

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
N.M. Oil Cons. Division
811 S. 1st Street
Artesia, NM 88210-2834

FORM APPROVED
Budget Bureau No. 1004-0135
Expires March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

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

SUBMIT IN TRIPLICATE

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator
DEVON ENERGY CORPORATION (NEVADA)

3. Address and Telephone No.
20 NORTH BROADWAY, SUITE 1500, OKLAHOMA CITY, OKLAHOMA 73102 (405) 235-3611

4. Location of Well (Footage. Sec., T., R., M., or Survey Description)
1650' FSL & 2610' FWL, Section 8-18S-27E, Unit "K"

5. Lease Designation and Serial No.

LC-070678-A

6. If Indian, Allottee or Tribe Name

NA

7. If Unit or CA, Agreement Designation

8. Well Name and No.

Hawk 8 K Federal #4

9. API Well No.

30-015-29054

10. Field and Pool, or Exploratory Area

Red Lake (Q-GB-SA)

11. County or Parish, State

Eddy County, NM

CHECK APPROPRIATE BOX(S) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- ☒ Notice of Intent
☐ Subsequent Report
☐ Final Abandonment Notice

TYPE OF ACTION

- ☐ Abandonment
☐ Recompletion
☐ Plugging Back
☐ Casing Repair
☐ Altering Casing
☒ Other Downhole Commingling
☐ Change of Plans
☐ New Construction
☐ Non-Routine Fracturing
☐ Water Shut-Off
☐ Conversion to Injection
☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. 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.)*

Devon Energy Corporation (Nevada) has applied with the New Mexico Oil Conservation Division and the Bureau of Land Management requesting the Hawk 8 K Federal #4 be deepened to the Yeso and then downhole commingled in the Red Lake (Q-GB-SA) and Red Lake; Glorieta-Yeso Fields.

A copy of the NMOCD Application for Downhole Commingling is attached.

**SUBJECT TO
LIKE APPROVAL
BY STATE**

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

Signed

Tonja Rutelonis
Tonja Rutelonis

Title Engineering Technician

Date 2/11/00

(This space for Federal or State office use)

Approved by

Conditions of approval, if any:

Title

PETROLEUM ENGINEER

Date

FEB 18 2000

RECEIVED
FEB 17 2000
BLM
ROSWELL, NM

DISTRICT I
P.O. Box 1990, Hobbs, NM 88241-1990
DISTRICT II
811 South First St., Artesia, NM 88210-2935
DISTRICT III
1000 Rio Pecos Rd, Aztec, NM 87410-1003
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

Hawk 8 K Federal

4

K - 8-18S-27E

Eddy

Lease

Well No.

Unit Ltr. - Sec - Twp - Rge

County
Spacing Unit Lease Type: (check 1 or more)

OGRID NO. 6137

Property Code

19139

API NO.

30-015-29054

Federal ☒

State ☐ (and/or) Fee ☐

1. Pool Name and Pool Code	Red Lake (Q-GB-SA)		Red Lake (Glor-Yeso)
2. Top and Bottom of Pay Section (Perforations)	1567'-1966'		To be perforated 2900'-3050'
3. Type of production (Oil or Gas)	Oil		Oil
4. Method of Production (Flowing or Artificial Lift)	Artificial Lift		Artificial Lift
5. Bottomhole Pressure Oil Zones - Artificial Lift: Estimated Current Gas & Oil - Flowing: Measured Current All Gas Zones: Estimated Or Measured Original	a. (Current) 50 psi producing BHP b. (Original)	a. b.	a. 100 psi producing BHP b.
6. Oil Gravity (^o API) or Gas BTU Content	39.5°		42.6°
7. Producing or Shut-In?	Producing		Awaiting Perfs
Production Marginal? (yes or no)	Yes		Expected to be marginal
• If Shut-In, give date and oil/gas/water rates of last production Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data • If Producing, give date and oil/gas/water rates of recent test (within 60 days)	Date: N/A Rates: Date: 12/11/99 Rates: 9 BOPD, 27 MCFGPD, 61 BWPD	Date: Rates: Date: Rates:	Date: N/A Rates: Date: N/A Rates:
8. Fixed Percentage Allocation Formula - % for each zone (total of %'s to equal 100%)	Oil: 43 % Gas: 43 %	Oil: % Gas: %	Oil: 57 % Gas: 57 %

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 Tonia Rutelonis TITLE Engineering Technician DATE 10/21/99

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

DISTRICT I

State of New Mexico

Box 1980, Hobbs, NM 88240

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

P.O. Box 2088

Santa Fe, New Mexico 87504-2088

DISTRICT III

1000 Rio Brasos Rd., Aztec, NM 87410

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-29054	Pool Code 51300	Pool Name Red Lake (O-GB-SA) & Red Lake; Glorieta-Yes
Property Code 19139	Property Name Hawk 8 (K) Federal	Well Number 4
OGED No. 6137	Operator Name Devon Energy Corporation (Nevada)	Elevation 3452'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	8	18 S	27 E		1650	South	2610	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 40	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

	OPERATOR CERTIFICATION I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief. <u>E.L. Buttross, Jr.</u> Signature E.L. Buttross, Jr. Printed Name District Engineer Title June 5, 1996 Date
	SURVEYOR CERTIFICATION 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. May-24, 1996 Date Surveyed <u>[Signature]</u> Signature & Seal of Professional Surveyor W.O. No. 6202a Certificate No. Gary L. Jones 7977 BASIN SURVEYS

Hawk 8 K Federal #4

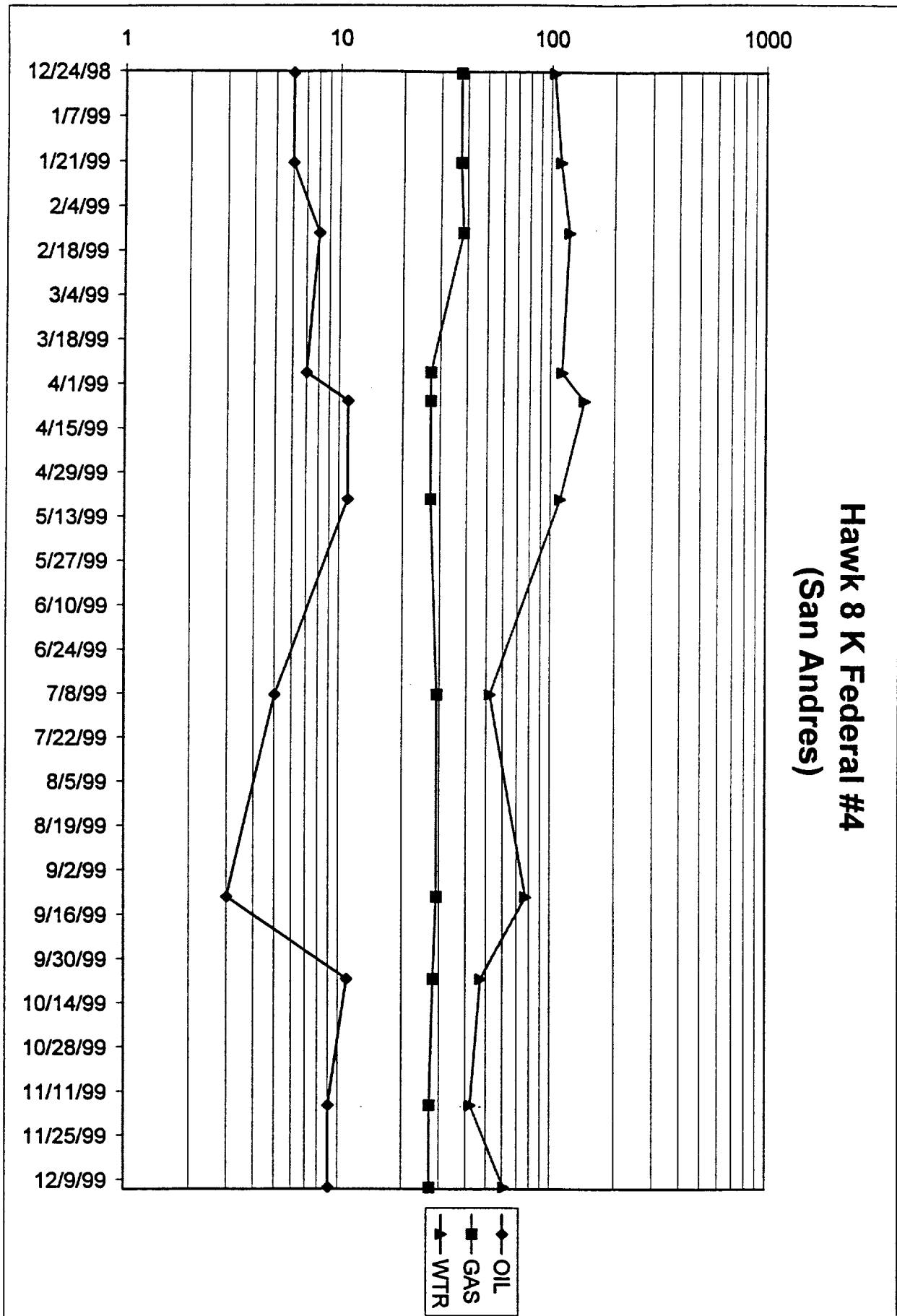
Allocation Formula

Well Name	Producing Formation	*Daily Production Test	
		3-month Average	% of Total
Kaiser B #6	Red Lake (Glor-Yeso)	13 BO/52 MCF/78 BW	57 %
Hawk 8 K Federal #4	Red Lake (Q-GB-SA)	10 BO/27 MCF/50 BW	43 %

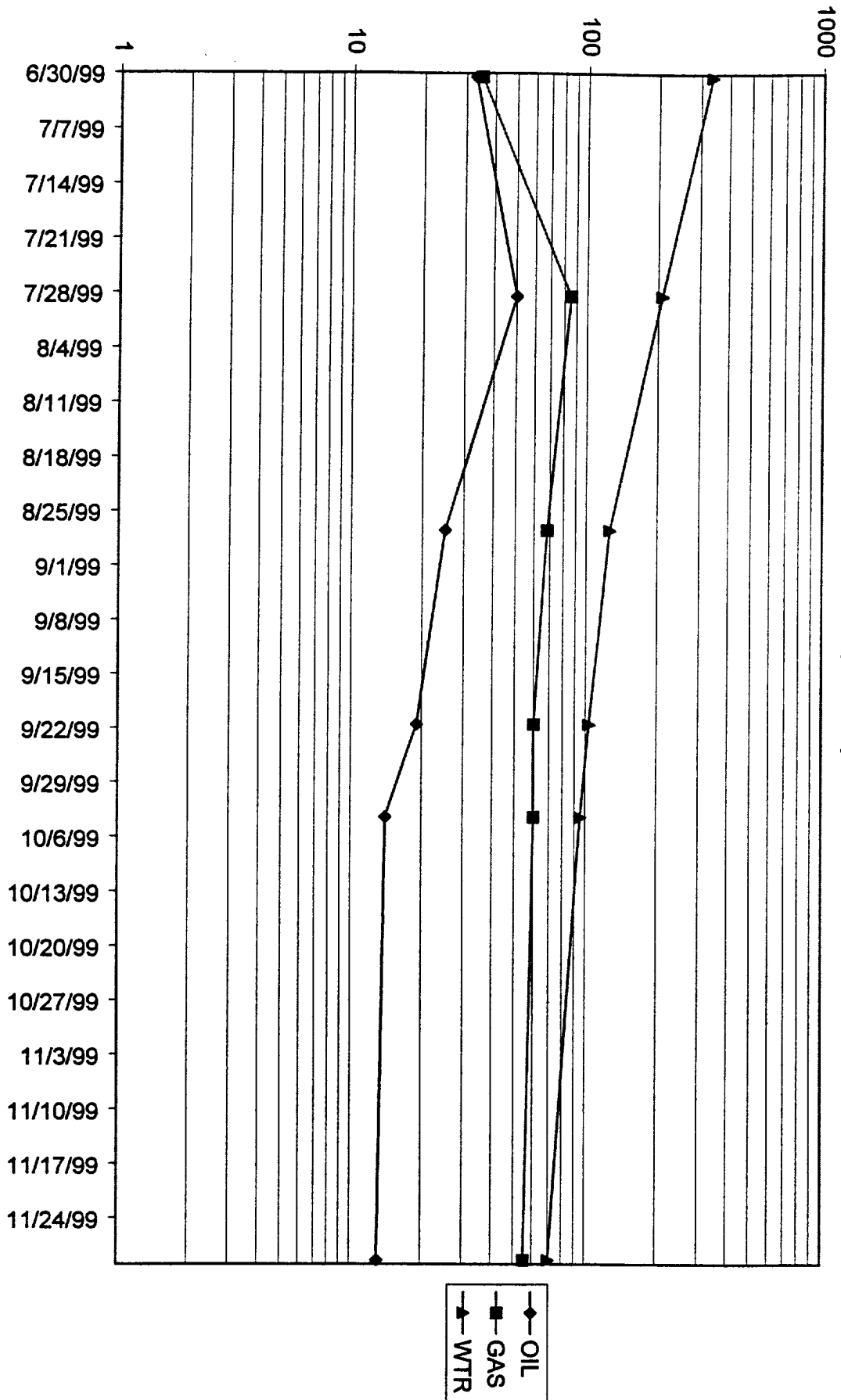
* From attached production plots

The above production test represents stable production from a San Andres producer (Hawk 8 K Federal #4) and a Yeso producer (Kaiser B #6). We believe these rates of production represent an acceptable means to allocate production. **We have previously received approval for downhole commingling in these fields utilizing a similar allocation method.**

Hawk 8 K Federal #4 (San Andres)

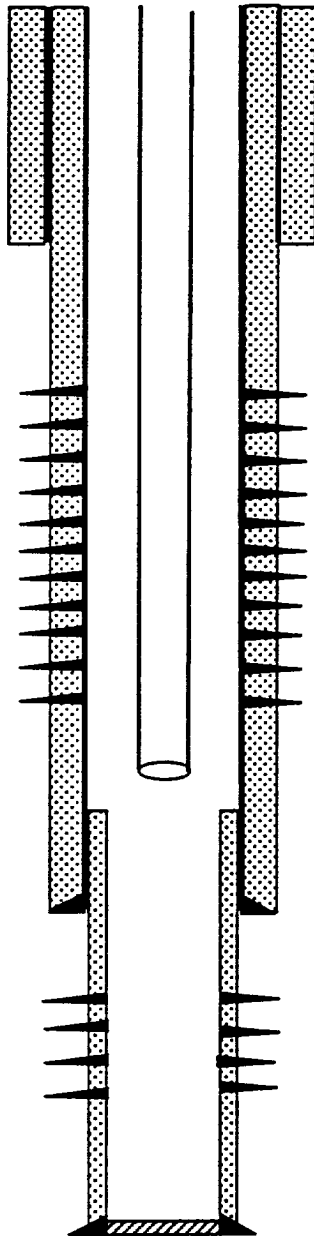


Kaiser B #6 (Yeso)



DEVON ENERGY CORPORATION - WELLBORE SCHEMATIC

WELL NAME: Hawk 8K Federal #4			FIELD: Red Lake			
LOCATION: 1650' FSL & 2610' FWL, Sec. 8-18S-27E			COUNTY: Eddy			STATE: NM
ELEVATION: GL = 3452"			SPUD DATE: 7/27/96		COMP DATE: 8/17/96	
API#: 30-015-29054		PREPARED BY: T. Rutelonis			DATE: 9/20/99	
	DEPTH	SIZE	WEIGHT	GRADE	THREAD	HOLE SIZE
CASING:	0' - 1055'	8-5/8"	24#	J-55		12-1/4"
CASING:	0' - 2249'	5 1/2"	15.5#	J-55		7-7/8"
LINER:	2150' - 4500'	4"	10.46#	J-55	FL4S	4-3/4"
TUBING:	0' - 2120'	2-7/8"				
TUBING:						



☐ CURRENT ☒ PROPOSED

OPERATOR: DEVON ENERGY CORPORATION

8-5/8" Casing, Set @ 1055' w/ 500 sxs cmt. TOC @ surface

PREMIER PERFORATIONS:

1243'-1248' (3 HOLES, .40")
(PERFS SQZ'D)

UPPER SAN ANDRES PERFORATIONS:

1316'-1437' (4 HOLES, .40")
(PERFS SQZ'D)

SAN ANDRES PERFORATIONS:

1592'-2078' (20 holes, .40", ALPHA, "A", "B", "C", & "D")

2-7/8" tbg w/ SN @ 2120'

TOL @ 2150'

5 1/2" 15.5# J-55 Casing Set @ 2249' w/ 400 sxs cmt. TOC @ surf.

YESO PERFORATIONS:

±2900' - ±3050' (20 HOLES, .38")

TD @ 4500'

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUP

OPERATOR'S COPY APPROVED

(See other instructions on reverse side)

RECEIVED

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL ☒ GAS WELL ☐ DRY ☐ Other ☐

1b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. REVER ☐ Other ☐

2. NAME OF OPERATOR: DEVON ENERGY CORPORATION (NEVADA) AREA HEADQUARTERS

3. ADDRESS AND TELEPHONE NO.: 20 N. BROADWAY, SUITE 1500, OKC, OK 73102-8260 (405) 235-3611

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements):
At surface 1650' FSL & 2610' FWL, Unit K, Sec. 8-T18S-R27E

At top prod. interval reported below (SAME)

At total depth (SAME)

5. LEASE DESIGNATION AND SERIAL NO.
LC-070678-A

6. IF INDIAN, ALLOTTEE OR TRIBE NAME
N/A

7. UNIT AGREEMENT NAME
N/A

8. FARM OR LEASE NAME, WELL NO.
Hawk "8K" Federal #4

9. API WELL NO.
30-015-29054

10. FIELD AND POOL, OR WILDCAT
Red Lake (Q-GB-SA)

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA
Unit K
Section 8-T18S-R27E

14. PERMIT NO.		DATE ISSUED 7/11/96		12. COUNTY OR PARISH Eddy	13. STATE NM
15. DATE SPUNDED 7/27/96	16. DATE T.D. REACHED 7/31/96	17. DATE COMPL. (Ready to prod.) 8/17/96		18. ELEVATIONS (DF, RKB, RT, GR, ETC.) GL 3452'	
19. ELEV. CASINGHEAD		20. TOTAL DEPTH, MD & TVD 2249'		21. PLUG, BACK T.D., MD & TVD 2206'	
22. IF MULTIPLE COMPL., HOW MANY? N/A		23. INTERVALS DRILLED BY →		24. PRODUCING INTERVAL(S), OF THIS COMPLETION-TOP, BOTTOM, NAME (MD AND TVD) 1243-2078' San Andres	
25. WAS DIRECTIONAL SURVEY MADE NO		26. TYPE ELECTRIC AND OTHER LOGS RUN LDT/CNL/DLL/MSFL/GR and CBL		27. WAS WELL CORED NO	

28. CASING RECORD (Report all strings set in well)

CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED
8 5/8" J-55	24#	1055'	12 1/4"	Surface; 300 sx Pozmix "C" +	
				200 sx Class "C"	
5 1/2" J-55	15.5#	2249'	7 7/8"	Surface; 150 sx Pozmix "C" +	
				250 sx Class "C"	

29. LINER RECORD				30. TUBING RECORD			
SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)	SIZE	DEPTH SET (MD)	PACKER SET (MD)
					2 7/8"	2106'	

31. PERFORATION RECORD (Interval, size and number)		32. ACID SHOT, FRACTURE, CEMENT SQUEEZE, ETC.	
1243-1248' w/3 holes (.40" EHD) Premier		DEPTH INTERVAL (MD)	
1316-1437' w/4 holes (.40" EHD) Upper San Andres		AMOUNT AND KIND OF MATERIAL USED	
1592-1709' w/7 holes (.40" EHD) San Andres Alpha		1243-2078'	
1811-1816' w/2 holes (.40" EHD), San Andres "A"		2500 gals 15% NeFe acid + 54 BS	
1860-1870' w/2 holes (.40" EHD), San Andres "B"		1000 gals fresh water prepad (w/scale inhibitor) +	
1984-1992' w/2 holes (.40" EHD), San Andres "C"		180,000 gals 20# Linear gel + 6000# 100-Mesh sd	
2023-2078' w/7 holes (.40" EHD), San Andres "D"		+ 237,000# 20/40 Brady sd	

33. PRODUCTION

DATE FIRST PRODUCTION 8/21/96		PRODUCTIONS METHOD (Flowing, gas lift, pumping—size and type of pump) pump				WELL STATUS (Producing or shut-in) Prdg	
DATE OF TEST 8/24/96	HOURS TESTED 24 hrs	CHOKE SIZE	PROD'M FOR TEST PERIOD →	OIL-BBL. 77	GAS-MCF. 1836	WATER-BBL. 124	GAS-OIL RATIO 23,844/1
FLOW, TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL-BBL. 77	GAS-MCF. 1836	WATER-BBL. 124	OIL GRAVITY-API (CORR.) 38	

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)
WOPL

TEST WITNESSED BY
Danny Hokett

35. LIST OF ATTACHMENTS
logs and deviation survey report

36. I hereby certify that the foregoing and attached information is complete and correct as determined from the logs and survey report.

SIGNED E. L. Buttross, Jr. TITLE DISTRICT ENGINEER

DATE September 4, 1996

*(See Instructions and Spaces for Additional Data on Reverse Side)

Water Analysis Report from Baker Petrolite

Analysis: 24190

Summary of Mixing Waters		
Sample Number	133534	112098
Company	DEVON ENERGY	DEVON ENERGY
Lease	HAWK 8	HAWK "8"
Well	WELL #3	BATTERY
Sample Location	WELLHEAD	FWKO
	yeso	SAN ANDRES
Anions (mg/L)		
Chloride	106,253	99,569
Bicarbonate	573	497
Carbonate	0.00	0.00
Sulfate	3,912	4,489
Phosphate	0.00	0.00
Borate	0.00	0.00
Silicate	0.00	0.00
Cations (mg/L)		
Sodium	67,918	63,725
Magnesium	369	509
Calcium	1,749	1,770
Strontium	36.0	49.0
Barium	0.06	0.10
Iron	48.0	0.40
Potassium	523	269
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)	181,381	170,877
Density (g/cm)	1.12	1.11
Sampling Date	10/26/99	7/28/99
Account Manager	CURRY PRUIT	CURRY PRUIT
Analyst	JOANNA RAGAN	JOANNA RAGAN
Analysis Date		8/4/99
pH at time of sampling	5.90	7.90
pH at time of analysis		
pH used in Calculations	5.90	7.90

Analysis: 24190

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 ₂	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄	
133534	112098	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
100%	0%	5.52	-0.31		-0.20		-0.18		-0.21		0.13	0.01
90%	10%	4.90	-0.27		-0.19		-0.17		-0.18		0.17	0.01
80%	20%	4.30	-0.22		-0.18		-0.16		-0.16		0.20	0.01
70%	30%	3.70	-0.17		-0.17		-0.16		-0.14		0.23	0.02
60%	40%	3.10	-0.10		-0.17		-0.15		-0.12		0.26	0.02
50%	50%	2.51	-0.01		-0.16		-0.14		-0.10		0.29	0.02
40%	60%	1.92	0.09	7.5	-0.15		-0.14		-0.08		0.32	0.02
30%	70%	1.34	0.24	16.9	-0.15		-0.13		-0.06		0.35	0.03
20%	80%	0.78	0.46	26.8	-0.14		-0.13		-0.04		0.38	0.03
10%	90%	0.27	0.89	37.5	-0.14		-0.12		-0.02		0.40	0.03
0%	100%	0.05	1.51	48.8	-0.13		-0.12		0.00	0.18	0.43	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.

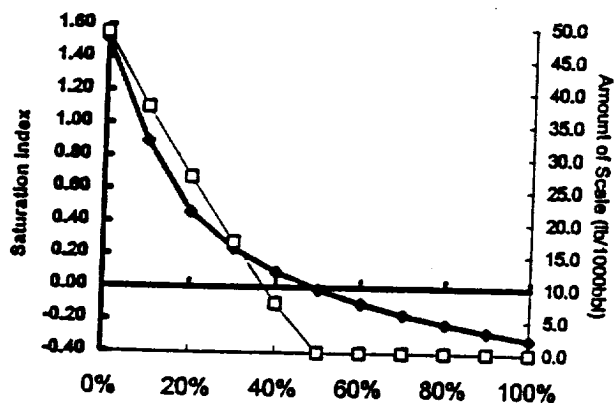
Note 3: CO₂ Pressure is absolute pressure. Total Pressure is gauge pressure.

Mixture Predictions from Baker-Petrolite

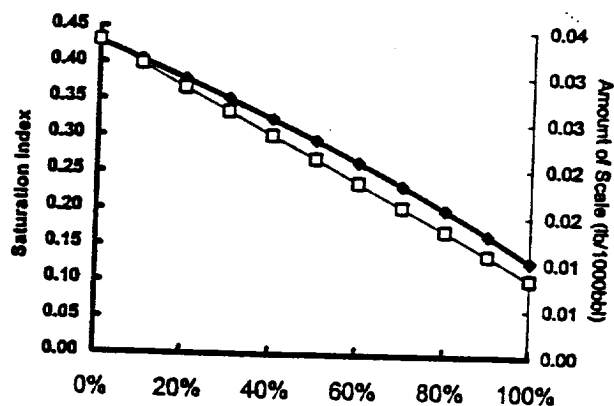
133534 with 112098 at 80°F and 0 psi

Analysis: 24190

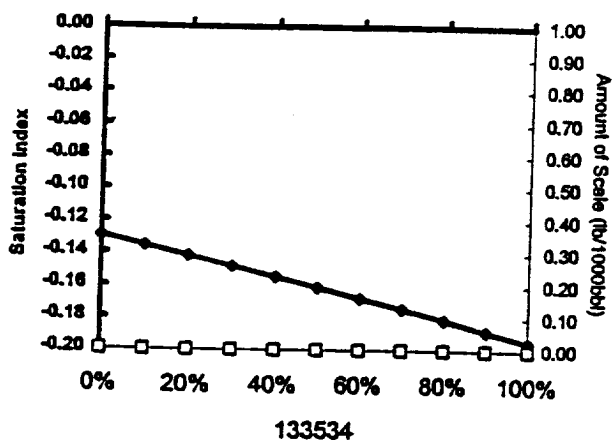
Calcite - CaCO_3



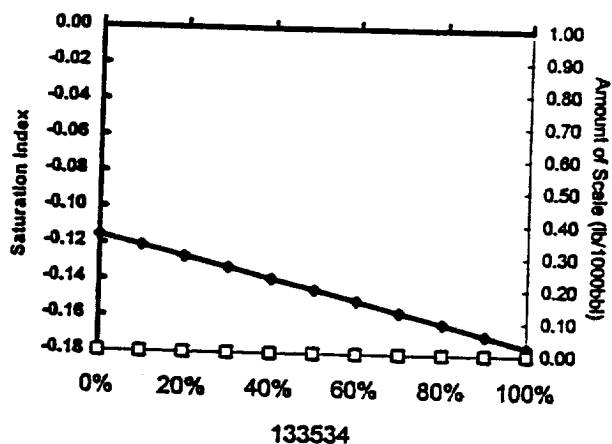
Barite - BaSO_4



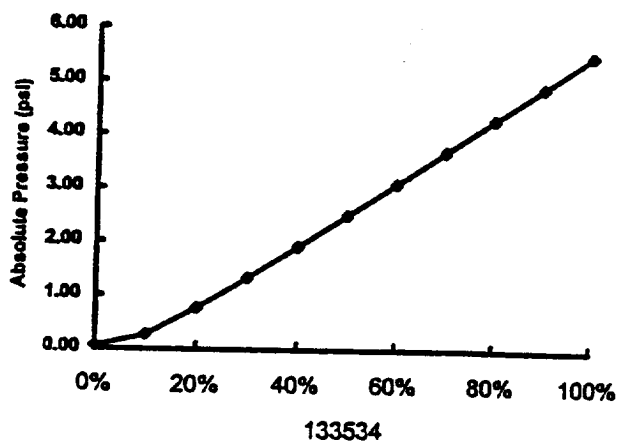
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



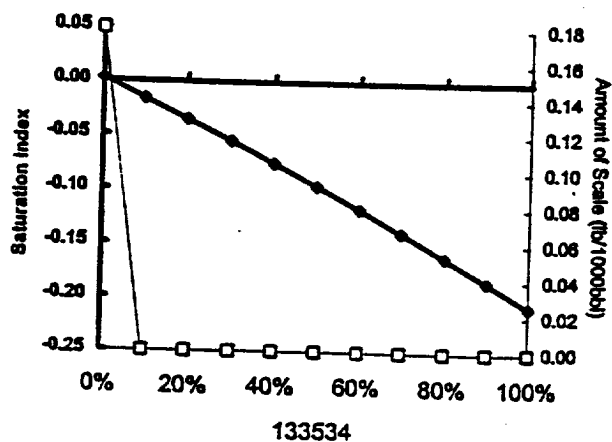
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



Analysis: 24190

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 ₂	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄	
133534	112098	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
100%	0%	6.73	-0.22		-0.27		-0.19		-0.24		-0.08	
90%	10%	5.99	-0.18		-0.27		-0.18		-0.22		-0.04	
80%	20%	5.25	-0.13		-0.26		-0.18		-0.19		-0.01	
70%	30%	4.52	-0.07		-0.25		-0.17		-0.17		0.03	0.00
60%	40%	3.80	-0.00		-0.25		-0.16		-0.15		0.06	0.01
50%	50%	3.08	0.08	7.2	-0.24		-0.16		-0.13		0.09	0.01
40%	60%	2.37	0.18	15.2	-0.23		-0.15		-0.11		0.12	0.01
30%	70%	1.67	0.32	23.8	-0.22		-0.14		-0.09		0.15	0.01
20%	80%	0.99	0.53	32.8	-0.22		-0.14		-0.07		0.17	0.02
10%	90%	0.40	0.89	42.5	-0.21		-0.13		-0.05		0.20	0.02
0%	100%	0.11	1.37	53.0	-0.20		-0.12		-0.03		0.22	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.

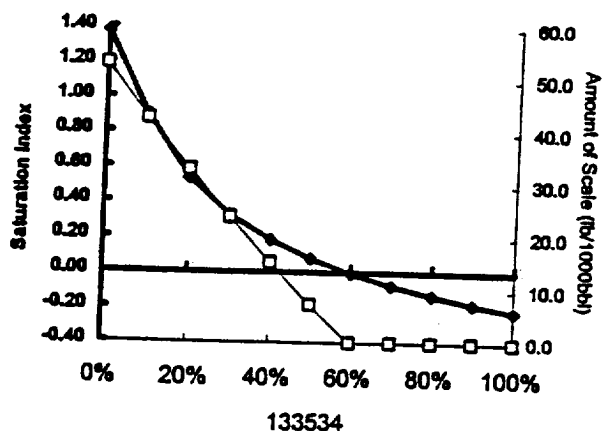
Note 3: CO₂ Pressure is absolute pressure. Total Pressure is gauge pressure.

Mixture Predictions from Baker-Petrolite

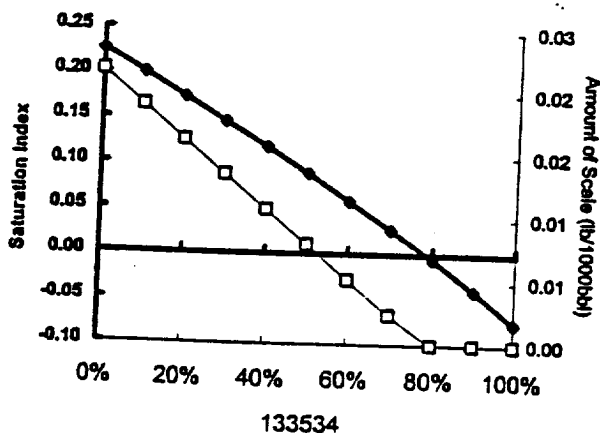
133534 with 112098 at 100°F and 0 psi

Analysis: 24190

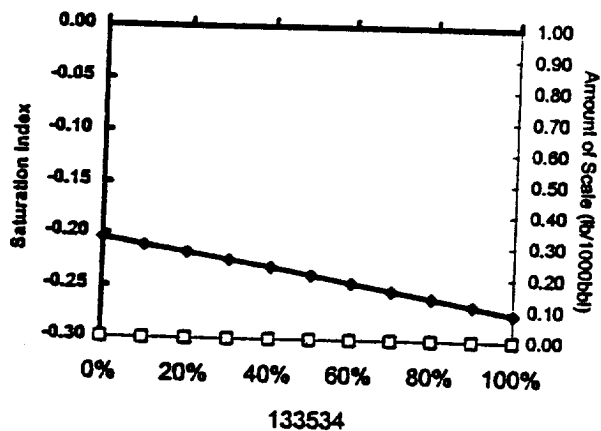
Calcite - CaCO_3



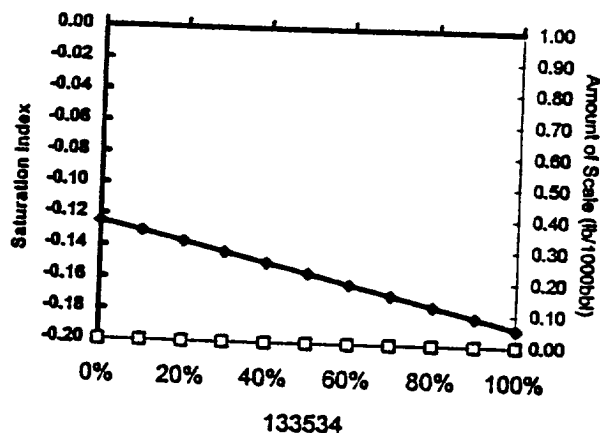
Barite - BaSO_4



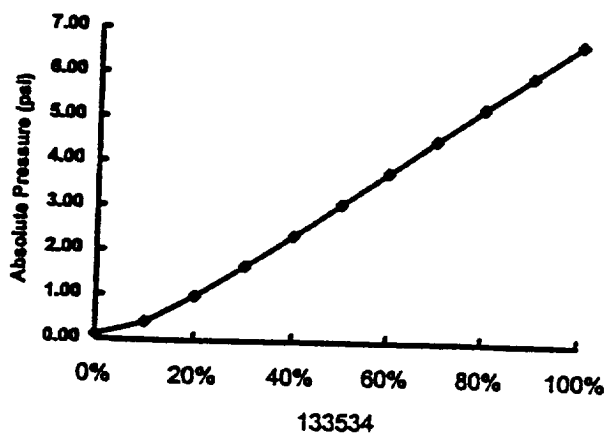
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



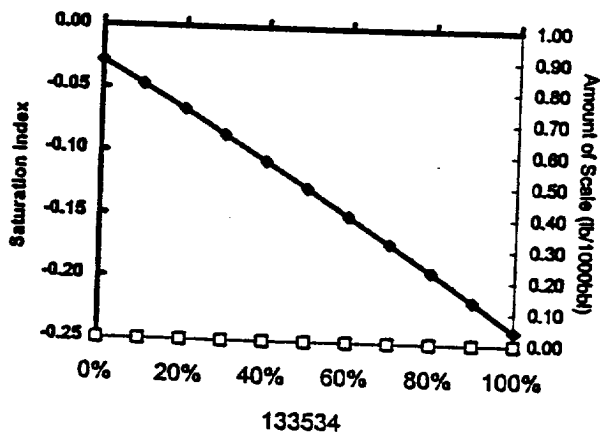
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



Analysis: 24190

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 ₂	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄	
133534	112098	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
100%	0%	7.93	-0.12		-0.34		-0.18		-0.26		-0.26	
90%	10%	7.06	-0.08		-0.33		-0.17		-0.24		-0.22	
80%	20%	6.20	-0.03		-0.33		-0.16		-0.21		-0.19	
70%	30%	5.34	0.02	2.7	-0.32		-0.16		-0.19		-0.15	
60%	40%	4.49	0.09	9.2	-0.31		-0.15		-0.17		-0.12	
50%	50%	3.65	0.17	16.1	-0.30		-0.14		-0.15		-0.09	
40%	60%	2.83	0.27	23.3	-0.30		-0.13		-0.13		-0.06	
30%	70%	2.01	0.41	31.0	-0.29		-0.13		-0.11		-0.03	
20%	80%	1.24	0.60	39.2	-0.28		-0.12		-0.09		-0.01	
10%	90%	0.58	0.90	47.9	-0.27		-0.11		-0.07		0.02	0.00
0%	100%	0.20	1.26	57.4	-0.27		-0.11		-0.05		0.04	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.

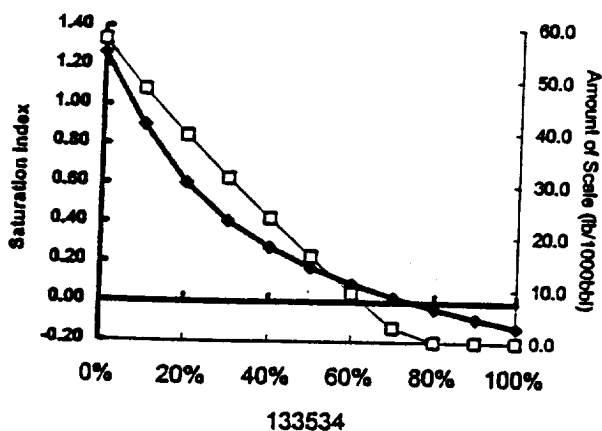
Note 3: CO₂ Pressure is absolute pressure. Total Pressure is gauge pressure.

Mixture Predictions from Baker-Petrolite

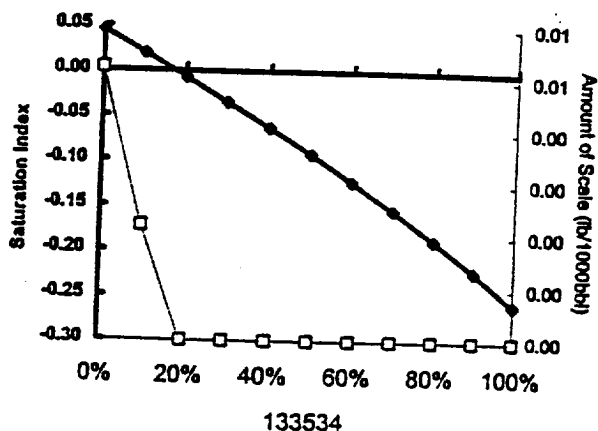
133534 with 112098 at 120°F and 0 psi

Analysis: 24190

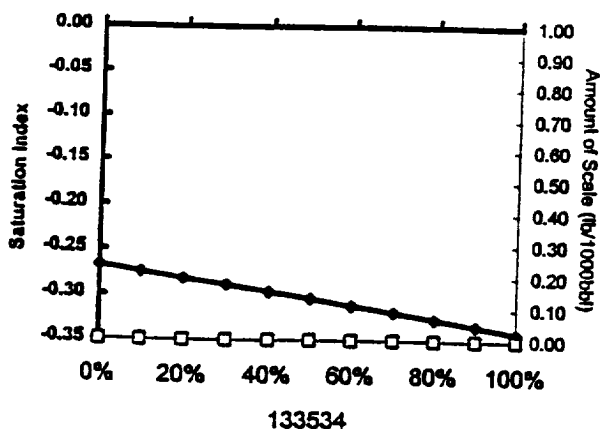
Calcite - CaCO_3



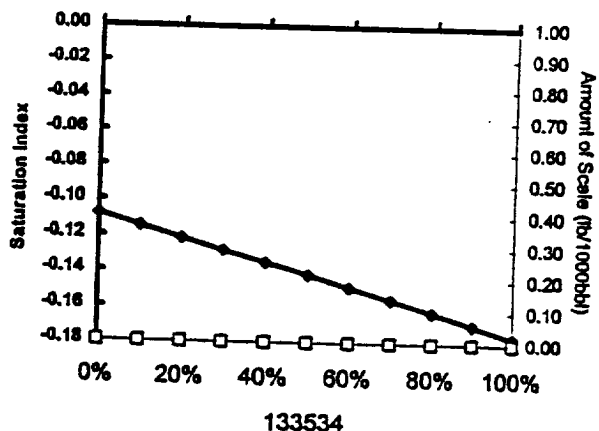
Barite - BaSO_4



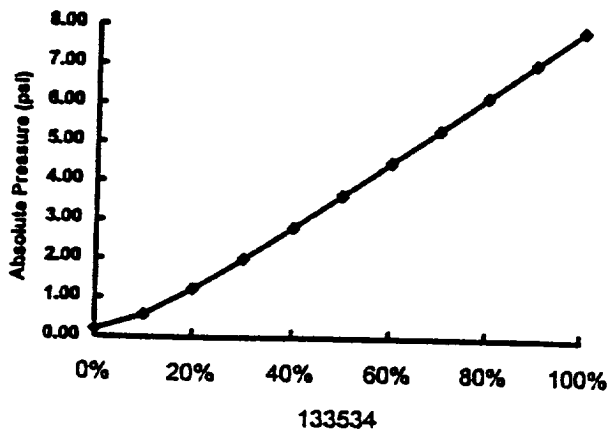
Gypsum - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$



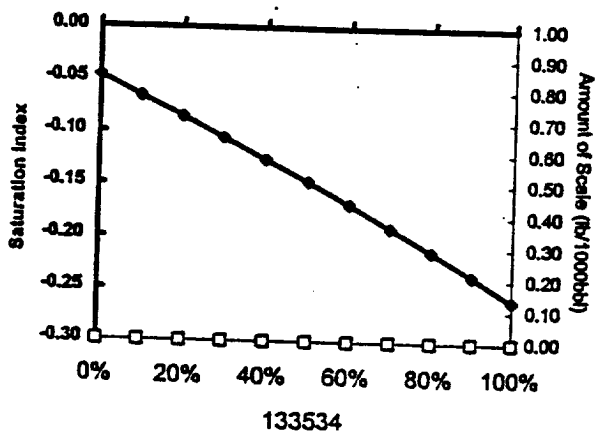
Anhydrite - CaSO_4



Carbon Dioxide Partial Pressure



Celestite - SrSO_4



Analysis: 24190

Water Analysis Report from Baker Petrolite

Mixes at 140°F and 0 psi

Predictions of Carbon Dioxide Pressure, Saturation Index and Amount of Scale in lb/1000bbl												
Mix Waters		CO ₂	Calcite CaCO ₃		Gypsum CaSO ₄ ·2H ₂ O		Anhydrite CaSO ₄		Celestite SrSO ₄		Barite BaSO ₄	
133534	112098	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
100%	0%	9.05	-0.02		-0.40		-0.14		-0.27		-0.42	
90%	10%	8.07	0.02	2.7	-0.39		-0.13		-0.25		-0.38	
80%	20%	7.09	0.07	8.0	-0.38		-0.13		-0.22		-0.35	
70%	30%	6.13	0.13	13.5	-0.38		-0.12		-0.20		-0.31	
60%	40%	5.17	0.19	19.3	-0.37		-0.11		-0.18		-0.28	
50%	50%	4.22	0.27	25.4	-0.36		-0.11		-0.16		-0.25	
40%	60%	3.29	0.37	31.9	-0.35		-0.10		-0.14		-0.22	
30%	70%	2.38	0.49	38.7	-0.34		-0.09		-0.12		-0.19	
20%	80%	1.53	0.66	46.0	-0.34		-0.08		-0.10		-0.17	
10%	90%	0.80	0.90	53.8	-0.33		-0.08		-0.08		-0.14	
0%	100%	0.34	1.18	62.3	-0.32		-0.07		-0.06		-0.11	

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

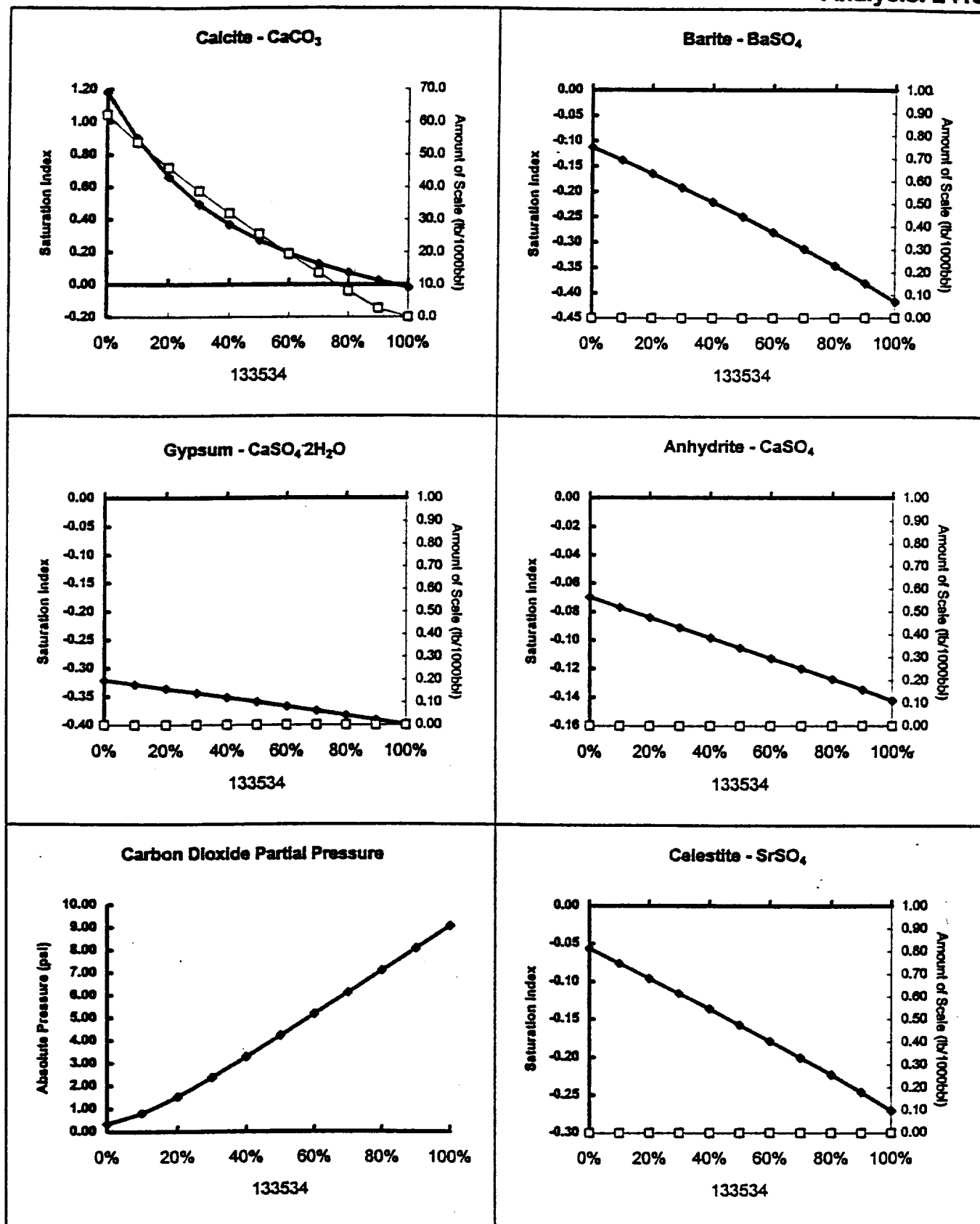
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.

Note 3: CO₂ Pressure is absolute pressure. Total Pressure is gauge pressure.

Mixture Predictions from Baker-Petrolite

133534 with 112098 at 140°F and 0 psi

Analysis: 24190



SEP-17-96 TUE 1 23 Laboratory Services

P. 82

*Mobile Analytical Laboratories*LABORATORIES IN ODESSA, GIDDINGS & STACY DAM
WEST UNIVERSITY AND WESTOVER STREET

P.O. BOX 88210

ODESSA, TEXAS 79763-0210

PHONE 337-4744

FAX 337-4781

SEPTEMBER 16, 1996

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

DEAR MR. PERRY:

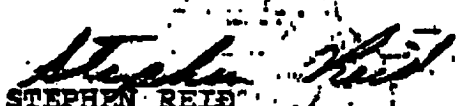
THE FOLLOWING ARE THE RESULTS OF THE SEVEN OIL SAMPLES FOR SULFUR
CONTENT AND GRAVITY, SAMPLED 09/14/96, RECEIVED 09/15/96,
LAB NOS. 1483-1489:

	SULFUR	API GRAVITY @ 60 °F	SPECIFIC GRAVITY @ 60 °F
LAB NO. 1483: DEVON HAWK #3-1	1.347 %wt	31.3	0.8691
LAB NO. 1484: DEVON HAWK #8-3	0.684 %wt	41.3	0.8188
LAB NO. 1485: DEVON HAWK #8-11	0.700 %wt	35.1	0.8492
LAB NO. 1486: DEVON HAWK #3-4	0.643 %wt	37.4	0.8380
SAN ANTOES			
LAB NO. 1487: DEVON HAWK #8-5	0.609 %wt	39.5	0.8275
LAB NO. 1488: DEVON WEST RED LAKE	0.690 %wt	39.0	0.8299
LAB NO. 1489: DEVON HONDO FED	0.522 %wt	38.2	0.8338

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
SR/dt

DEC-15-99 LRD

34 Laboratory Services

FAX 02

VH
S

Laboratory Services, Inc.

4018 Fiesta Drive

Hobbs, New Mexico 88240

Telephone: (505) 387-3713

SULFUR IN CRUDE OIL

Devon Energy

P. O. Box 240

Artesia, New Mexico 88211-0250

Dec 15, 1999

YESO OIL Samples

	Total Sulfur	API Gravity @ 60° F	Specific Gravity @ 60° F
Hawk 8-3	0.4116 wt %	42.8	0.8128
Eagle 83.9	0.4382 wt %	37.3	0.8383
Logan 35-9	0.4752 wt %	41.8	0.8165
Logan 35-14	0.4430 wt %	41.8	0.8165

Thank You,
Rolland Perry