

DHC 11/8/99

**devon**

**ENERGY CORPORATION**

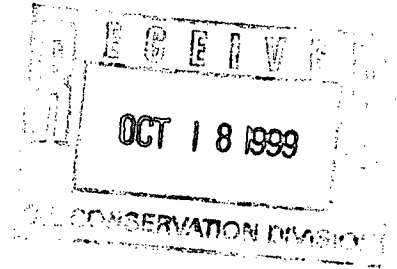
20 North Broadway, Suite 1500  
Oklahoma City, Oklahoma 73102-8260

Telephone 405/235-3611  
FAX 405/552-4550

October 15, 1999

**Certified Mail No. Z 068 588 960**

2507



STATE OF NEW MEXICO  
Energy, Minerals and Natural Resources Dept.  
Oil Conservation Division  
2040 S. Pacheco  
Santa Fe, NM 87505-6429

RE: Downhole Commingling  
Kaiser B #6  
Section F-18-18S-27E  
API #30-015-30132  
Red Lake (Q-GB-SA) and  
Red Lake (Glorieta-Yeso) Fields  
Eddy County, NM

Gentlemen:

Concerning the referenced, enclosed please find the Form C-107A Application for Downhole Commingling and attachments (and three copies).

Please direct inquiries concerning this report to Ernie Buttross at (405) 235-3611, X4509.

Yours truly,

DEVON ENERGY CORPORATION (NEVADA)

A handwritten signature in cursive script, appearing to read "Tonja Rutelonis".

Tonja Rutelonis  
Engineering Tech.

/trr  
Enclosures

DISTRICT I  
P.O. Box 1980, Hobbs, NM 88241-1980  
DISTRICT II  
811 South First St., Artesia, NM 88210-2835  
DISTRICT III  
1000 Rio Brazos Rd, Aztec, NM 87410-1693  
DISTRICT IV  
2040 S. Pacheco, Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 S. Pacheco  
Santa Fe, New Mexico 87505-6429

Form C-107-A  
Revised August 1999

APPROVAL PROCESS:

\_\_\_ Administrative \_\_\_ Hearing

EXISTING WELLBORE

\_\_\_ YES \_\_\_ NO

APPLICATION FOR DOWNHOLE COMMINGLING

Devon Energy Corporation (Nevada)

20 N. Broadway, Suite 1500, Oklahoma City OK 73102-8260

Operator

Address

Kaiser B

6

F - 18-18S-27E

Eddy

Lease

Well No.

Unit Ltr. - Sec - Twp - Rge

County

Spacing Unit Lease Types: (check 1 or more)

OGRID NO. 6137

Property Code

22905

API NO.

30-015-30132

Federal

State

(and/or) Fee

X

| The following facts are submitted in support of downhole commingling:                                                                                                                                | Upper Zone                                            | Intermediate Zone | Lower Zone                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-------------------|-----------------------------------------------------|
| 1. Pool Name and Pool Code                                                                                                                                                                           | Red Lake (Q-GB-SA)                                    |                   | Red Lake (Glor-Yeso)                                |
| 2. Top and Bottom of Pay Section (Perforations)                                                                                                                                                      | To be perforated 1624'-1987'                          |                   | 2716'-3024'                                         |
| 3. Type of production (Oil or Gas)                                                                                                                                                                   | Oil                                                   |                   | Oil                                                 |
| 4. Method of Production (Flowing or Artificial Lift)                                                                                                                                                 | Artificial Lift                                       |                   | Artificial Lift                                     |
| 5. Bottomhole Pressure<br>Oil Zones - Artificial Lift:<br>Estimated Current<br>Gas & Oil - Flowing:<br>Measured Current<br>All Gas Zones:<br>Estimated Or Measured Original                          | a. (Current)<br>50 psi producing BHP<br>b. (Original) | a.<br><br>b.      | a.<br>100 psi producing BHP<br>b.                   |
| 6. Oil Gravity ( $^{\circ}$ API) or Gas BTU Content                                                                                                                                                  | 38.5 $^{\circ}$                                       |                   | 42.0 $^{\circ}$                                     |
| 7. Producing or Shut-In?                                                                                                                                                                             | Awaiting perfs                                        |                   | Producing                                           |
| Production Marginal? (yes or no)                                                                                                                                                                     | Expected to be marginal                               |                   | Yes                                                 |
| • If Shut-In, give date and oil/gas/water rates of last production<br>Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data | Date: N/A<br>Rates:                                   | Date:<br>Rates:   | Date: N/A<br>Rates:                                 |
| • If Producing, give date and oil/gas/water rates of recent test (within 60 days)                                                                                                                    | Date: N/A<br>Rates:                                   | Date:<br>Rates:   | Date: 10/3/99<br>Rates: 14 BOPD, 60 MCFGPD, 95 BWPD |
| 8. Fixed Percentage Allocation Formula - % for each zone (total of %'s to equal 100%)                                                                                                                | Oil: 49 % Gas: 49 %                                   | Oil: % Gas: %     | Oil: 51 % Gas: 51 %                                 |

9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.

10. Are all working, overriding, and royalty interests identical in all commingled zones? ☒ Yes \_\_\_ No  
If not, have all working, overriding, and royalty interests been notified by certified mail? \_\_\_ Yes \_\_\_ No

11. Will cross-flow occur? \_\_\_ Yes ☒ No If yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. \_\_\_ Yes \_\_\_ No (If No, attach explanation)

12. Are all produced fluids from all commingled zones compatible with each other? ☒ Yes \_\_\_ No

13. Will the value of production be decreased by commingling? \_\_\_ Yes ☒ No (If Yes, attach explanation)

14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this application. ☒ Yes \_\_\_ No

15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S).

16. ATTACHMENTS:

- \* C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
- \* Production curve for each zone for at least one year. (If not available, attach explanation.)
- \* For zones with no production history, estimated production rates and supporting data.
- \* Data to support allocation method or formula.
- \* Notification list of working, overriding, and royalty interests for uncommon interest cases.
- \* Any additional statements, data, or documents required to support commingling.

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

SIGNATURE Tonja Rutelonis TITLE Engineering Technician DATE 10/14/99

TYPE OR PRINT NAME Tonja Rutelonis TELEPHONE NO. (405) 552-4515

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

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised February 10, 1994  
Instruction on back  
Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

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

OIL CONSERVATION DIVISION

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

|               |                          |                                                |
|---------------|--------------------------|------------------------------------------------|
| API Number    | Pool Code                | Pool Name                                      |
|               |                          | Red Lake (Q-GB-SA) ? Red Lake; Glorieta - Yeso |
| Property Code | Property Name            | Well Number                                    |
|               | Kaiser "B"               | 6                                              |
| OGRID No.     | Operator Name            | Elevation                                      |
|               | Devon Energy Corporation | 3290'                                          |

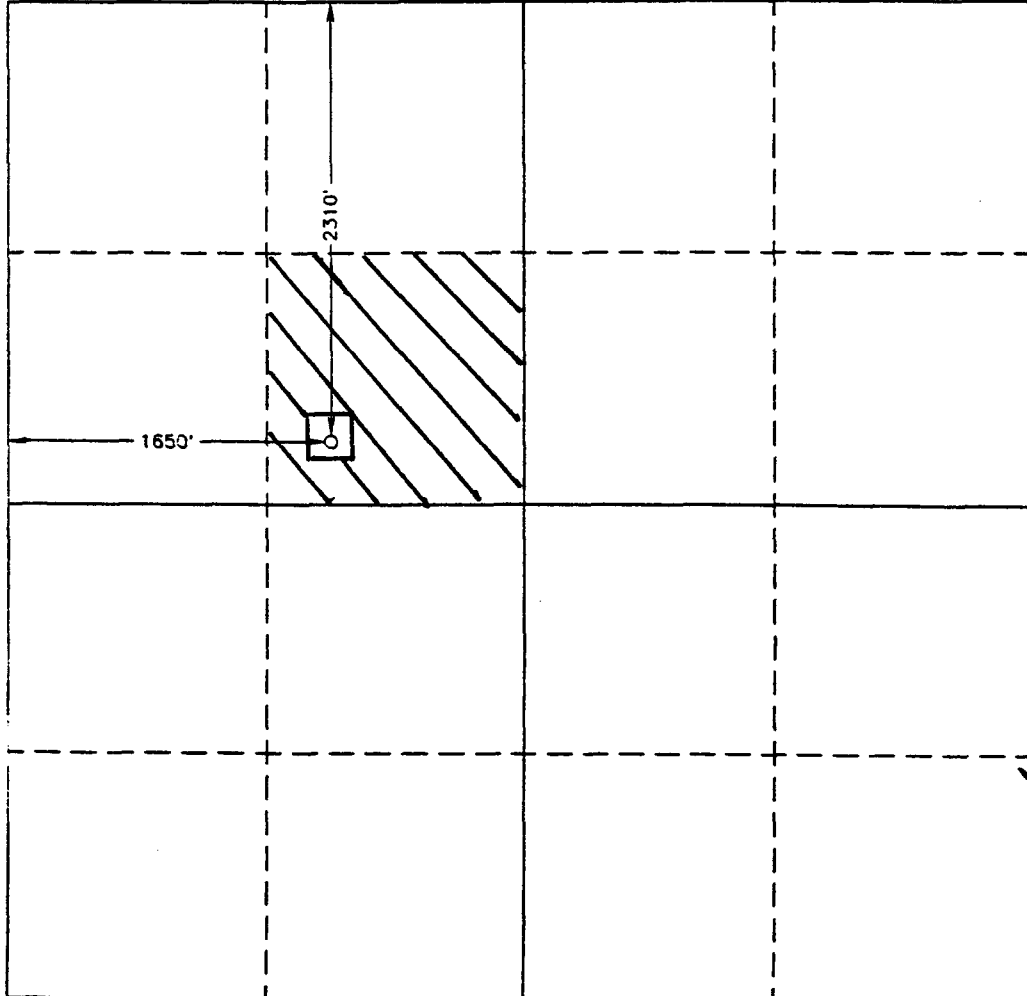
Surface Location

|               |         |          |       |         |               |                  |               |                |        |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
| F             | 18      | 18 S     | 27 E  |         | 2310          | North            | 1650          | West           | Eddy   |

Bottom Hole Location If Different From Surface

|                 |                 |                    |           |         |               |                  |               |                |        |
|-----------------|-----------------|--------------------|-----------|---------|---------------|------------------|---------------|----------------|--------|
| UL or lot No.   | Section         | Township           | Range     | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|                 |                 |                    |           |         |               |                  |               |                |        |
| Dedicated Acres | Joint or Infill | Consolidation Code | Order No. |         |               |                  |               |                |        |

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

|                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><u>E. L. Buttross Jr.</u><br/>Signature</p> <p><u>E. L. Buttross, Jr.</u><br/>Printed Name</p> <p><u>District Engineer</u><br/>Title</p> <p><u>February 18, 1998</u><br/>Date</p>                                                                                                                                                                                                 |
|                                                                                     | <p><b>SURVEYOR CERTIFICATION</b></p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p><u>February 6, 1998</u><br/>Date Surveyed</p> <p><u>GARY L. JONES</u><br/>Signature</p> <p><u>Professional Surveyor</u><br/>Title</p> <p><u>W.O. No. 8028</u><br/>Certification No.</p> <p><u>GARY L. JONES</u><br/>Name</p> <p><u>7977</u><br/>Number</p> <p><b>BASIN SURVEYS</b></p> |

## Kaiser B #6

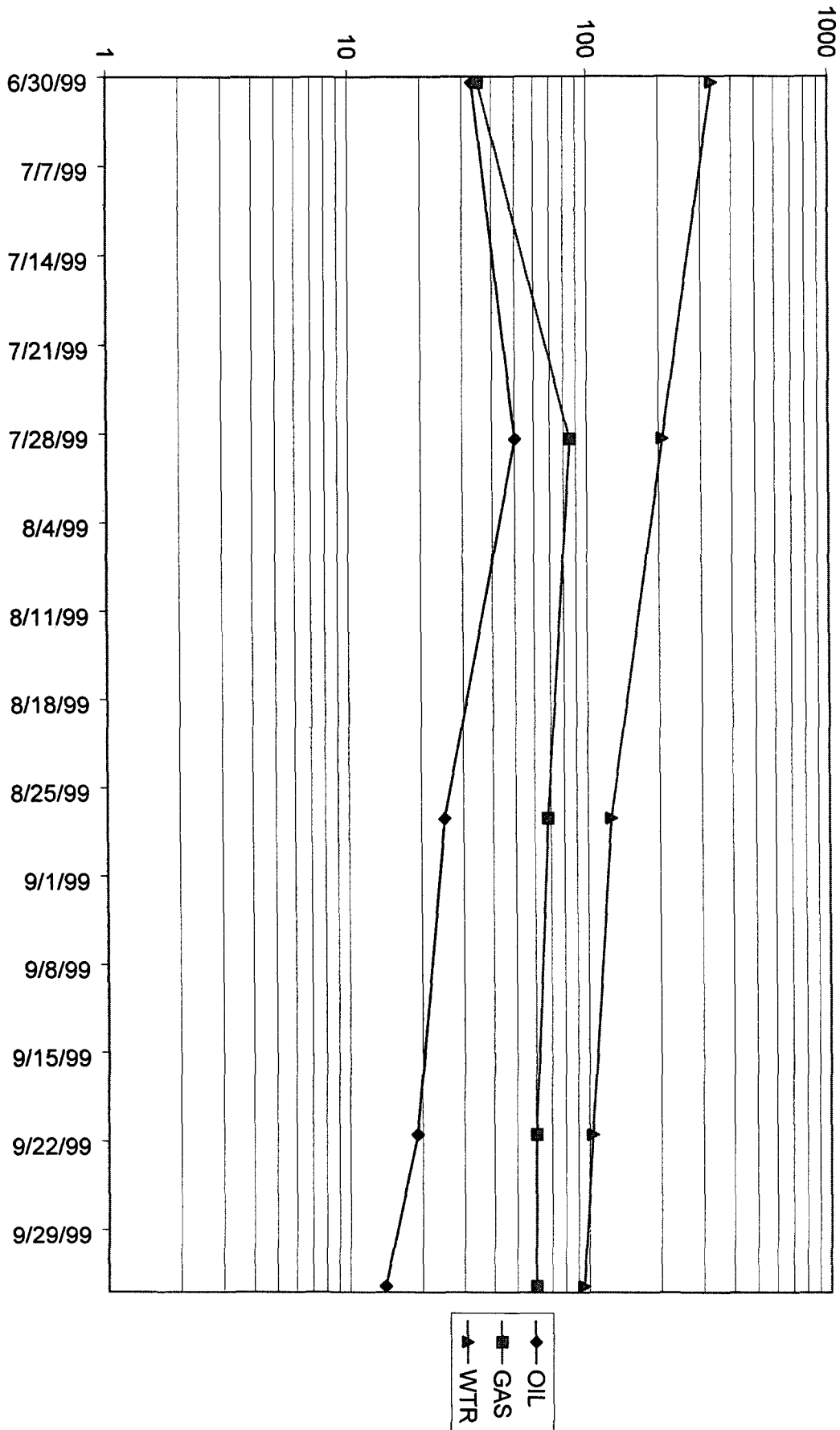
### Allocation Formula

| Well Name   | Producing Formation  | *Daily Production Test |            |
|-------------|----------------------|------------------------|------------|
|             |                      | 3-month Average        | % of Total |
| Kaiser B #6 | Red Lake (Glor-Yeso) | 19 BO/63 MCF/108 BW    | 51 %       |
| Kaiser B #1 | Red Lake (Q-GB-SA)   | 18 BO/24 MCF/26 BW     | 49 %       |

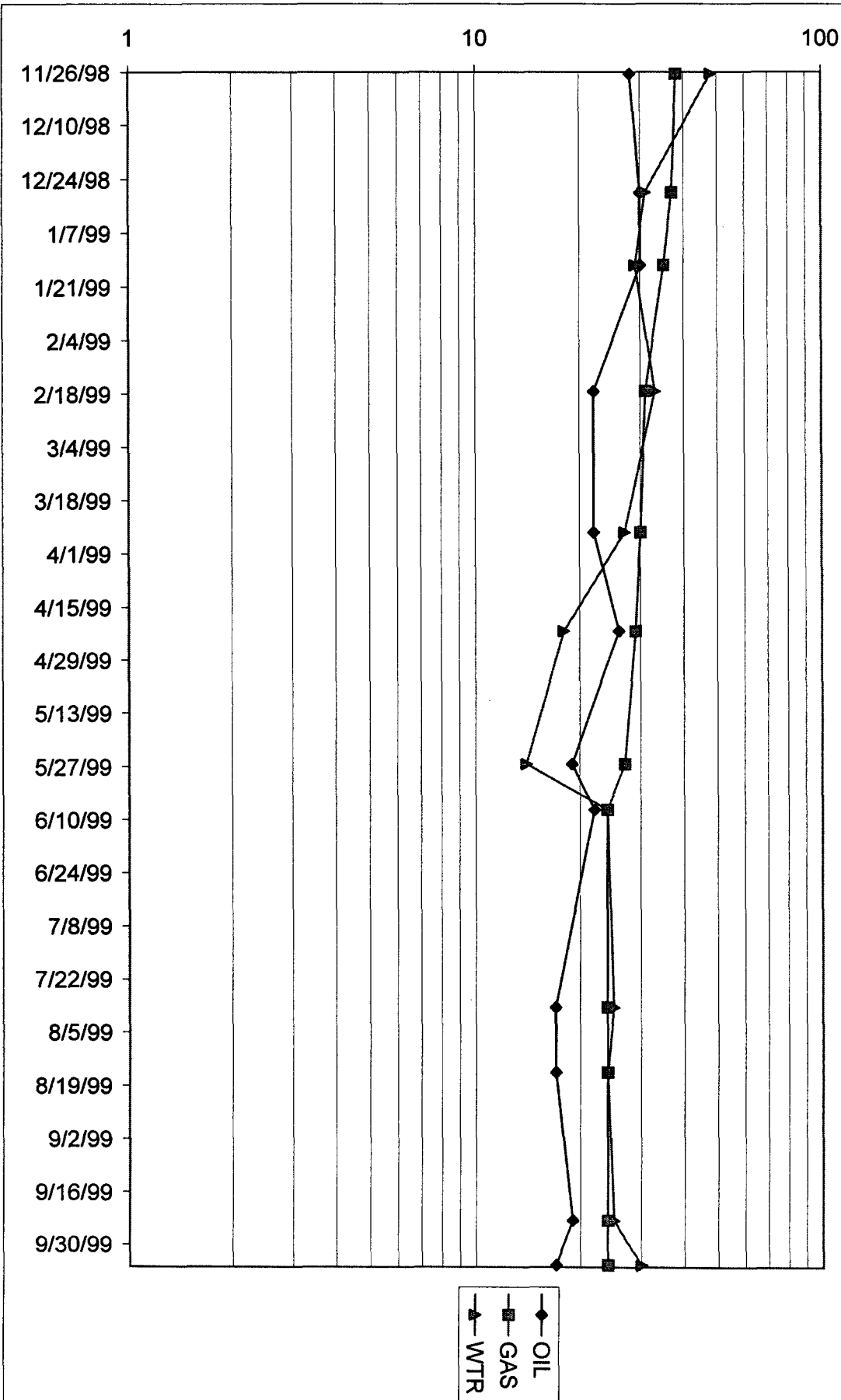
\* From attached production plots

The above production test represents stable production from a San Andres producer (Kaiser B #1) and a Yeso producer (Kaiser B #6). We believe these rates of production represent an acceptable means to allocate production. **ARCO has previously received approval for downhole commingling in these fields utilizing a similar allocation method.**

# Kaiser B #6 (Yeso)

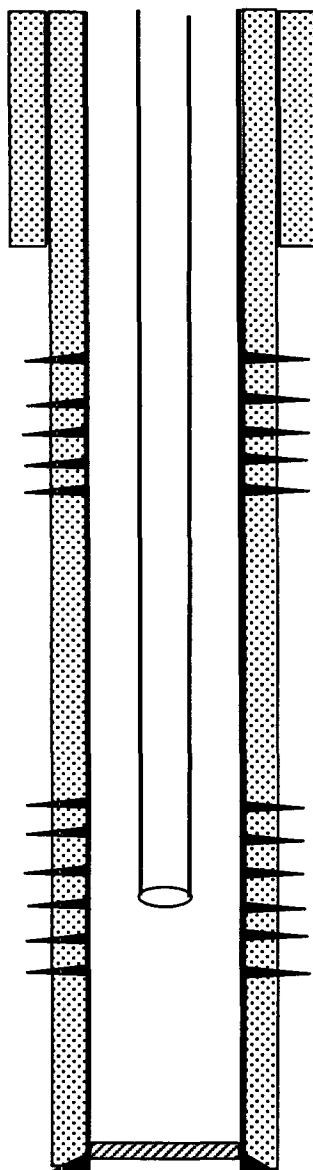


# **Kaiser B-1** **(San Andres)**



# DEVON ENERGY CORPORATION - WELLBORE SCHEMATIC

|                                                     |            |                           |                                |       |                    |           |
|-----------------------------------------------------|------------|---------------------------|--------------------------------|-------|--------------------|-----------|
| WELL NAME: Kaiser B #6                              |            |                           | FIELD: Red Lake; Glorieta-Yeso |       |                    |           |
| LOCATION: 2310' FNL & 1650' FWL, Section 18-18S-27E |            |                           | COUNTY: Eddy                   |       | STATE: NM          |           |
| ELEVATION: GL = 3290'                               |            |                           | SPUD DATE: 12/13/98            |       | COMP DATE: 6/12/99 |           |
| API#: 30-015-30132                                  |            | PREPARED BY: T. Rutelonis |                                |       | DATE: 10/14/99     |           |
|                                                     | DEPTH      | SIZE                      | WEIGHT                         | GRADE | THREAD             | HOLE SIZE |
| CASING:                                             | 0' - 1000' | 8-5/8"                    | 24#                            | J-55  |                    | 12-1/4"   |
| CASING:                                             | 0' - 3197' | 5 1/2"                    | 15.5#                          | J-55  |                    | 7-7/8"    |
| CASING:                                             |            |                           |                                |       |                    |           |
| TUBING:                                             | 0' - 2911' | 2-7/8"                    |                                |       |                    |           |
| TUBING:                                             |            |                           |                                |       |                    |           |



CURRENT



PROPOSED

OPERATOR: DEVON ENERGY CORPORATION

8-5/8" Casing, Set @ 1000' w/ 650 sxs cmt. TOC @ surface

**San Andres Perforations:**

1624'-1987' (25 holes)

2-7/8" tbg w/ SN @ 2911'

**Yeso Perforations:**

2716'-3024' (25 holes)

PBTD @ 3142'

5 1/2" casing, set @ 3197' w/ 639 sxs cmt. TOC @ surf.

TD @ 3198'

# OIL CONSERVATION DIVISION

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

WELL API NO.  
**30-015-30132**

5. Indicate Type of Lease

STATE ☐ FEE ☒

6. State Oil & Gas Lease No.

## WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well:

OIL WELL ☒ GAS WELL ☐ DRY ☐ OTHER \_\_\_\_\_

b. Type of Completion:

NEW WELL ☒ WORK OVER ☐ DEEPEN ☐ PLUG BACK ☐ DIFF RESVR ☐ OTHER \_\_\_\_\_

2. Name of Operator

**DEVON ENERGY CORPORATION (NEVADA)**

3. Address of Operator

**20 NORTH BROADWAY, SUITE 1500, OKLAHOMA CITY, OKLAHOMA 73102 (405) 235-3611**

4. Well Location

Unit Letter **F-2310** Feet From The **North** \_\_\_\_\_ Line and **1650** Feet From The **West** \_\_\_\_\_ Line

Section **18**

Township **18S**

Range **27E**

NMPM

Eddy

County

10. Date Spudded  
12/13/98

11. Date T.D. Reached  
12/21/98

12. Date Compl. (Ready To Prod.)  
6/12/99

13. Elevations (DF, RKB, RT, GR, etc.)  
KB 3299'; GL 3290'; DF 3298'

14. Elev. Casinghead

15. Total Depth, Md & Tvd  
3198'

16. Plug Back T.D.  
3142'

17. If Multiple Compl., How  
Many Zones?

18. Intervals Drilled By

Rotary Tools

Cable Tools

19. Producing Interval(s), Of This Completion—Top, Bottom, Name  
**Yeso 2716'-3024'**

20. Was Directional Survey Made  
No

21. Type Electric And Other Logs Run

**LDT/CNL/DLL/MSFL/GR; CBL**

22. Was Well Cored

No

23.

## CASING RECORD (Report all strings set in well)

| CASING SIZE  | WEIGHT, LB./FT. | DEPTH SET | HOLE SIZE | CEMENTING RECORD | AMOUNT PULLED  |
|--------------|-----------------|-----------|-----------|------------------|----------------|
| 13 3/8" H-40 | 48#             | 202'      | 17 1/2"   | 300 sx cl "C"    | TOC surf, none |
| 8 5/8" J-55  | 24#             | 1000'     | 12 1/4"   | 650 sx cl "C"    | TOC surf, none |
| 5 1/2" J-55  | 15.5#           | 3197'     | 7 7/8"    | 639 sx cl "C"    | TOC surf, none |

24.

## LINER RECORD

| SIZE | TOP | BOTTOM | SACKS CEMENT | SCREEN |
|------|-----|--------|--------------|--------|
|      |     |        |              |        |
|      |     |        |              |        |

25.

## TUBING RECORD

| SIZE   | DEPTH SET | PACKER SET |
|--------|-----------|------------|
| 2 7/8" | 2911'     |            |
|        |           |            |

26. Perforation record (interval, size and number)

**YESO**

**2716'-3024' (25 - .40" holes)**

27. ACID SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

| DEPTH INTERVAL | AMOUNT AND KIND OF MATERIAL USED |
|----------------|----------------------------------|
| 2716'-3024'    | 2500 gals 15% NE-FE acid         |
| 2716'-3024'    | 110,000 gals linear gelled wtr + |
|                | 4000# 100 mesh sd + 80,000#      |
|                | Brady sd + 31,000# CRC sd        |

28

## PRODUCTION

Date First Production  
6/23/99

Productions Method I (Flowing, gas lift, pumping—Size and type of pump)  
**Pumping (2-1/2" x 2" x 16" RWTC pump)**

Well Status (Prod or Shut-In)  
**Producing**

Date Of Test  
7/10/99

Hours Tested  
24

Choke Size

Prod'n For  
Test Period

Oil—Bbl.  
80

Gas—Mcf.  
60

Water—Bbl.  
248

Gas-Oil Ratio  
750/1

Flow. Tubing Press.

Casing Pressure

Calculated 24-  
Hour Rate

Oil—Bbl.  
80

Gas—MCF.  
60

Water—Bbl.  
248

Oil Gravity-API (Corr.)  
42

29. Disposition Of Gas (Sold, Used For Fuel, Vented, Etc.)  
**Sold**

Test Witnessed By  
Danny Hokett

30. List Of Attachments

**Logs, Deviation Surveys**

31. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature

Printed **TONJA RUTELONIS**

Name

Title **ENGINEERING TECHNICIAN** Date **7/15/99**

FILE  
COPY

DISTRIBUTED

7-19-99



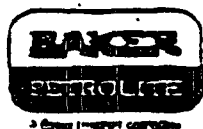
Analysis: 22526

## Water Analysis Report from Baker Petrolite

### Summary of Mixing Waters

| Sample Number           | 105254                  | 114048           |
|-------------------------|-------------------------|------------------|
| Company                 | DEVON ENERGY            | DEVON ENERGY     |
| Lease                   | FALCON FED (SAN ANDRES) | LOGAN 35 (YESO)  |
| Well                    | INJECTION PLANT         | FEDERAL # 9      |
| Sample Location         | FWKC                    | WELLHEAD         |
| <b>Anions (mg/L)</b>    |                         |                  |
| Chloride                | 113.307                 | 103.984          |
| Bicarbonate             | 834                     | 1,000            |
| Carbonate               | 0.00                    | 0.00             |
| Sulfate                 | 4,235                   | 4,364            |
| Phosphate               | 0.00                    | 0.00             |
| Borate                  | 0.00                    | 0.00             |
| Silicate                | 0.00                    | 0.00             |
| <b>Cations (mg/L)</b>   |                         |                  |
| Sodium                  | 72,258                  | 68,533           |
| Magnesium               | 491                     | 387              |
| Calcium                 | 2,287                   | 2,082            |
| Strontium               | 49.0                    | 39.0             |
| Barium                  | 0.10                    | 0.30             |
| Iron                    | 0.20                    | 5.00             |
| Potassium               | 390                     | 302              |
| Aluminum                | 0.00                    | 0.00             |
| Chromium                | 0.00                    | 0.00             |
| Copper                  | 0.00                    | 0.00             |
| Lead                    | 0.00                    | 0.00             |
| Manganese               | 0.00                    | 0.00             |
| Nickel                  | 0.00                    | 0.00             |
| Anion/Cation Ratio      | 1.00                    | 1.00             |
| TDS (mg/L)              | 194,151                 | 179,478          |
| Density (g/cm)          | 1.13                    | 1.12             |
| Sampling Date           | 7/20/98                 | 12/8/98          |
| Account Manager         | CURRY FRUIT             | STEVE STROUD     |
| Analyst                 | SHEILA DEARMAN          | SHEILA HERNANDEZ |
| Analysis Date           |                         | 12/19/98         |
| pH at time of sampling  | 6.70                    | 6.10             |
| pH at time of analysis  |                         |                  |
| pH used in Calculations | 6.70                    | 6.10             |

PRINTED WARRANTY, DISCLOSURE AND LIMITATION OF LIABILITY ARE FOUND ON THE BACK OF THIS SHEET



Analysis: 22526

## Water Analysis Report from Baker Petrolite

Mixes at 80°F and 0 psi

### Predictions of Carbon Dioxide Pressure, Saturation Index and Amount of Scale in lb/1000bbl

| Mix Waters |        | CO <sub>2</sub> | Calcite<br>CaCO <sub>3</sub> |        | Gypsum<br>CaSO <sub>4</sub> ·2H <sub>2</sub> O |        | Anhydrite<br>CaSO <sub>4</sub> |        | Celestite<br>SrSO <sub>4</sub> |        | Barite<br>BaSO <sub>4</sub> |        |
|------------|--------|-----------------|------------------------------|--------|------------------------------------------------|--------|--------------------------------|--------|--------------------------------|--------|-----------------------------|--------|
| 105254     | 114043 | psi             | Index                        | Amount | Index                                          | Amount | Index                          | Amount | Index                          | Amount | Index                       | Amount |
| 0%         | 100%   | 6.06            | 0.19                         | 33.0   | -0.04                                          |        | -0.02                          |        | -0.09                          |        | 0.92                        | 0.14   |
| 25%        | 75%    | 4.93            | 0.22                         | 33.3   | -0.04                                          |        | -0.02                          |        | -0.09                          |        | 0.92                        | 0.11   |
| 50%        | 50%    | 3.56            | 0.28                         | 35.3   | -0.05                                          |        | -0.02                          |        | -0.07                          |        | 0.70                        | 0.08   |
| 100%       | 0%     | 0.96            | 0.66                         | 45.5   | -0.06                                          |        | -0.03                          |        | -0.07                          |        | 0.36                        | 0.03   |

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: CO<sub>2</sub> Pressure is absolute pressure. Total Pressure is gauge pressure.

PRODUCT WARRANTY, DISCLAIMER AND LIMITATION OF LIABILITY ARE FOUND ON THE BACK OF THIS SHEET

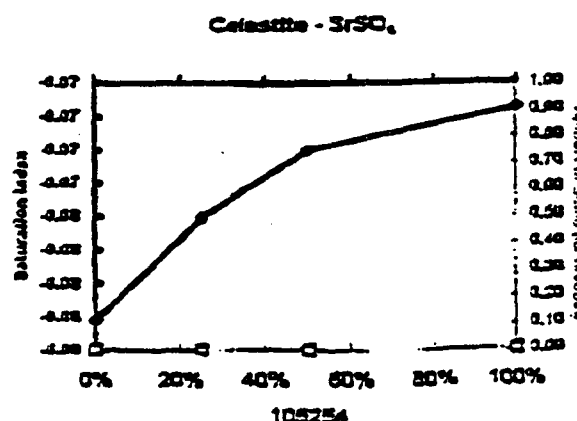
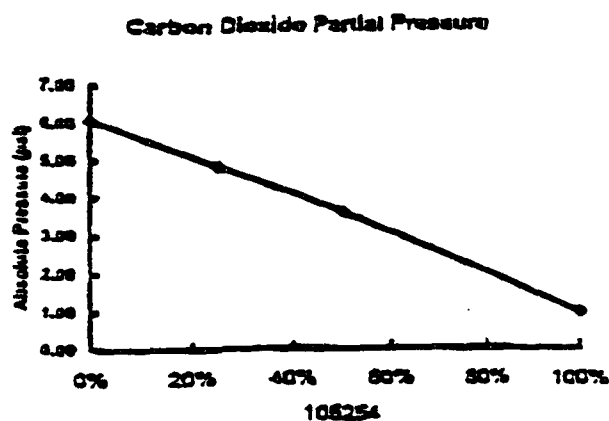
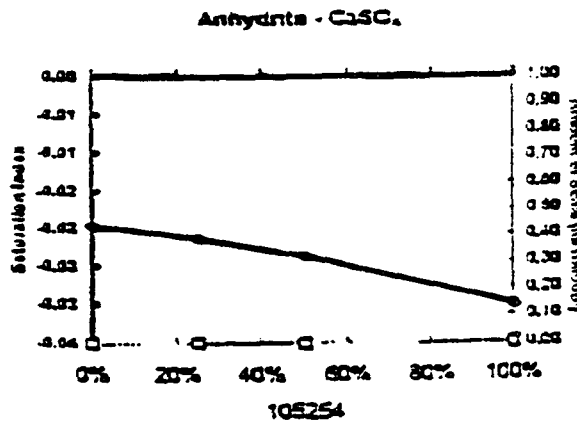
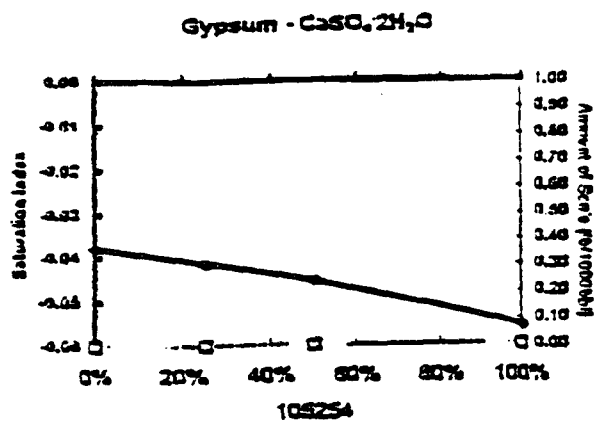
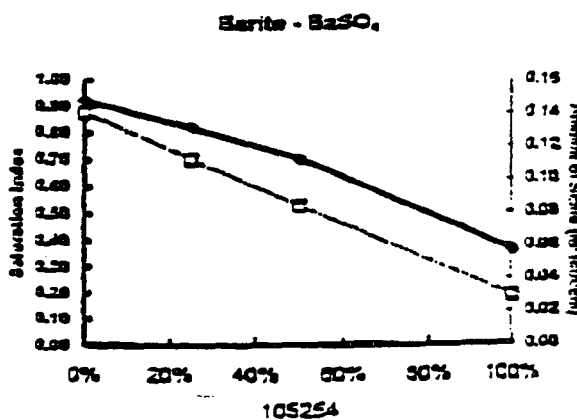
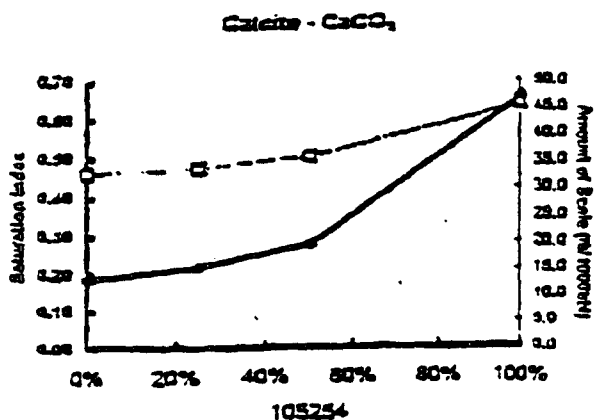
Sent by: BAKER PETROLITE 19155637942

01/06/99 2:27PM Job 358

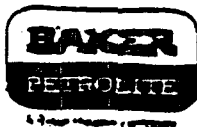
Analysis: 22526

# Mixture Predictions from Baker-Petrolite

105254 with 114048 at 80°F and 0 psi



PRODUCT WARRANTIES, TEST LIMITS AND LIMITATION OF LIABILITY ARE FOUND ON THE BACK OF THIS SHEET



Analysis: 22526

## Water Analysis Report from Baker Petrolite

Mixes at 100°F and 0 psi

### Predictions of Carbon Dioxide Pressure, Saturation Index and Amount of Scale in lb/1000bbl

| Mix Waters |        | CO <sub>2</sub> | Calcite<br>CaCO <sub>3</sub> |        | Gypsum<br>CaSO <sub>4</sub> ·2H <sub>2</sub> O |        | Anhydrite<br>CaSO <sub>4</sub> |        | Celestite<br>SrSO <sub>4</sub> |        | Barite<br>BaSO <sub>4</sub> |        |
|------------|--------|-----------------|------------------------------|--------|------------------------------------------------|--------|--------------------------------|--------|--------------------------------|--------|-----------------------------|--------|
|            |        | psi             | Index                        | Amount | Index                                          | Amount | Index                          | Amount | Index                          | Amount | Index                       | Amount |
| 105254     | 114048 |                 |                              |        |                                                |        |                                |        |                                |        |                             |        |
| 0%         | 100%   | 7.42            | 0.28                         | 49.0   | -0.12                                          |        | -0.03                          |        | -0.11                          |        | 0.72                        | 0.13   |
| 25%        | 75%    | 5.91            | 0.31                         | 47.5   | -0.12                                          |        | -0.03                          |        | -0.11                          |        | 0.51                        | 0.10   |
| 50%        | 50%    | 4.36            | 0.36                         | 47.4   | -0.12                                          |        | -0.04                          |        | -0.10                          |        | 0.50                        | 0.07   |
| 100%       | 0%     | 1.21            | 0.72                         | 52.3   | -0.14                                          |        | -0.05                          |        | -0.10                          |        | 0.15                        | 0.02   |

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: CO<sub>2</sub> Pressure is absolute pressure. Total Pressure is gauge pressure.

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Sent by: BAKER PETROLITE 19155637942

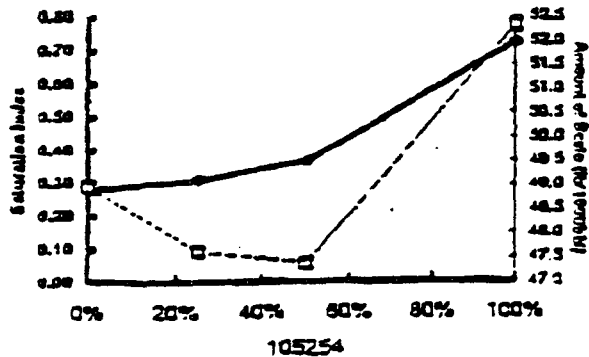
01/06/99 2:28PM Job 389

Page 8/14

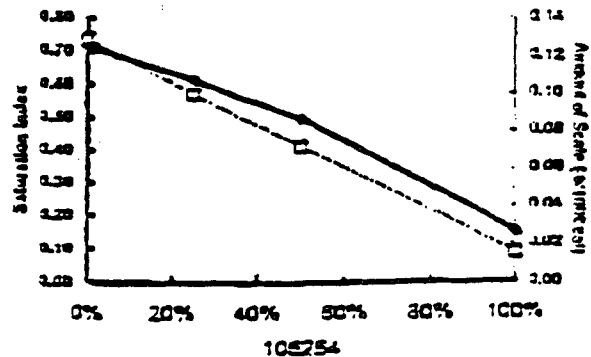
# MINOR PREDICTIONS FROM BAKER-PETROLITE

105254 with 114048 at 100°F and 0 psi

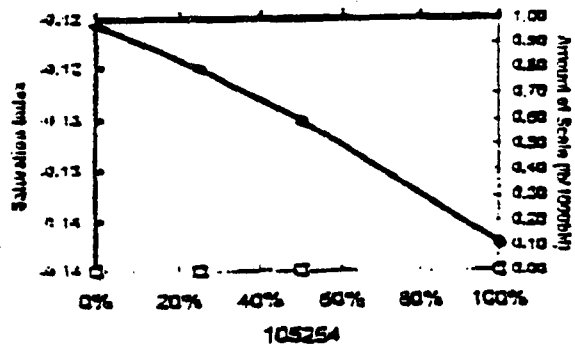
Calcite -  $\text{CaCO}_3$



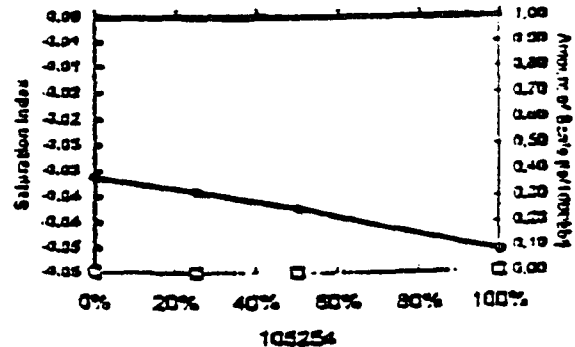
Barite -  $\text{BaSO}_4$



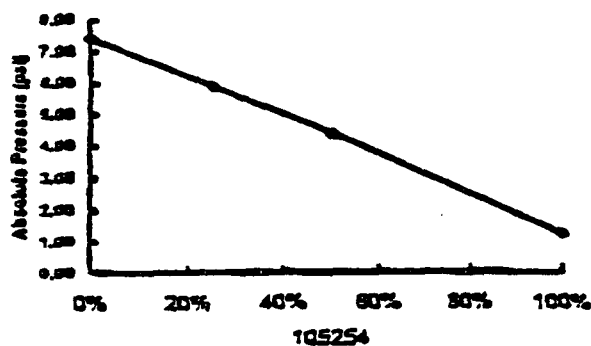
Gypsum -  $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



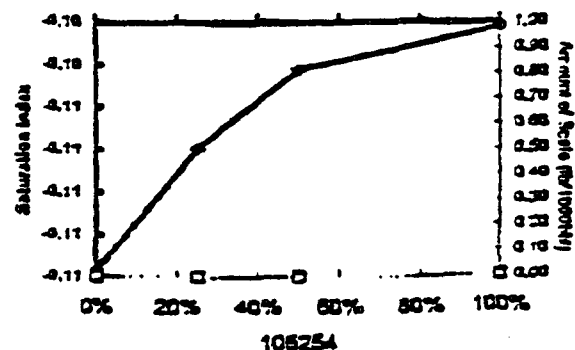
Anhydrite -  $\text{CaSO}_4$



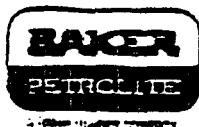
Carbon Dioxide Partial Pressure



Celestite -  $\text{SrSO}_4$



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Analysis: 22526

## Water Analysis Report from Baker Petrolite

Mixes at 120°F and 0 psi

### Predictions of Carbon Dioxide Pressure, Saturation Index and Amount of Scale in lb/1000bbl

| Mix Waters |        | CO <sub>2</sub> | Calcite<br>CaCO <sub>3</sub> |        | Gypsum<br>CaSO <sub>4</sub> ·2H <sub>2</sub> O |        | Anhydrite<br>CaSO <sub>4</sub> |        | Celestite<br>SrSO <sub>4</sub> |        | Barite<br>BaSO <sub>4</sub> |        |
|------------|--------|-----------------|------------------------------|--------|------------------------------------------------|--------|--------------------------------|--------|--------------------------------|--------|-----------------------------|--------|
| 105254     | 114048 | psi             | Index                        | Amount | Index                                          | Amount | Index                          | Amount | Index                          | Amount | Index                       | Amount |
| 0%         | 100%   | 8.77            | 0.37                         | 65.2   | -0.18                                          |        | -0.07                          |        | -0.13                          |        | 0.53                        | 0.11   |
| 25%        | 75%    | 6.98            | 0.40                         | 81.7   | -0.19                                          |        | -0.02                          |        | -0.12                          |        | 0.43                        | 0.08   |
| 50%        | 50%    | 5.16            | 0.45                         | 59.1   | -0.19                                          |        | -0.03                          |        | -0.12                          |        | 0.31                        | 0.05   |
| 100%       | 0%     | 1.50            | 0.78                         | 59.3   | -0.21                                          |        | -0.04                          |        | -0.12                          |        | 0.21                        | 0.04   |

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

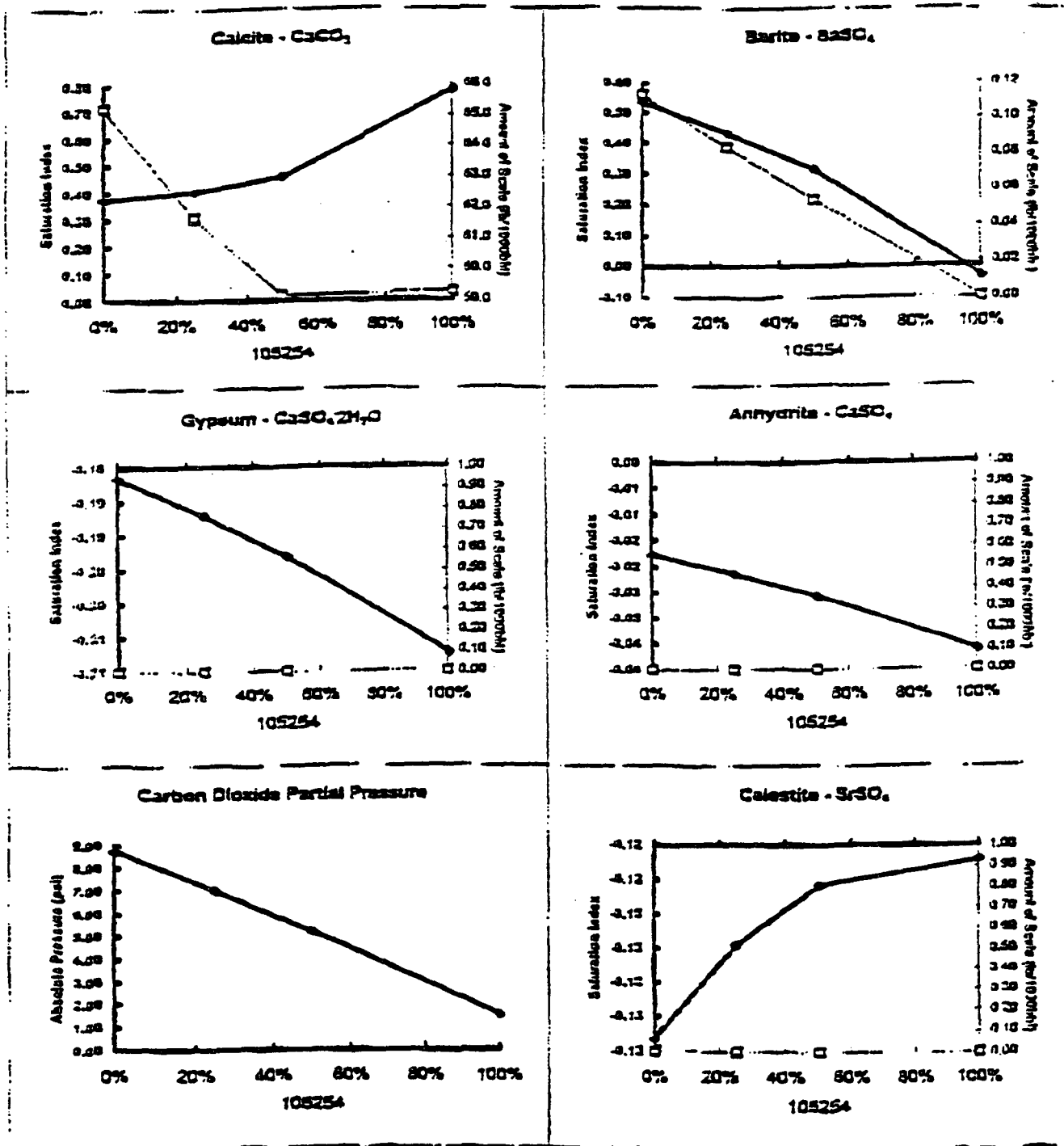
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: CO<sub>2</sub> Pressure is absolute pressure. Total Pressure is gauge pressure.

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## Mixture Predictions from Baker-Petrolite

105254 with 114848 at 120°F and 0 psi



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Analysis: 22526

## Water Analysis Report from Baker Petrolite

Mixed at 140°F and 0 psi

### Predictions of Carbon Dioxide Pressure, Saturation Index and Amount of Scale in lb/1000bbl

| Mix Waters |        | CO <sub>2</sub> | Calcite<br>CaCO <sub>3</sub> | Gypsum<br>CaSO <sub>4</sub> ·2H <sub>2</sub> O | Anhydrite<br>CaSO <sub>4</sub> | Celestite<br>SrSO <sub>4</sub> | Barite<br>BaSO <sub>4</sub> |
|------------|--------|-----------------|------------------------------|------------------------------------------------|--------------------------------|--------------------------------|-----------------------------|
|            |        | psi             | Index Amount                 | Index Amount                                   | Index Amount                   | Index Amount                   | Index Amount                |
| 105254     | 114048 |                 |                              |                                                |                                |                                |                             |
| 0%         | 100%   | 10.1            | 0.47 81.3                    | -0.24                                          | 0.02 45.3                      | -0.14                          | 0.38 0.09                   |
| 25%        | 75%    | 8.0             | 0.50 76.1                    | -0.24                                          | 0.01 33.6                      | -0.14                          | 0.27 0.06                   |
| 50%        | 50%    | 5.9             | 0.55 71.3                    | -0.25                                          | 0.01 20.0                      | -0.13                          | 0.15 0.03                   |
| 100%       | 0%     | 1.8             | 0.84 66.5                    | -0.27                                          | -0.00                          | -0.13                          | 0.01                        |

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: CO<sub>2</sub> Pressure is absolute pressure. Total Pressure is gauge pressure.

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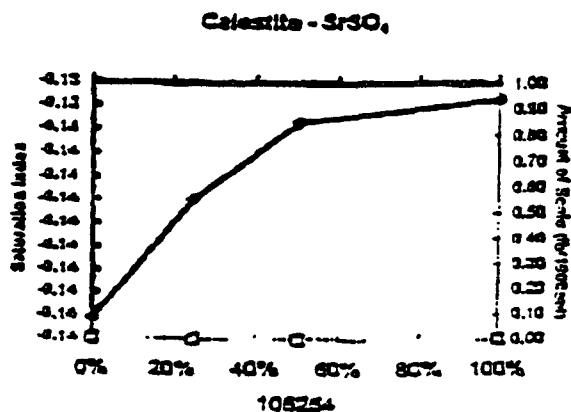
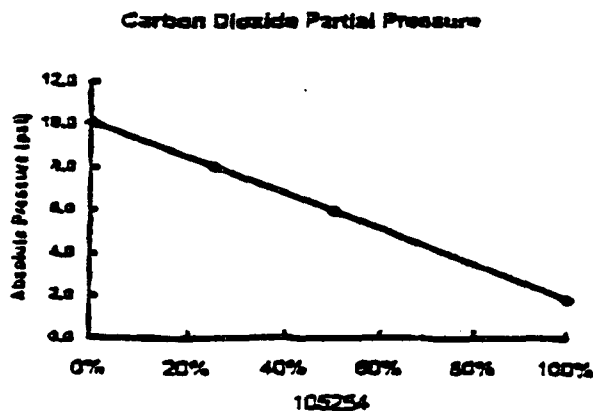
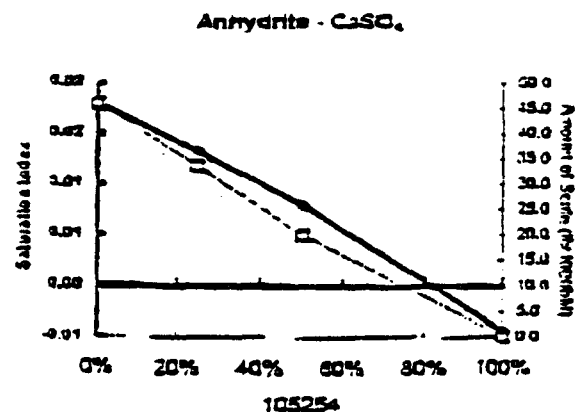
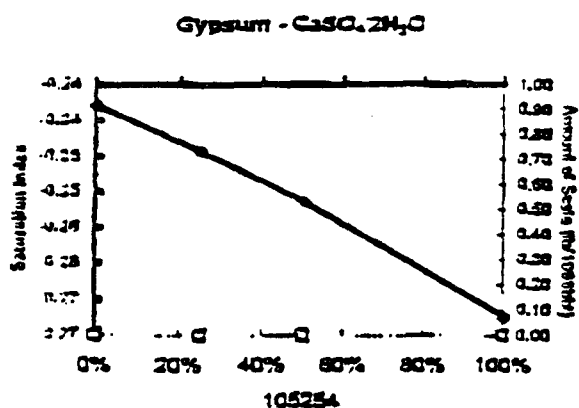
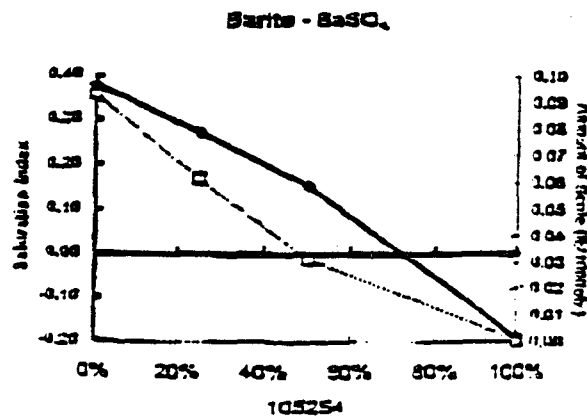
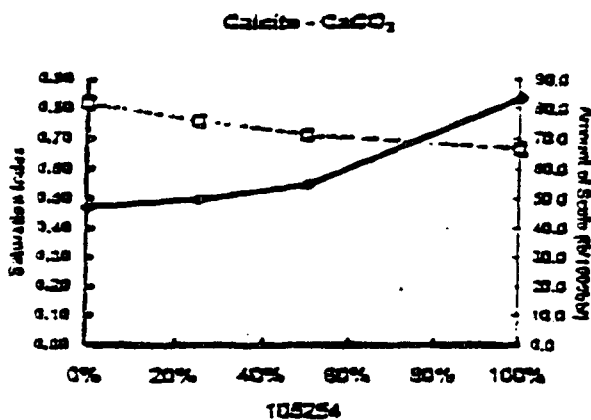
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Analysis: 22526

# Mixture Predictions from Baker-Petrolite

105254 with 114048 at 140°F and 0 psi



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# Laboratory Services, Inc.

4016 Plaza Drive  
Hobbs, New Mexico 88240  
Telephone: (805) 367-3713

## SULFUR IN CRUDE OIL

Devon Energy

P.O. Box 250

Artesia, New Mexico 88211-0250

Dec 15, 1988

Total  
Sulfur

API  
Gravity @ 60° F

Specific  
Gravity @ 60° F

Logan 35-9

0.4888 wt. %

41.8

0.8174

(YESO)

Thank You,  
Roland Perry

|    |                                        |
|----|----------------------------------------|
| 1  | Post-IT brand fax transmittal memo 757 |
| 2  | 10/15/88                               |
| 3  | 10/15/88                               |
| 4  | 10/15/88                               |
| 5  | 10/15/88                               |
| 6  | 10/15/88                               |
| 7  | 10/15/88                               |
| 8  | 10/15/88                               |
| 9  | 10/15/88                               |
| 10 | 10/15/88                               |



# Mobile Analytical Laboratories

LABORATORIES IN COESSE, BUILDINGS & STACY DAM  
WEST UNIVERSITY AND WESTOVER STREET

P.O. BOX 43216

COESSE, TEXAS 75768-0216

PHONE 474-4744

FAX 474-6761

MR. ROLLAND W. PERRY  
LABORATORY SERVICES  
1331 TASKER DR.  
HOBBES, NEW MEXICO 88240

FEBRUARY 07, 1997

DEAR MR PERRY:

THE FOLLOWING ARE THE RESULTS OF THE FOUR OIL SAMPLES FOR SULFUR  
CONTENT AND GRAVITY, RECEIVED 02/03/97, LAB NOS. 260-263:

|                                                                               | SULFUR    | API<br>GRAVITY @ 60 °F | SPECIFIC<br>GRAVITY @ 60 °F |
|-------------------------------------------------------------------------------|-----------|------------------------|-----------------------------|
| LAB NO. 260:<br>DEVON ENERGY<br>FALCON 3 "B" FED #1 (SAN ANTONIO)<br>01/30/97 | 0.547 wt% | 38.5                   | 0.8325                      |
| LAB NO. 261:<br>DEVON ENERGY<br>EAGLE 33 "O" FED #11<br>01/30/97              | 0.556 wt% | 38.4                   | 0.8327                      |
| LAB NO. 262:<br>DEVON ENERGY<br>EAGLE 33 "N" FED #9<br>01/30/97               | 0.651 wt% | 37.4                   | 0.8377                      |
| LAB NO. 263:<br>DEVON ENERGY<br>EAGLE 34 "M" FED #25<br>01/30/97              | 0.565 wt% | 37.3                   | 0.8384                      |

TEST METHOD: SULFUR ASTM D-4294

WE APPRECIATE THE OPPORTUNITY TO WORK WITH YOU ON THESE TESTS.  
IF YOU HAVE ANY QUESTIONS OR REQUIRE ANY FURTHER INFORMATION, PLEASE  
FEEL FREE TO CONTACT ME AT ANY TIME.

SINCERELY,

*Stephen Reid*

STEPHEN REID  
SR/ct

