 9/11/03

15.

Well Name: Ross EG Federal Com #9 Field: _____

Location: 1980' FSL & 660' FEL Sec. 19-19S-25E Eddy Co, NM

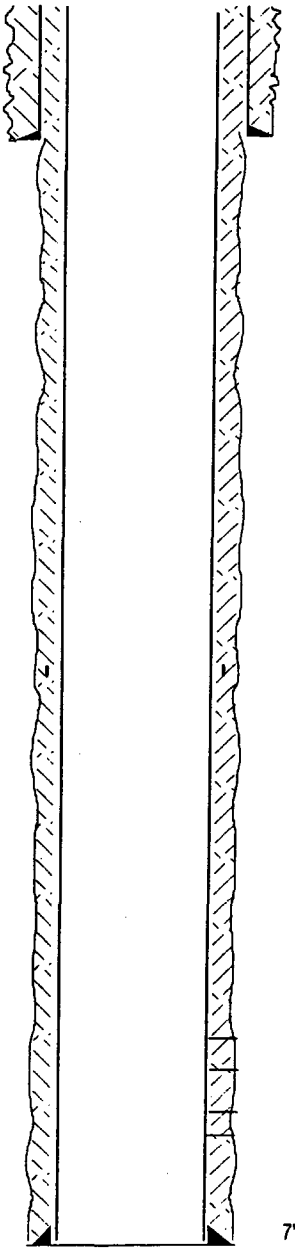
GL: 3571' Zero: _____ AGL: _____ KB: _____

Spud Date: 7/22/93 Completion Date: _____

Comments: _____

Casing Program	
Size/Wt/Grade/Conn	Depth Set
9 5/8" 36#	1120'
7" 23 & 26# N80 & J55	8230'

CURRENT CONFIGURATION



9 5/8" csg @ 1120'. Cmtd w/ 1200 sx. Cmt circ.

DV tool @ 5624'

Canyon perfs:
7718, 20, 22, 24'
7752-7772'
7801-28'
7844-56'

7" csg @ 8230'. Cmtd 1st stg w/ 650 sx. Cmtd 2nd stg w/ 850 sx. Cmt circ.

SKETCH NOT TO SCALE

DATE: 9/11/03

Well Name: Ross EG Federal Com #9 Field: _____

Location: 1980' FSL & 660' FEL Sec. 19-19S-25E Eddy Co, NM

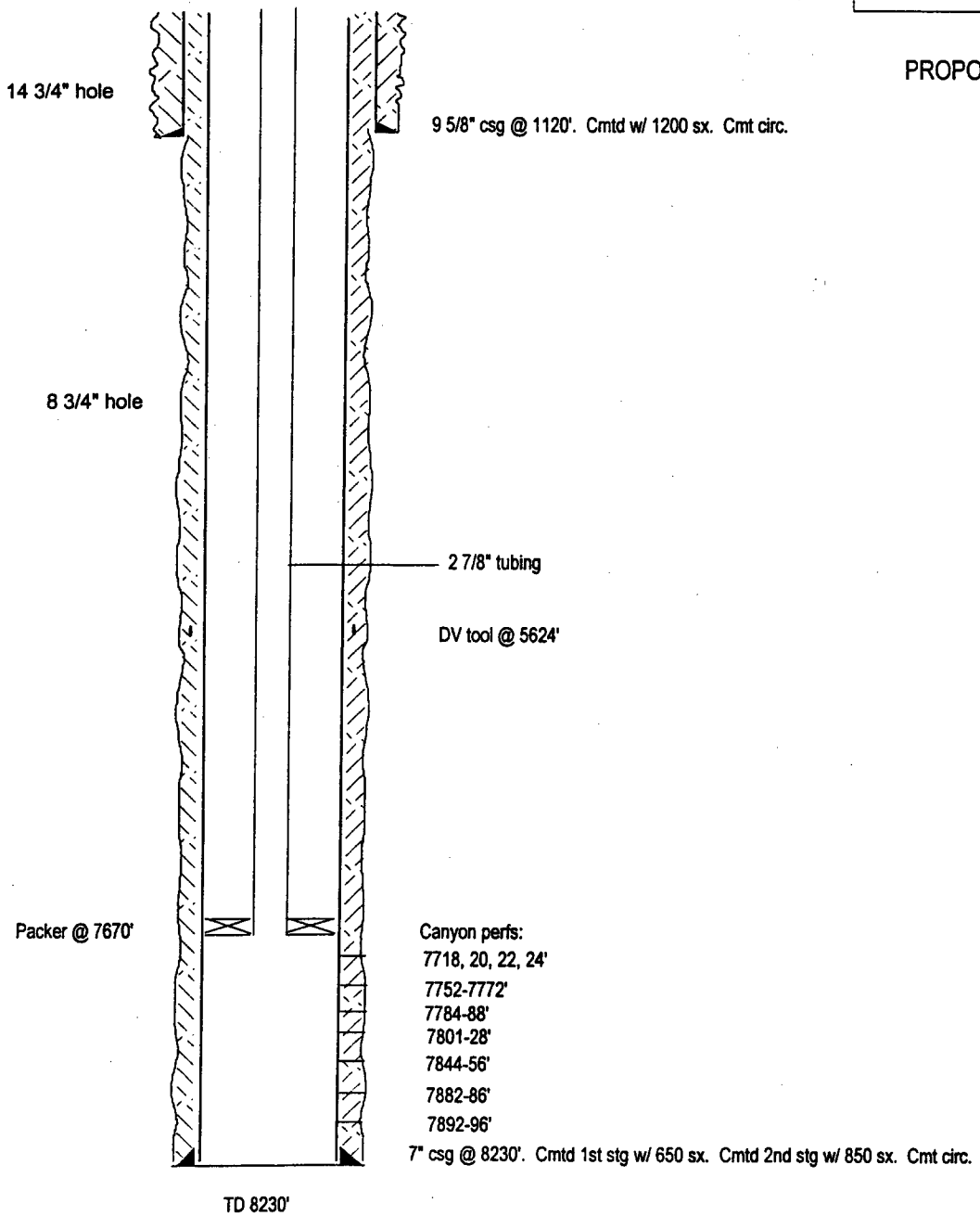
GL: 3571' Zero: _____ AGL: _____ KB: _____

Spud Date: 7/22/93 Completion Date: _____

Comments: _____

Casing Program	
Size/Wt/Grade/Conn	Depth Set
9 5/8" 36#	1120'
7" 23 & 26# N80 & J55	8230'

PROPOSED CONFIGURATION



SKETCH NOT TO SCALE

DATE: 9/11/03

Well Name: Ross EG Federal Com #12 Field: _____

Location: 1980' FNL & 660' FEL Sec. 19-19S-25E Eddy Co, NM

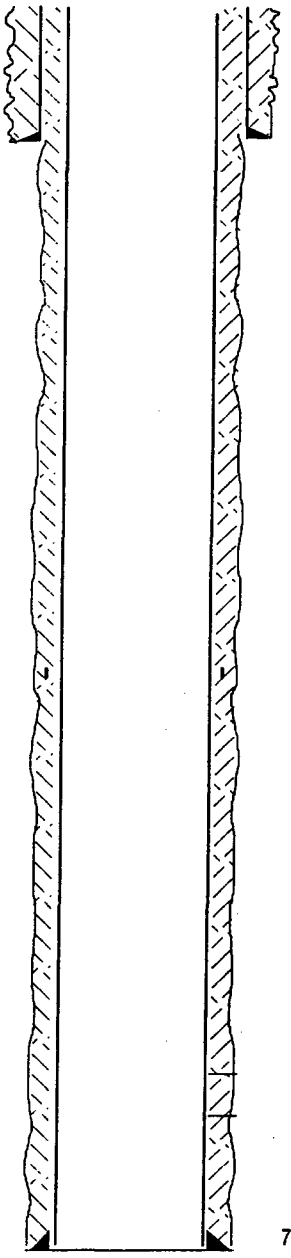
GL: 3582' Zero: _____ AGL: _____ KB: _____

Spud Date: 7/30/93 Completion Date: _____

Comments: _____

Casing Program	
Size/Wt/Grade/Conn	Depth Set
9 5/8" 36#	1077'
7" 23 & 26# N80 & J55	8275'

CURRENT CONFIGURATION



14 3/4" hole

9 5/8" csg @ 1077'. Cmtd w/ 1300 sx. Cmt circ.

8 3/4" hole

DV tool @ 5624'

Canyon perfs:

7792-7804'

7830-40'

7" csg @ 8275'. Cmtd 1st stg w/ 600 sx. Cmtd 2nd stg w/ 850 sx. Cmt circ.

TD 8275'

SKETCH NOT TO SCALE

DATE: 9/11/03

Well Name: Ross EG Federal Com #12 Field: _____

Location: 1980' FNL & 660' FEL Sec. 19-19S-25E Eddy Co, NM

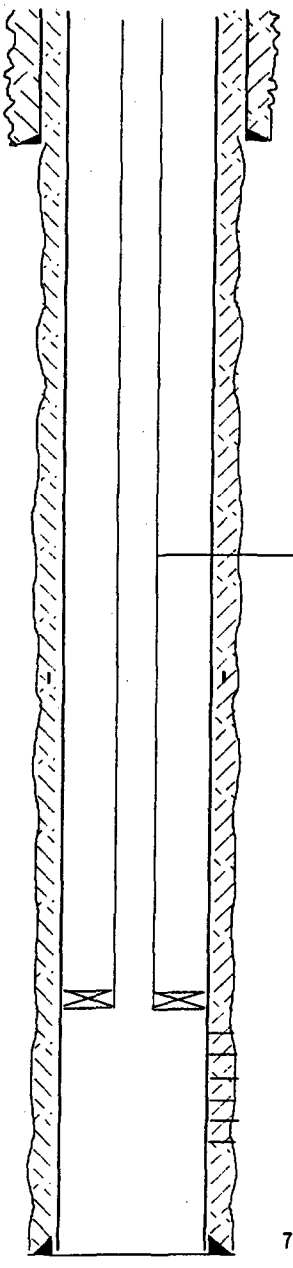
GL: 3582' Zero: _____ AGL: _____ KB: _____

Spud Date: 7/30/93 Completion Date: _____

Comments: _____

Casing Program	
Size/Wt/Grade/Conn	Depth Set
9 5/8" 36#	1077'
7" 23 & 26# N80 & J55	8275'

PROPOSED CONFIGURATION



14 3/4" hole

9 5/8" csg @ 1077'. Cmtd w/ 1300 sx. Cmt circ.

8 3/4" hole

2 7/8" tubing

DV tool @ 5624'

Packer @ 7680'

Canyon perfs:
7740-46'
7776-80'
7792-7804'
7810-18'
7830-40'
7874-82'

7" csg @ 8275'. Cmtd 1st stg w/ 600 sx. Cmtd 2nd stg w/ 850 sx. Cmt circ.

TD 8275'

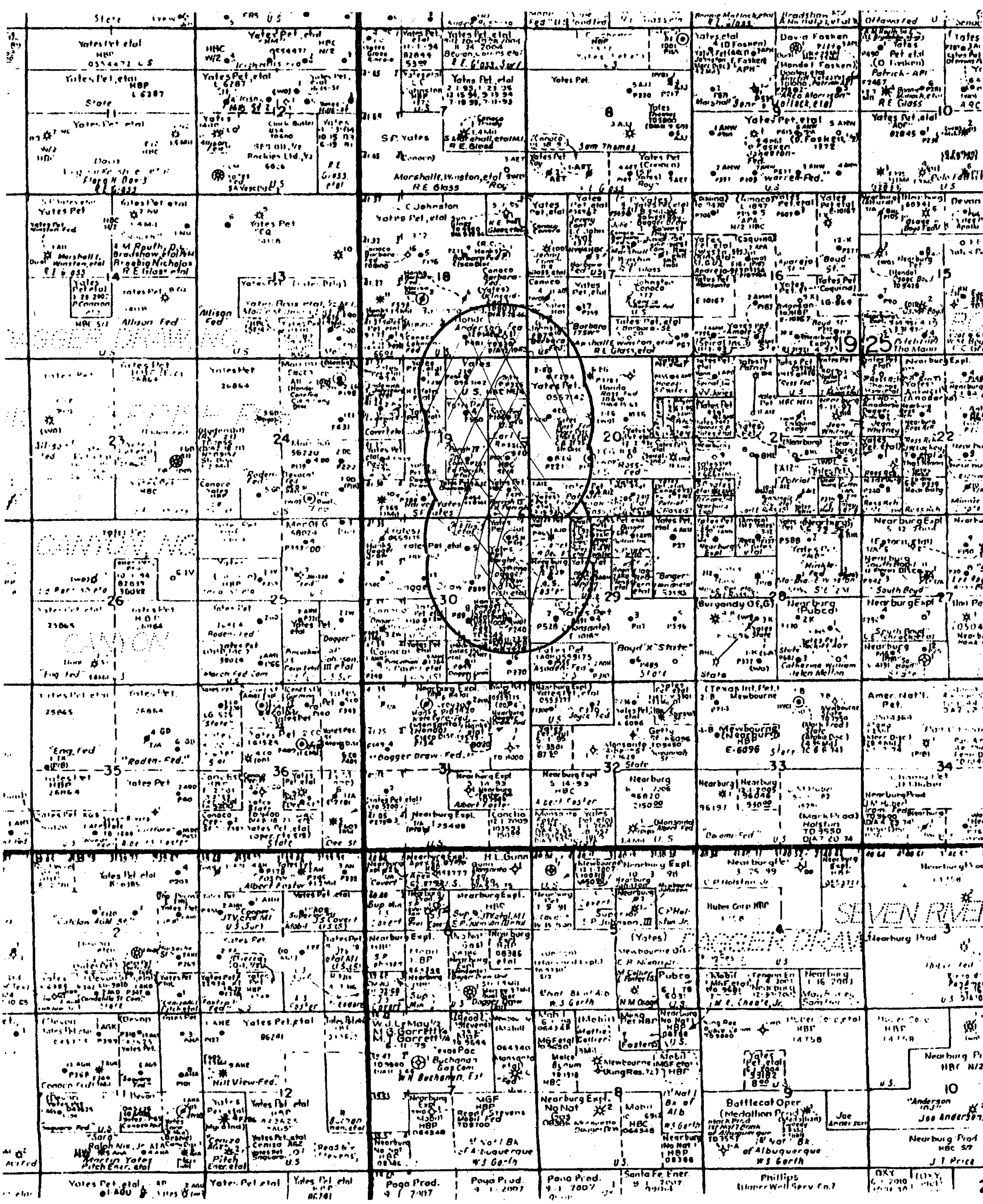
SKETCH NOT TO SCALE

DATE: 9/11/03

YATES PETROLEUM CORPORATION
NORTH DAGGER DRAW FIELD
PROPOSED WATER INJECTION WELLS

SECTIONS 19 AND 30
T19S-R25E
EDDY COUNTY, NEW MEXICO

ATTACHMENT B



20.

Attachment "C"

C/ P+A's within AOR

North Dagger Draw Waterflood Phase 1a
Form C-108

Tabulation of data on wells within area of review

Well Name	Operator	Type	Spud	Total Depth	Producing Zone	Perforations	Completion Information
Barbara Federal #4 1980' FSL & 660' FWL Sec. 17-19S-25E	Yates Petroleum Corp	P&A	11/28/65	8070'	Penn	7736-52', 7800-16'	9 5/8" @ 1072' Cmtd w/ 790 sx. 5 1/2" @ 7840'. Cmtd w/ 645 sx. Pulled from 4720' 4 1/2" @ 7960'. Cmtd w/ 400 sx.
Barbara 17 SW Com #17 1650' FSL & 1650' FWL Sec. 17-19S-25E	Yates Petroleum Corp	oil	11/8/93	9370'	Canyon	7710-17', 7742-58', 7772-88', 7790-98', 7800-14', 7826-32'	9 5/8" @ 1132'. Cmtd w/ 1600 sx. 7" @ 9370'. Cmtd w/ 1300 sx.
Barbara 17 SW Com #10 780' FSL & 730' FWL Sec. 17-19S-25E	Yates Petroleum Corp	oil	1/12/91	8105'	Canyon	7682-91', 7750-59', 7786-95', 7830-39', 7850-59'	9 5/8" @ 1219'. Cmtd w/ 1200 sx. 7" @ 8105'. Cmtd w/ 1600 sx.
Barbara Federal # 2 1980' FSL & 1980' FWL Sec. 18-19S-25E	Conoco	P&A	8/18/72	7954'		7622-60', 7720-32', 7746-64', 7772-84', 7798-7808', 7864-68'	13 3/8" @ 395'. Cmtd w/ 400 sx 8 5/8" @ 1009'. Cmtd w/ 575 sx. 5 1/2" @ 7954'. Cmtd w/ 400 sx.
Barbara Federal # 6 1980' FSL & 1980' FEL Sec. 18-19S-25E	Conoco	P&A	6/20/76	8170'	Canyon	7690-7720', 7742-54, 7766-82', 7792-7800'	13 3/8" @ 415'. Cmtd w/ 300 sx 8 5/8" @ 1120'. Cmtd w/ 800 sx. 5 1/2" @ 8010'. Cmtd w/ 180 sx.
Barbara 18SE Federal # 8 710' FSL & 990' FEL Sec. 18-19S-25E	Yates Petroleum Corp	oil	5/13/89	8104'	Canyon	7723-43', 7758-78', 7792-7808', 7815-27' 7844-64', 7881-7909', 7915-58'	9 5/8" @ 1200'. Cmtd w/ 800 sx. 7" @ 8100'. Cmtd w/ 820 sx.
Barbara 18SE Federal # 12 710' FSL & 1980' FEL Sec. 18-19S-25E	Yates Petroleum Corp	oil	5/9/91	8100'	Canyon	7612-22', 7733-50', 7790-7810', 7818-30' 7840-50', 7882-96'	9 5/8" @ 1200'. Cmtd w/ 2550 sx. 7" @ 8098'. Cmtd w/ 1500 sx.
Lodewick 'A' # 1 660' FNL & 1980' FWL Sec. 19-19S-25E	Yates Petroleum Corp	oil	10/20/81	7950'	Canyon	7776-84', 7844-60', 7872-82', 7798-35' 7844-81'	13 3/8" @ 400'. Cmtd w/ 725 sx 8 5/8" @ 1199'. Cmtd w/ 800 sx. 5 1/2" @ 7950'. Cmtd w/ 1900 sx.
Ross E G Federal Com #2 660' FNL & 1980' FEL Sec. 19-19S-25E	Yates Petroleum Corp	oil	8/21/86	8100'	Canyon	7700-03', 7706-09', 7714-20', 7782-93'	9 5/8" @ 1200'. Cmtd w/ 1200 sx. 7" @ 8100'. Cmtd w/ 400 sx.
Parish 'IV' Com #1 1980' FSL & 1980' FEL Sec. 19-19S-25E	Yates Petroleum Corp	oil	3/14/87	8115'	Canyon	7801-05, 7816-30', 7865-71', 7913-17' 7924-29', 8003-08'	9 5/8" @ 1147'. Cmtd w/ 1200 sx. 7" @ 8115'. Cmtd w/ 675 sx.
Parish 'IV' Com #5 915' FSL & 660' FEL Sec. 19-19S-25E	Yates Petroleum Corp	oil	10/14/91	8250'	Canyon	7614-18', 7683-84', 7716-19', 7726-31', 7771-74', 7782-90', 7806-17', 7644-50'	9 5/8" @ 1090'. Cmtd w/ 900 sx. 7" @ 8248'. Cmtd w/ 1600 sx.

Attachment "C"

North Dagger Draw Waterflood Phase 1a
Form C-108

Tabulation of data on wells within area of review

Well Name	Operator	Type	Spud	Total Depth	Producing Zone	Perforations	Completion Information
Dagger Draw #14 660' FSL & 1980' FWL Sec. 19-19S-25E	Yates Petroleum Corp	oil	3/12/93	8091'	Canyon	7708-24', 7734-73', 7782-7802', 7814-40'	9 5/8" @ 1080'. Cmtd w/ 1100 sx. 7" @ 8091'. Cmtd w/ 1205 sx.
Parish 'IV' Com #4 1780' FNL & 1980' FEL Sec. 19-19S-25E	Yates Petroleum Corp	oil	5/15/91	8250'	Canyon	7747-69', 7776-86', 7790-94', 7798-7804' 7815-24', 7853, 7856-70'	9 5/8" @ 1215'. Cmtd w/ 1410 sx. 7" @ 8250'. Cmtd w/ 1550 sx.
Chamiza AJC Com #1 990' FSL & 1980' FEL Sec. 19-19S-25E	Yates Petroleum Corp	oil	4/23/91	8210'	Canyon	7617-25', 35', 37', 7646-54', 7673-77', 7712-16' 7714-49', 7762-75', 7801-12', 7830-47'	9 5/8" @ 1215'. Cmtd w/ 1100 sx. 7" @ 8210'. Cmtd w/ 1800 sx.
Ross EG Fed Com #6 660' FNL & 1980' FWL Sec. 20-19S-25E	Yates Petroleum Corp	oil	2/4/92	8300'	Canyon	7786-7808', 7860'-64', 7830-44'	8 5/8" @ 1093'. Cmtd w/ 1675 sx. 7" @ 8300'. Cmtd w/ 1300 sx.
Ross EG Fed Com #1 1980' FSL & 1980' FWL Sec. 20-19S-25E	Yates Petroleum Corp	oil	3/23/78	9450'	Canyon	7683-7702', 7780-7806', 7827-41' CIBP @ 8190'	13 3/8" @ 293'. Cmtd w/ 250 sx 8 5/8" @ 1064'. Cmtd w/ 600 sx. 4 1/2" @ 9444'. Cmtd w/ 490 sx.
Ross EG Federal #3 660' FNL & 660' FWL Sec. 20-19S-25E	Yates Petroleum Corp	oil	1/14/89	8080'	Canyon	7762-65.5', 7775-81', 7795-98', 7806-22'	9 5/8" @ 1210'. Cmtd w/ 950 sx. 7" @ 8080'. Cmtd w/ 800 sx.
Ross EG Federal Com #8 1980' FSL & 660' FWL Sec. 20-19S-25E	Yates Petroleum Corp	oil	6/5/92	8270'	Canyon	7766-76', 7796-7808', 7818-34', 7852-64'	9 5/8" @ 1124'. Cmtd w/ 1000 sx. 7" @ 8270'. Cmtd w/ 1525 sx.
Ross EF Federal Com #7 1980' FNL & 1980' FWL Sec. 20-19S-25E	Yates Petroleum Corp	oil	3/15/92	9420'	Morrow	9084-88', 9098-9124'	9 5/8" @ 1151'. Cmtd w/ 1270 sx. 7" @ 8300'. Cmtd w/ 1750 sx. 4 1/2" @ 9419'. Cmtd w/ 200 sx.
Patriot AIZ Com #4 810' FSL & 1980' FWL Sec. 20-19S-25E	Yates Petroleum Corp	oil	1/8/94	8220'	Canyon	7654-57', 7664-70', 7680-88', 7733-42', 7762-66', 7816-29'	9 5/8" @ 1158'. Cmtd w/ 1100 sx. 7" @ 8220'. Cmtd w/ 1425 sx.
Ross EG Federal #4 1980' FNL & 660' FWL Sec. 20-19S-25E	Yates Petroleum Corp	oil	7/10/91	8300'	Canyon	7792-7800', 7812-19', 7840-47', 7874-97'	9 5/8" @ 1220'. Cmtd w/ 1100 sx. 7" @ 8300'. Cmtd w/ 1650 sx.
Patriot AIZ Com #1 990' FSL & 660' FWL Sec. 20-19S-25E	Yates Petroleum Corp	oil	11/24/91	8230'	Canyon	7621-27', 7641-45', 7707-09', 7751-63', 7798-7810', 7835-39'	9 5/8" @ 1086'. Cmtd w/ 1100 sx. 7" @ 8227'. Cmtd w/ 1675 sx.

Attachment "C"

North Dagger Draw Waterflood Phase 1a
Form C-108

Tabulation of data on wells within area of review

Well Name	Operator	Type	Spud	Total Depth	Producing Zone	Perforations	Completion Information
Aspden AOH Fed. Com #3 1980' FNL & 1990' FWL Sec. 29-19S-25E	Yates Petroleum Corp	oil	5/11/95	8310'	Canyon	7638-46', 7651-65', 7680-98', 7710-18', 7776-92', 7812-20'	9 5/8" @ 1125'. Cmtd w/ 1300 sx. 7" @ 8310'. Cmtd w/ 1625 sx.
Aspden AOH Fed Com #2 330' FSL & 1980' FWL Sec. 29-19S-25E	Yates Petroleum Corp	oil	7/5/95	8270'	Canyon	7704-08', 7721-23', 7744-62', 7776-84', 7798-7802'. (7932-46' Squeezed)	9 5/8" @ 1165'. Cmtd w/ 1200 sx. 7" @ 8270'. Cmtd w/ 1400 sx.
Voight AJD Com #3 660' FNL & 1980' FWL Sec. 29-19S-25E	Yates Petroleum Corp	oil	9/10/93	8270'	Canyon	7700-06', 7716-20', 7750-54', 7762-78' 7810-14'	9 5/8" @ 1116'. Cmtd w/ 1400 sx. 7" @ 8270'. Cmtd w/ 1600 sx.
Boyd X State Com # 4 1980' FSL & 1980' FWL Sec. 29-19S-25E	Yates Petroleum Corp	oil	10/10/93	8300'	Canyon	7680-90', 7730-50', 7784-90'	9 5/8" @ 1165'. Cmtd w/ 1200 sx. 7" @ 8300'. Cmtd w/ 1575 x.
Voight AJD Com #1 660' FNL & 660' FWL Sec. 29-19S-25E	Yates Petroleum Corp	oil	1/23/92	8250'	Canyon	7654-60', 7668-72', 7678-82', 7690-94', 7718-30', 7758-72'	9 5/8" @ 1089'. Cmtd w/ 1000 sx. 7" @ 8250'. Cmtd w/ 1650 sx.
Boyd X State Com # 2 1980' FSL & 660' FWL Sec. 29-19S-25E	Yates Petroleum Corp	oil	11/21/92	8300'	Canyon	7670-80', 7708-24', 7738-42', 7768-84 7812-24'	9 5/8" @ 1100'. Cmtd w/ 900 sx. 7" @ 8300'. Cmtd w/ 1375 sx.
Voight AJD Com #2 1980' FNL & 660' FWL Sec. 29-19S-25E	Yates Petroleum Corp	oil	9/12/92	8270'	Canyon	7657-62', 7694-7704', 7726-42', 7760-68' 7815-18', 7824-26'	9 5/8" @ 1050'. Cmtd w/ 1100 sx. 7" @ 8270'. Cmtd w/ 1600 sx.
Aspden AOH Fed Com #1 660' FSL & 660' FWL Sec. 29-19S-25E	Yates Petroleum Corp	oil	9/16/94	8300'	Canyon	7700-06', 7710-12', 7718-34', 7755-71'	9 5/8" @ 1160'. Cmtd w/ 1000 sx. 7" @ 8300'. Cmtd w/ 1150 sx.
Dagger Draw #2 1969' FSL & 629' FEL Sec. 30-19S-25E	Roger C. Hanks Inc.	P&A	3/18/76	9368'	Canyon	7632-46', 7652-76', 7682-92', 7730-56', 7772- 98', 7832-42', 60-74', 88-98', 7906-28'	8 5/8" @ 1220'. Cmtd w/ 550 sx. 4 1/2" @ 7994' (shot off @ 5530'). Cmtd w/ 475 sx.
Dagger ZW #1 1980' FSL & 1980' FWL Sec. 30-19S-25E	Yates Petroleum Corp	oil	9/7/87	8000'	Canyon	7779-93', 7834-35'	9 5/8" @ 1125'. Cmtd w/ 1200 sx. 7" @ 8000'. Cmtd w/ 1112 sx.
Dagger Draw #5 990' FNL & 1980' FEL Sec. 30-19S-25E	Yates Petroleum Corp	oil	11/19/87	8100'	Canyon	7632-54', 64-74', 7720-24', 28-32', 38-48', 7784-98', 7804-20' (7863-76, 82-96 sqzd)	8 5/8" @ 1250'. Cmtd w/ 425 sx. 5 1/2" @ 8100'. Cmtd w/ 1805 sx.

Attachment "C"

North Dagger Draw Waterflood Phase 1a
Form C-108

Tabulation of data on wells within area of review

Well Name	Operator	Type	Spud	Total Depth	Producing Zone	Perforations	Completion Information
Dagger Draw #8 1980' FSL & 1980' FEL Sec. 30-19S-25E	Yates Petroleum Corp	oil	12/26/87	8009'	Canyon	7630-44', 7651-65', 7673-92', 7728-52', 7766-78', 7784-7810'	8 5/8" @ 1205'. Cmtd w/ 615 sx. 5 1/2" @ 8009'. Cmtd w/ 820 sx.
Dagger Draw #13 1980' FNL & 1980' FWL Sec. 30-19S-25E	Yates Petroleum Corp	oil	11/17/92	8100'	Canyon	7684-92', 7700-16', 7742-52', 7761-71' 7780-7803'	9 5/8" @ 1090'. Cmtd w/ 1100 sx. 7" @ 8100'. Cmtd w/ 1350 sx.
Dagger Draw 30SE Com #16 660' FSL & 660' FEL Sec. 30-19S-25E	Yates Petroleum Corp	oil	5/24/94	8100'	Canyon	7651-97', 7702-24', 7734-40', 7744-90'	9 5/8" @ 1106'. Cmtd w/ 1100 sx. 7" @ 8100'. Cmtd w/ 1115 sx.
Pincushion AHN #3 660' FSL & 1980' FWL Sec. 30-19S-25E	Yates Petroleum Corp	oil	10/17/91	8204'	Canyon	7633-37', 7699-7705', 7736-53', 7772-82' 7818-20'	9 5/8" @ 1129'. Cmtd w/ 900 sx. 7" @ 8204'. Cmtd w/ 1430 sx.
Dagger Draw #12 2130' FNL & 1800' FEL Sec. 30-19S-25E	Yates Petroleum Corp	oil	6/30/92	8100'	Canyon	7645-73', 7683-7712', 7725-53'	9 5/8" @ 1120'. Cmtd w/ 1100 sx. 7" @ 8100'. Cmtd w/ 1500 sx.
Dagger Draw Federal #11 660' FSL & 1980' FEL Sec. 30-19S-25E	Yates Petroleum Corp	oil	6/11/91	8114'	Canyon	7636-52', 7658-67', 7682-7710', 7736-60' 7785-95'	9 5/8" @ 1205'. Cmtd w/ 1949 sx. 7" @ 8114'. Cmtd w/ 1500 sx.

Well Name: Barbara Federal #4 Field: _____

Location: 1980' FSL & 660' FWL Sec. 17-19S-25E Eddy Co, NM

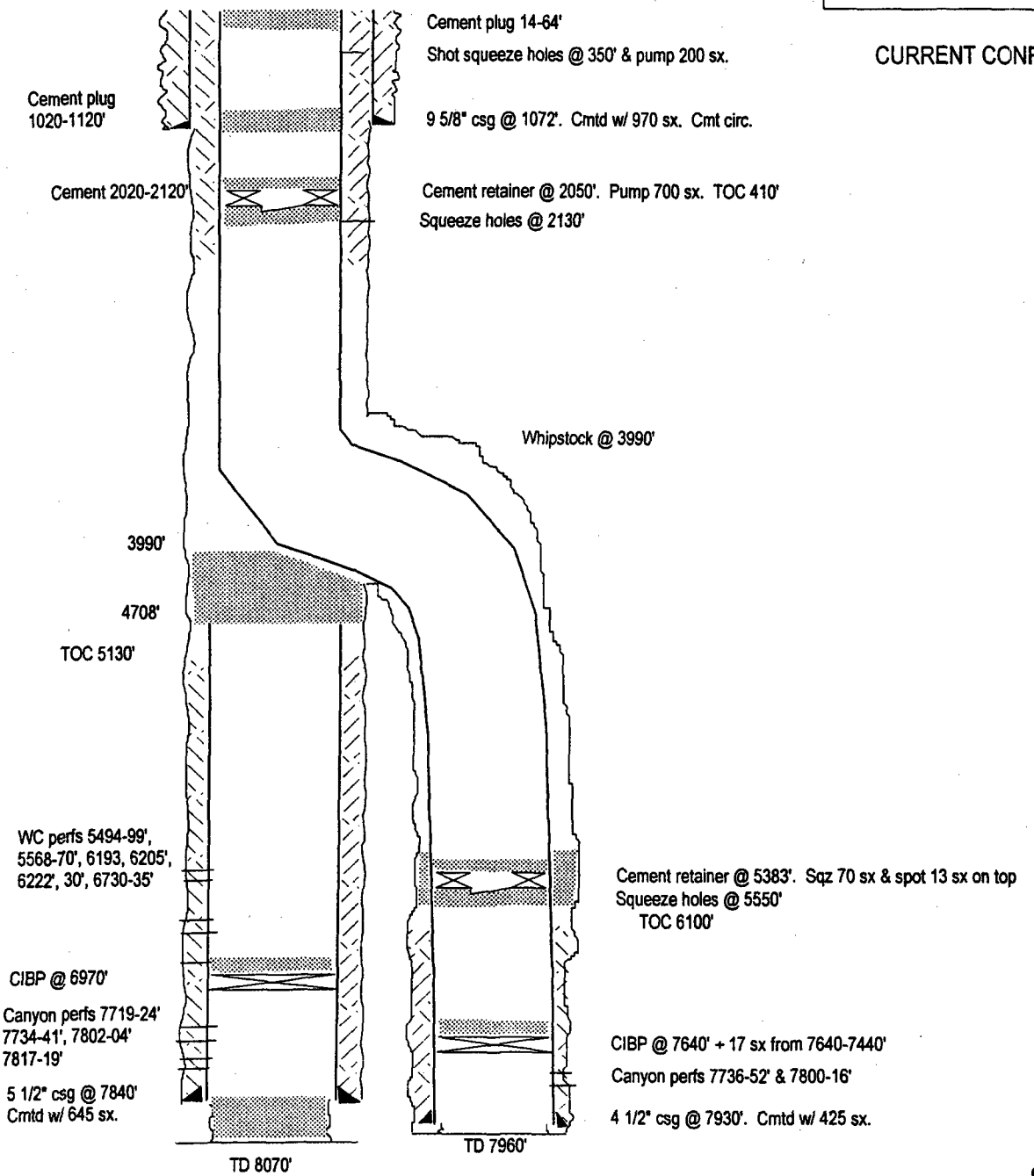
GL: 3552' Zero: _____ AGL: _____ KB: _____

Spud Date: 4/10/92 Completion Date: _____

Comments: _____

Casing Program	
Size/Wt/Grade/Conn	Depth Set
9 5/8" 32.3#	1072'
5 1/2" 17#	7840'
5 1/2" cut & pulled from 4720'	
4 1/2" 11.6#	7930'

CURRENT CONFIGURATION



SKETCH NOT TO SCALE

DATE: 9/15/03

Well Name: Barbara Federal #2 Field: _____

Location: 1980' FSL & 1980' FWL Sec. 18-19S-25E Eddy Co, NM

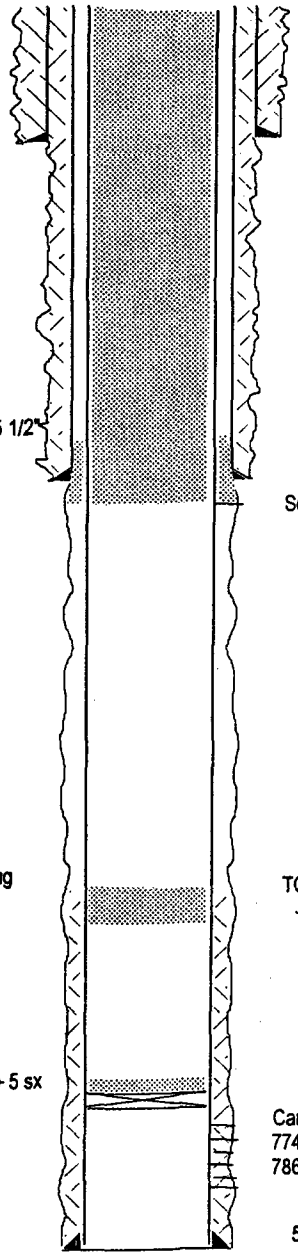
GL: 3601' Zero: _____ AGL: _____ KB: 3616'

Spud Date: _____ Completion Date: _____

Comments: _____

Casing Program	
Size/Wt/Grade/Conn	Depth Set
13 3/8" 54#	395'
8 5/8" 24#	1099'
5 1/2" 17#	7954'

CURRENT CONFIGURATION



13 3/8" csg @ 395'. Cmtd w/ 400 sx. Cmt circ.

Cement plug 1150' to surface.

TOC 1000' in 8 5/6" X 5 1/2" annulus

8 5/8" csg @ 1099'. Cmtd w/ 725 sx. Cmt circ.

Squeeze holes @ 1150'.

13 sx cement plug 6100-6205'

TOC 6100' by calc.

CIBP @ 7600' + 5 sx cement

Canyon perfs 7622-60', 7720-32' 7746-64', 7772-84', 7798-7808' 7864-68'

5 1/2" csg @ 7954'. Cmtd w/ 400 sx.

SKETCH NOT TO SCALE

DATE: 9/15/03

Well Name: Barbara Federal #6 Field: _____

Location: 1980' FSL & 1980' FEL Sec. 18-19S-25E Eddy Co, NM

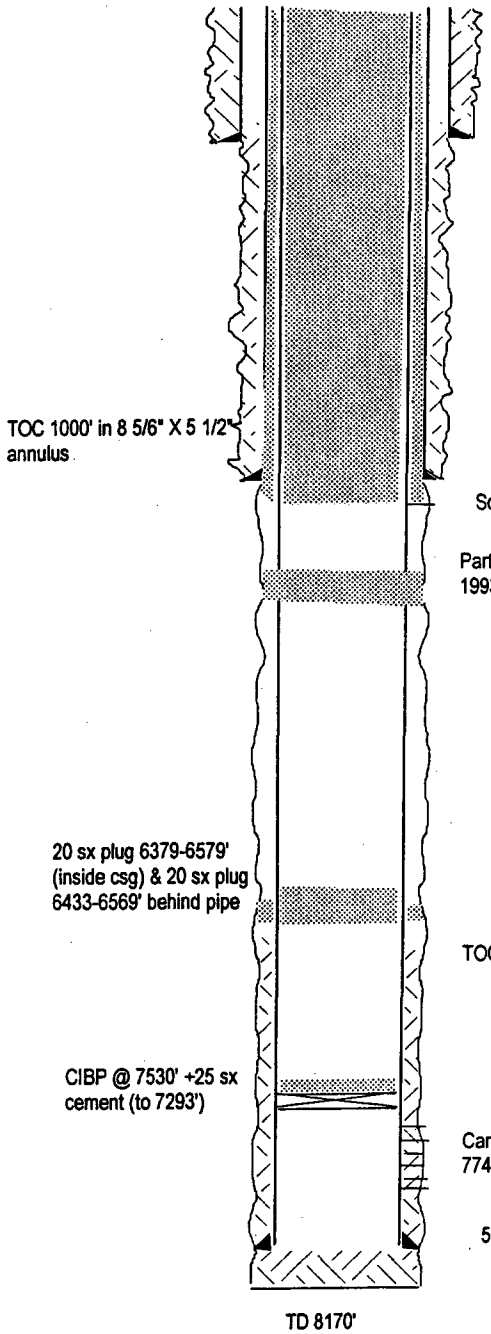
GL: 3592' Zero: _____ AGL: _____ KB: 3606'

Spud Date: _____ Completion Date: _____

Comments: _____

Casing Program	
Size/Wt/Grade/Conn	Depth Set
13 3/8" 54#	414'
8 5/8" 24#	1120'
5 1/2" 17#	8010"

CURRENT CONFIGURATION



SKETCH NOT TO SCALE

DATE: 9/15/03

Well Name: Dagger Draw No. 2 Field: _____

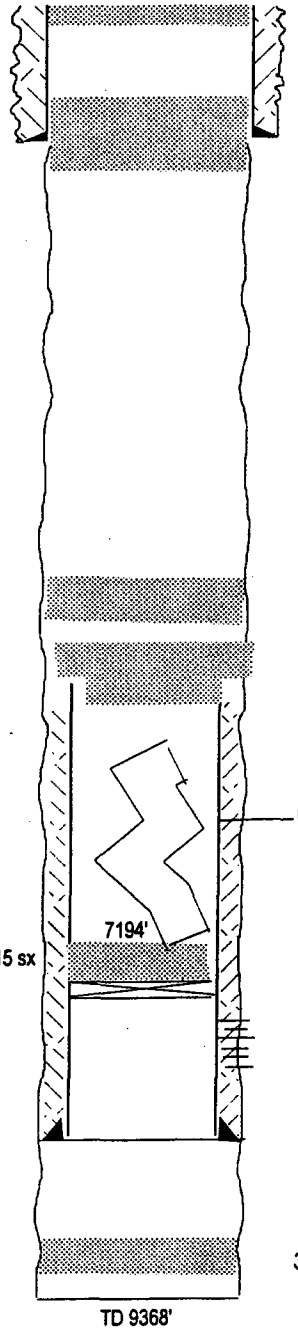
Location: 1969' FSL & 629' FEL Sec. 30-19S-25E Eddy Co, NM

GL: 3540.9' Zero: _____ AGL: _____ KB: _____

Spud Date: _____ Completion Date: _____

Comments: _____

Casing Program	
Size/Wt/Grade/Conn	Depth Set
8 5/8"	1220'
4 1/2"	7994'



10 sx plug 30' to surface

8 5/8" csg @ 1220'. Cmtd w/ 550 sx. TOC 36'.

65 sx plug 1270'-1100'

35 sx plug 4200'-4100'

35 sx plug 5580'-5420'

Casing cut and pulled from 5530'

620' tubing dropped in hole

7194'

CIBP @ 7600' + 15 sx cement.

Canyon perfs 7632-46', 7652-76', 7682-92'
7730-56', 7772-98', 7832-42', 7860-74', 7888-98', 7906-28'

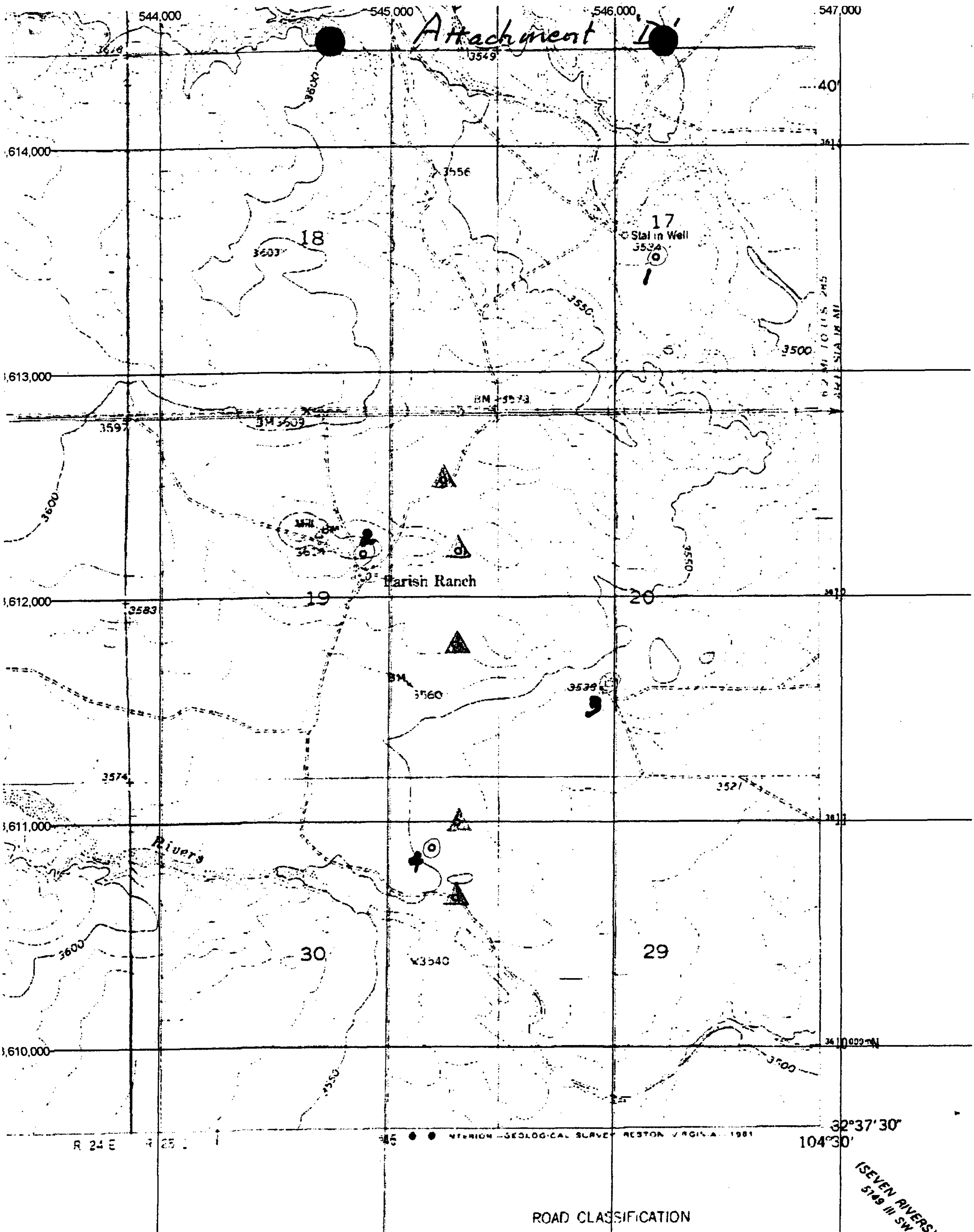
4 1/2" csg @ 7994'. Cmtd w/ 475 sx. Hole cleaned out to 8039'

35 sx plug 9101-9001'

TD 9368'

SKETCH NOT TO SCALE

DATE: _____



Parish Ranch; NM'; Scale: 1" = 0.333Mi 536Mt 1,760Ft, 1 Mi = 3.000" . 1 cm = 211Mt   Unimproved dirt

Attachment D

Map ref. #1

North Permian Basin Region
P.O. Box 740
Sundown, TX 79372-0740
(806) 229-8121
Lab Team Leader - Sheila Hernandez
(915) 495-7240

Water Analysis Report by Baker Petrolite

Company:	YATES PETROLEUM INC	Sales RDT:	33514
Region:	PERMIAN BASIN	Account Manager:	MIKE HARRISON (505) 910-9392
Area:	ARTESIA, NM	Sample #:	136439
Lease/Platform:	HOWELL RANCH HOUSE	Analysis ID #:	38454
Entity (or well #):	FRESH WATER WELL	Analysis Cost:	$40.00
Formation:	UNKNOWN		
Sample Point:	WELLHEAD		

Summary	
Sampling Date:	9/26/03
Analysis Date:	10/3/03
Analyst:	ANNA McELANEY
TDS (mg/l or g/m3):	1101.2
Density (g/cm3, tonne/m3):	1.001
Anion/Cation Ratio:	1.0000000
Carbon Dioxide:	
Oxygen:	
Comments:	

Analysis of Sample 136439 @ 75 °F

Anions	mg/l	meq/l	Cations	mg/l	meq/l
Chloride:	**78.0**	**2.2**	**Sodium:**	**110.0**	**4.79**
Bicarbonate:	**392.0**	**6.42**	**Magnesium:**	**38.0**	**3.13**
Carbonate:	**0.0**	**0.**	**Calcium:**	**149.0**	**7.44**
Sulfate:	**329.0**	**6.85**	**Strontium:**	**2.0**	**0.05**
Phosphate:			**Barium:**	**0.1**	**0.**
Borate:			**Iron:**	**0.1**	**0.**
Silicate:			Potassium:	3.0	0.08
			Aluminum:		
Hydrogen Sulfide:			Chromium:		
pH at time of sampling:			Copper:		
pH at time of analysis:		7.43	Lead:		
pH used in Calculation:		**7.43**	Manganese:		
			Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite $CaCO_3$		Gypsum $CaSO_4 \cdot 2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$		CO_2 Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.56	19.61	-0.98	0.00	-1.05	0.00	-1.15	0.00	0.66	0.00	0.2
100	0	0.68	25.21	-0.98	0.00	-0.98	0.00	-1.14	0.00	0.52	0.00	0.27
120	0	0.81	31.51	-0.97	0.00	-0.89	0.00	-1.11	0.00	0.41	0.00	0.34
140	0	0.96	38.16	-0.95	0.00	-0.78	0.00	-1.07	0.00	0.32	0.00	0.42

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

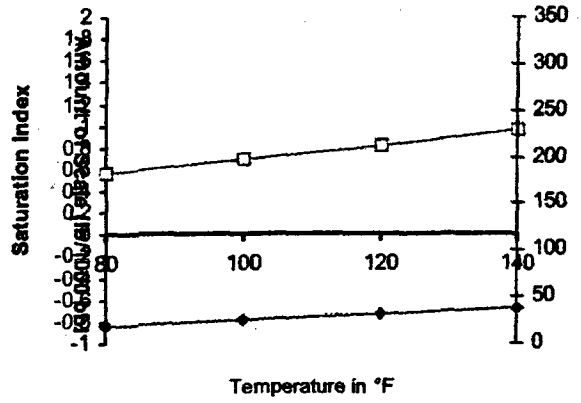
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

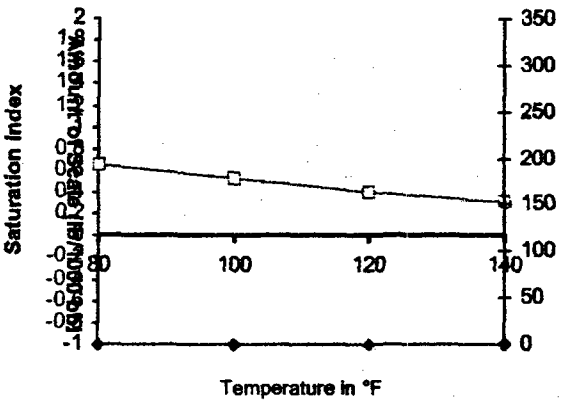
Scale Predictions from Baker Petrolite

Analysis of Sample 136439 @ 75 °F for YATES PETROLEUM INC, 10/3/03

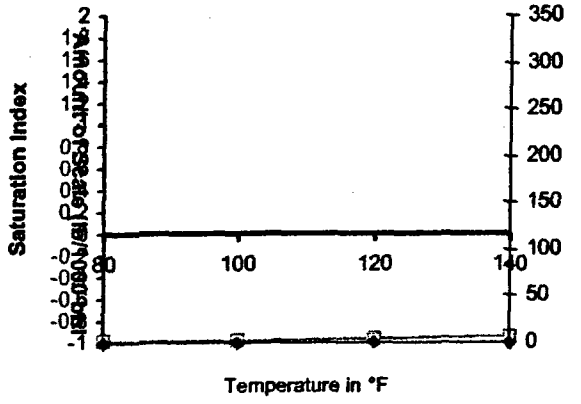
Calcite - CaCO3



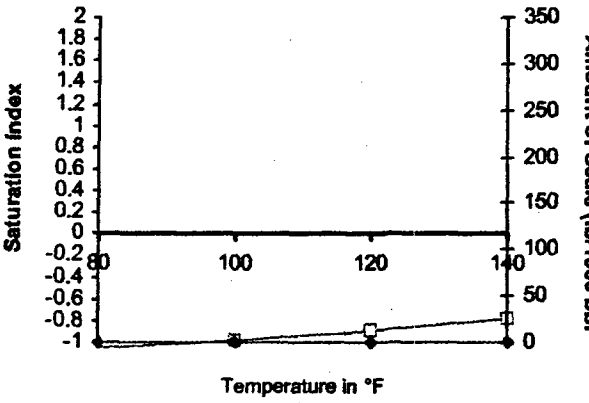
Barite - BaSO4



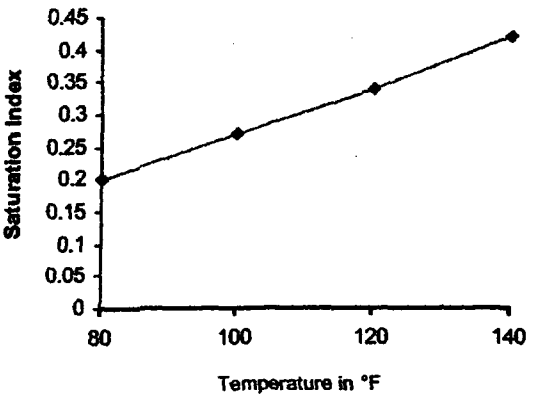
Gypsum - CaSO4*2H20



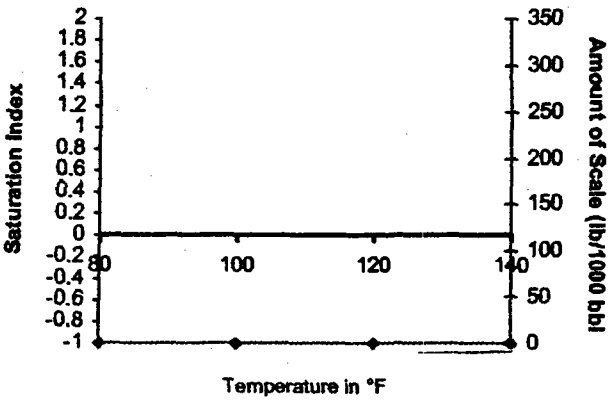
Anhydrite - CaSO4



Carbon Dioxide Partial Pressure



Celestite - SrSO4



Attachment D

Map ref #2

North Permian Basin Region
P.O. Box 740
Sundown, TX 79372-0740
(806) 229-8121
Lab Team Leader - Sheila Hernandez
(915) 495-7240

Water Analysis Report by Baker Petrolite

Company:	YATES PETROLEUM INC	Sales RDT:	33514
Region:	PERMIAN BASIN	Account Manager:	MIKE HARRISON (505) 910-9392
Area:	ARTESIA, NM	Sample #:	136440
Lease/Platform:	HOUGHTALING RANCH HOUSE	Analysis ID #:	38453
Entity (or well #):	FRESH WATER WELL	Analysis Cost:	$40.00
Formation:	UNKNOWN		
Sample Point:	WELLHEAD		

Summary	
Sampling Date:	9/26/03
Analysis Date:	10/3/03
Analyst:	ANNA McELANEY
TDS (mg/l or g/m3):	2187.5
Density (g/cm3, tonne/m3):	1.002
Anion/Cation Ratio:	0.9999994
Carbon Dioxide:	
Oxygen:	
Comments:	

Analysis of Sample 136440 @ 75 °F

Anions	mg/l	meq/l	Cations	mg/l	meq/l
Chloride:	**88.0**	**2.48**	**Sodium:**	**167.3**	**7.28**
Bicarbonate:	**375.0**	**6.15**	**Magnesium:**	**99.0**	**8.14**
Carbonate:	**0.0**	**0.**	**Calcium:**	**328.0**	**16.37**
Sulfate:	**1122.0**	**23.36**	**Strontium:**	**4.0**	**0.09**
Phosphate:			**Barium:**	**0.1**	**0.**
Borate:			**Iron:**	**0.1**	**0.**
Silicate:			Potassium:	4.0	0.1
			Aluminum:		
Hydrogen Sulfide:			Chromium:		
pH at time of sampling:			Copper:		
pH at time of analysis:		7.34	Lead:		
pH used in Calculation:		**7.34**	Manganese:		
			Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite $CaCO_3$		Gypsum $CaSO_4 \cdot 2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$		CO_2 Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.61	24.13	-0.36	0.00	-0.43	0.00	-0.61	0.00	0.94	0.00	0.22
100	0	0.73	30.08	-0.37	0.00	-0.37	0.00	-0.60	0.00	0.79	0.00	0.3
120	0	0.86	36.72	-0.36	0.00	-0.28	0.00	-0.58	0.00	0.67	0.00	0.38
140	0	1.00	43.72	-0.34	0.00	-0.17	0.00	-0.54	0.00	0.57	0.00	0.47

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

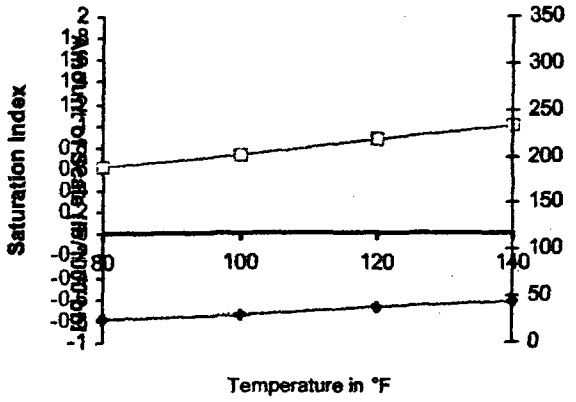
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

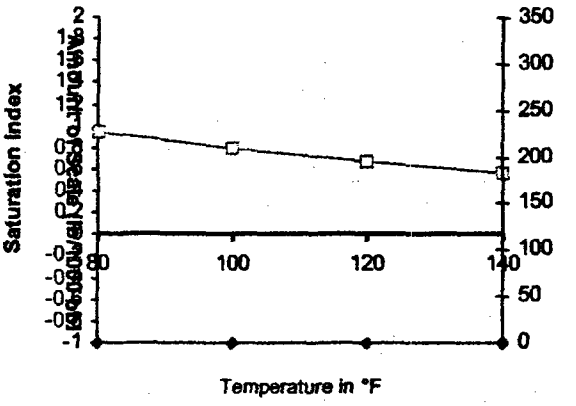
Scale Predictions from Baker Petrolite

Analysis of Sample 136440 @ 75 °F for YATES PETROLEUM INC, 10/3/03

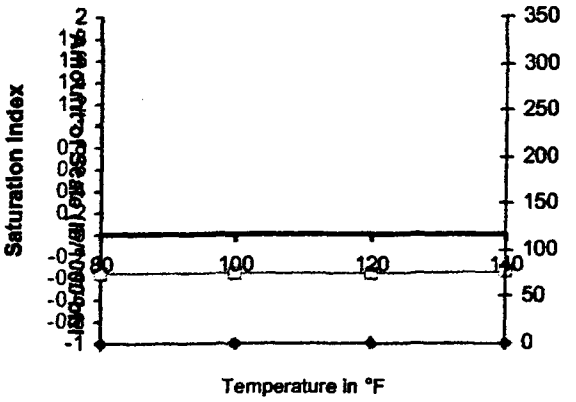
Calcite - CaCO3



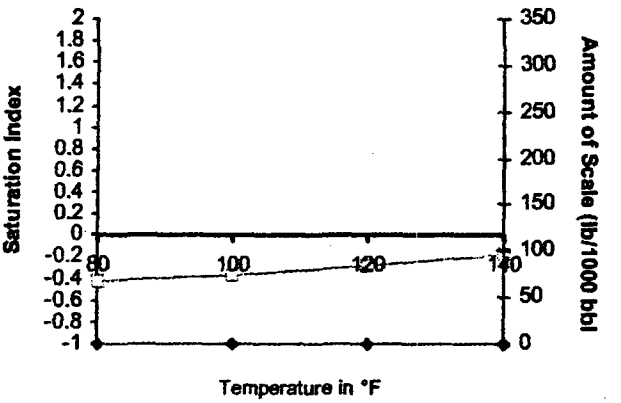
Barite - BaSO4



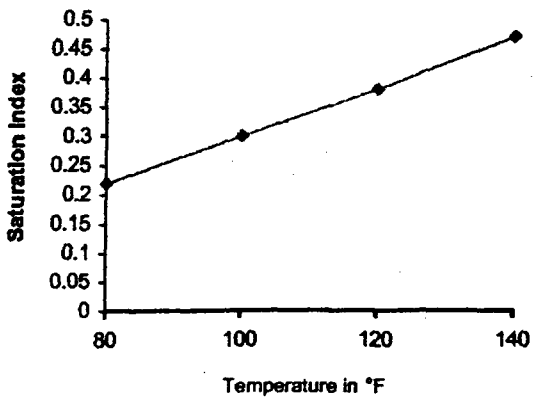
Gypsum - CaSO4*2H20



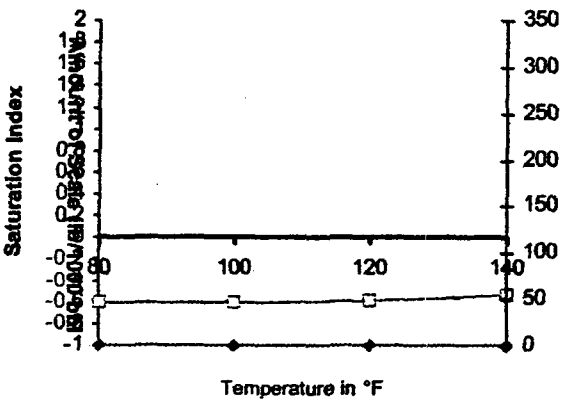
Anhydrite - CaSO4



Carbon Dioxide Partial Pressure



Celestite - SrSO4



Attachment D

Map ref #3

North Permian Basin Region
P.O. Box 740
Sundown, TX 79372-0740
(806) 229-8121
Lab Team Leader - Sheila Hernandez
(915) 495-7240

Water Analysis Report by Baker Petrolite

Company:	YATES PETROLEUM INC	Sales RDT:	33514
Region:	PERMIAN BASIN	Account Manager:	MIKE HARRISON (505) 910-9392
Area:	ARTESIA, NM	Sample #:	134886
Lease/Platform:	ROSS BY DAGGER DRAW TRANS.	Analysis ID #:	38450
Entity (or well #):	FRESH WATER WELL	Analysis Cost:	$40.00
Formation:	UNKNOWN		
Sample Point:	WATER TANK		

Summary	
Sampling Date:	9/26/03
Analysis Date:	10/3/03
Analyst:	ANNA McELANEY
TDS (mg/l or g/m3):	1452
Density (g/cm3, tonne/m3):	1.001
Anion/Cation Ratio:	0.9999999
Carbon Dioxide:	
Oxygen:	
Comments:	

Analysis of Sample 134886 @ 75 °F

Anions	mg/l	meq/l
Chloride:	**104.0**	**2.93**
Bicarbonate:	**335.0**	**5.49**
Carbonate:	**0.0**	**0.**
Sulfate:	**597.0**	**12.43**
Phosphate:		
Borate:		
Silicate:		
Hydrogen Sulfide:		
pH at time of sampling:		
pH at time of analysis:		7.79
pH used in Calculation:		**7.79**

Cations	mg/l	meq/l
Sodium:	**125.6**	**5.46**
Magnesium:	**60.0**	**4.94**
Calcium:	**188.0**	**9.38**
Strontium:	**5.0**	**0.11**
Barium:	**0.1**	**0.**
Iron:	**0.3**	**0.01**
Potassium:	37.0	0.95
Aluminum:		
Chromium:		
Copper:		
Lead:		
Manganese:		
Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite $CaCO_3$		Gypsum $CaSO_4 \cdot 2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$		CO_2 Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.86	21.00	-0.72	0.00	-0.79	0.00	-0.61	0.00	0.82	0.00	0.07
100	0	0.96	25.55	-0.72	0.00	-0.73	0.00	-0.60	0.00	0.67	0.00	0.1
120	0	1.07	30.45	-0.71	0.00	-0.64	0.00	-0.57	0.00	0.56	0.00	0.14
140	0	1.18	36.05	-0.69	0.00	-0.53	0.00	-0.54	0.00	0.46	0.00	0.18

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

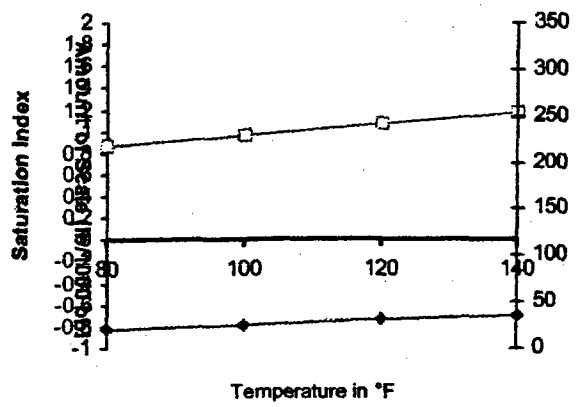
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

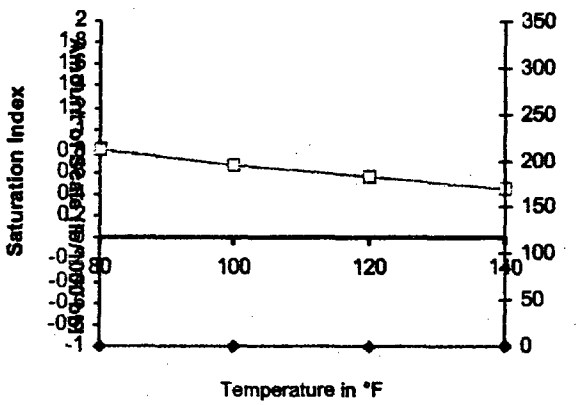
Scale Predictions from Baker Petrolite

Analysis of Sample 134886 @ 75 °F for YATES PETROLEUM INC, 10/3/03

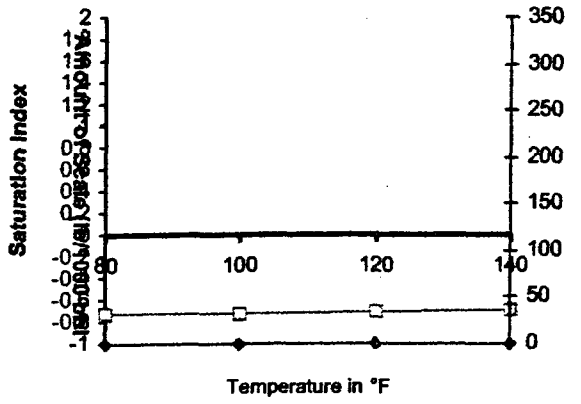
Calcite - CaCO3



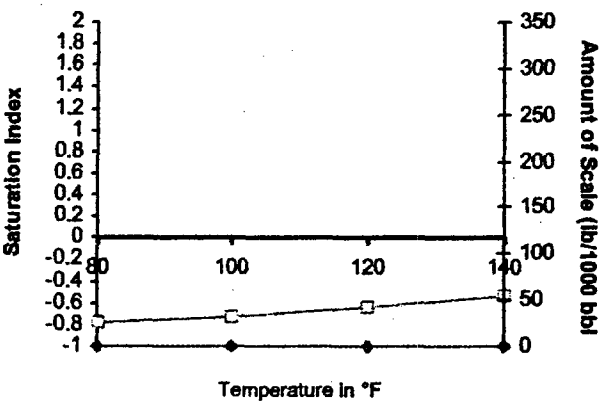
Barite - BaSO4



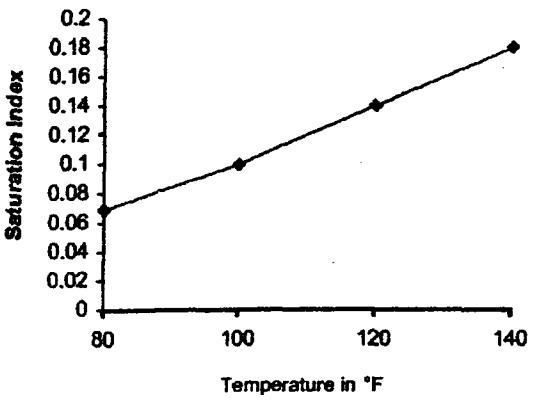
Gypsum - CaSO4*2H20



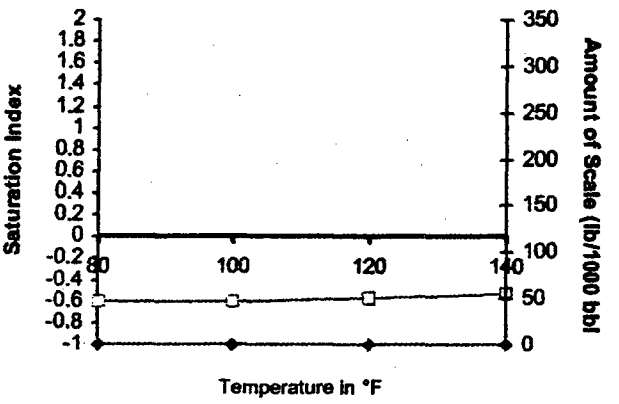
Anhydrite - CaSO4



Carbon Dioxide Partial Pressure



Celestite - SrSO4



Attachment D

Map ref #4

North Permian Basin Region
P.O. Box 740
Sundown, TX 79372-0740
(806) 229-8121
Lab Team Leader - Sheila Hernandez
(915) 495-7240

Water Analysis Report by Baker Petrolite

Company:	YATES PETROLEUM INC	Sales RDT:	33514
Region:	PERMIAN BASIN	Account Manager:	MIKE HARRISON (505) 910-9392
Area:	ARTESIA, NM	Sample #:	136443
Lease/Platform:	DAGGER DRAW OFFICE	Analysis ID #:	38451
Entity (or well #):	FRESH WATER WELL	Analysis Cost:	$40.00
Formation:	UNKNOWN		
Sample Point:	WELLHEAD		

Summary	
Sampling Date:	9/26/03
Analysis Date:	10/3/03
Analyst:	ANNA McELANEY
TDS (mg/l or g/m3):	3775.1
Density (g/cm3, tonne/m3):	1.004
Anion/Cation Ratio:	1.0000001
Carbon Dioxide:	
Oxygen:	
Comments:	

Analysis of Sample 136443 @ 75 °F

Anions	mg/l	meq/l	Cations	mg/l	meq/l
Chloride:	**658.0**	**18.56**	**Sodium:**	**440.5**	**19.16**
Bicarbonate:	**384.0**	**6.29**	**Magnesium:**	**129.0**	**10.61**
Carbonate:	**0.0**	**0.**	**Calcium:**	**560.0**	**27.94**
Sulfate:	**1592.0**	**33.15**	**Strontium:**	**7.0**	**0.16**
Phosphate:			**Barium:**	**0.1**	**0.**
Borate:			**Iron:**	**0.5**	**0.02**
Silicate:			Potassium:	4.0	0.1
			Aluminum:		
Hydrogen Sulfide:			Chromium:		
pH at time of sampling:			Copper:		
pH at time of analysis:		7.43	Lead:		
pH used in Calculation:		**7.43**	Manganese:		
			Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite $CaCO_3$		Gypsum $CaSO_4 \cdot 2H_2O$		Anhydrite $CaSO_4$		Celestite $SrSO_4$		Barite $BaSO_4$		CO_2 Press
°F	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	0.85	33.87	-0.13	0.00	-0.20	0.00	-0.36	0.00	0.94	0.00	0.18
100	0	0.96	39.81	-0.14	0.00	-0.14	0.00	-0.35	0.00	0.79	0.00	0.24
120	0	1.07	46.44	-0.13	0.00	-0.06	0.00	-0.33	0.00	0.67	0.00	0.31
140	0	1.20	53.08	-0.12	0.00	0.05	57.27	-0.30	0.00	0.57	0.00	0.39

Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.

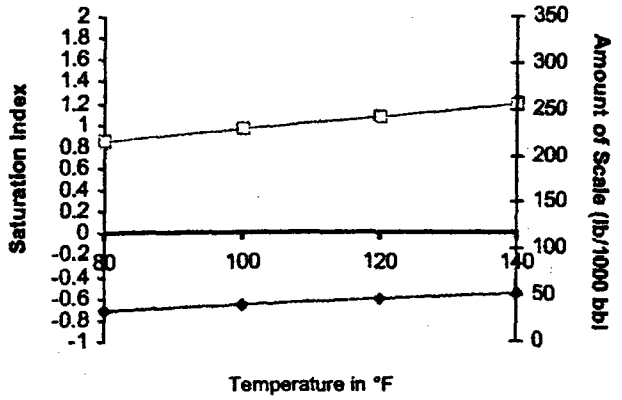
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

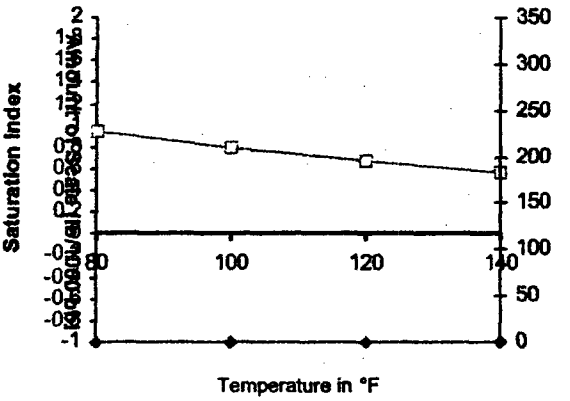
Scale Predictions from Baker Petrolite

Analysis of Sample 136443 @ 75 °F for YATES PETROLEUM INC, 10/3/03

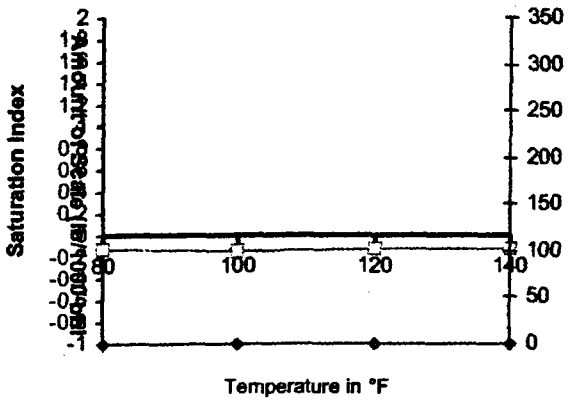
Calcite - CaCO3



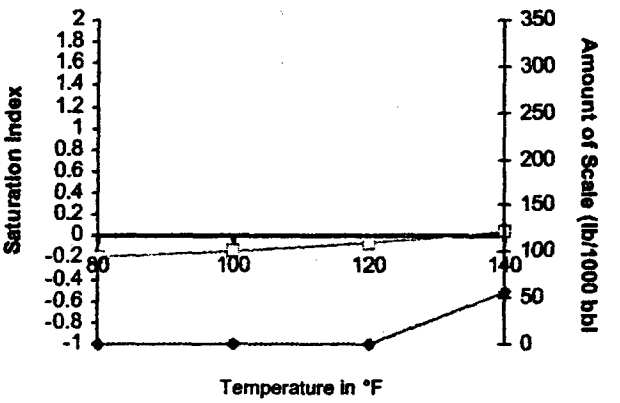
Barite - BaSO4



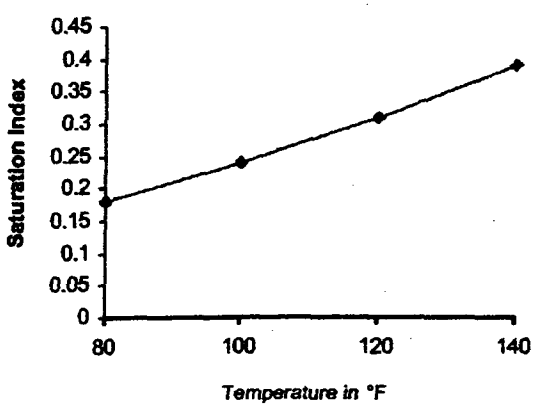
Gypsum - CaSO4*2H20



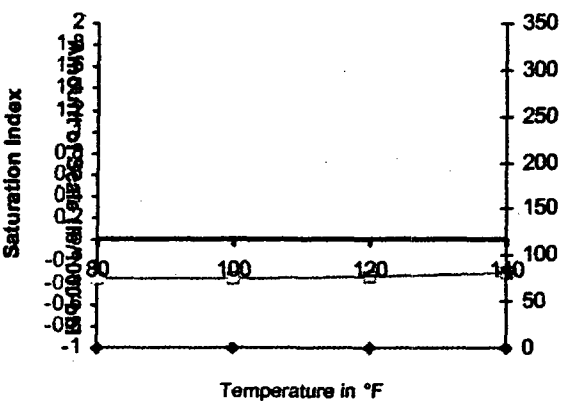
Anhydrite - CaSO4



Carbon Dioxide Partial Pressure



Celestite - SrSO4



Attachment E

C-108 Application for Authorization to Inject
Yates Petroleum Corporation

North Dagger Draw Waterflood Proposed Water Injection Wells

Ross EG Federal Com No. 5
Sec. 19-19S-25E, 860' FNL & 860' FEL

Ross EG Federal Com No. 12
Sec. 19-19S-25E, 1980' FNL & 660' FEL

Ross EG Federal Com No. 9
Sec. 19-19S-25E, 1980' FSL & 660' FEL

Dagger Draw 30N Com No. 15
Sec. 30-19S-25E, 660' FNL & 660' FEL

Dagger Draw 30N Com No. 17
Sec. 30-19S-25E, 1665' FNL & 660' FEL

Available engineering and geological data have been examined and no evidence of open faults of hydrologic connection between the injection zone and any underground sources of drinking water has been found.

John Humphrey
Geologist
Yates Petroleum Corporation

10/22/03
Date

Legal Notice

Yates Petroleum Corporation, 105 South Forth Street, Artesia, New Mexico 88210, has filed a form C-108 (Application for Authorization to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for five injection wells. The proposed wells are:

Ross EG Federal Com No. 5
Sec. 19-19S-25E, 860' FNL & 860' FEL

Ross EG Federal Com No. 12
Sec. 19-19S-25E, 1980' FNL & 660' FEL

Ross EG Federal Com No. 9
Sec. 19-19S-25E, 1980' FSL & 660' FEL

Dagger Draw 30N Com No. 15
Sec. 30-19S-25E, 660' FNL & 660' FEL

Dagger Draw 30N Com No. 17
Sec. 30-19S-25E, 1665' FNL & 660' FEL

All wells are in Eddy County, New Mexico. They will be used as water injection wells for the purpose of waterflooding the Canyon Dolomite. Water from the Canyon Dolomite will be re-injected into the Canyon Dolomite at a depth between 7620' and 7908' with a maximum pressure of 1520 psi. and a maximum rate of 25000 BWPD (5000 BWPD per well).

All interested parties opposing the aforementioned must file objections or requests for a hearing with the Oil Conservation Division, 1220 South Saint Francis Drive, Santa Fe, New Mexico 87505-5472, within 15 days. Additional information can be obtained by contacting Sam Brandon at (505) 748-4281.