

Getty

Getty Oil Company

P.O. Box 730

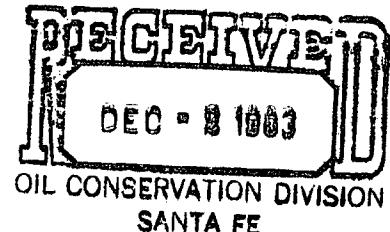
Hobbs, New Mexico 88240

(505) 397-3571

Central Exploration and Production Division

November 29, 1983

Oil Conservation Commission
State of New Mexico
P.O. Box 2088
Santa Fe, NM 87501



Attention: Mr. Joe Ramey, Division Director

RE: Application for downhole commingling
Getty Oil Company
George D. Riggs "B" Lease, Well No. 8
Langlie Mattix Queen and Justis Blinebry Pools
Lea County, New Mexico

Gentlemen:

We respectfully request Administrative Approval for downhole commingling in the George D. Riggs Well No. 8. The subject well is a single completion to the Langlie Mattix Queen. In accordance with Commission Rule 303, Paragraph C, the following facts are submitted:

1. The well is located in Unit Letter B, Section 1, Township 26 South, Range 37 East, 330' FNL and 1650' FEL, on the G.D. Riggs Lease, Lea County, New Mexico. The pools to be downhole commingled are the Langlie Mattix Queen and the Justis Blinebry.
2. Acreage dedicated to this well is 40 acres, and a plat is attached showing the locations of well no. 8 and offset wells. Offsetting wells, aside from those on the Riggs Lease, are the Vinson Ramsay Lease by Gulf Oil Company. (See attached plat.).
3. The Langlie Mattix Queen produced 2 BOPD, 2 BWPD, and 17 MCFPD on October 20, 1983, from perforations at 3169-3292', (1 spf, selective). Production for the Justis Blinebry on May 12, 1983 was 4 BOPD, 40 BWPD, and 23 MCFPD from perforations at 5111-5402', (selective). Oil Conservation Commission Form C-116 is attached. Prior to downhole commingling, it is proposed to acidize the Blinebry zone and increase its potential to 8 BOPD and 66 BWPD. The combined daily oil production from the two zones before commingling will not exceed the limit of 30 BOPD specified in Section 1, Paragraph (a), Part (1). Total combined water production before commingling will exceed the aforementioned limit. Pumping equipment presently on location in the Langlie Mattix Queen has a potential of producing 97 barrels of fluid per day from 5410'. Thus, upon approval to downhole commingle, both zones will be effectively pumped down without any loss in total production due to cross-flow. (See attached analysis program.).

4. Attached is a production decline curve for both oil zones. The Blinebry zone exhibited a constant rate of decline until the recompletion into the Langlie Mattix Queen in June, 1983. Due to this recent completion, a constant decline rate for the Queen zone cannot be determined at this time. Future production from the Queen is anticipated to remain at current levels.
5. The Queen zone maintains a bottom hole pressure of 400 psi. A bottomhole pressure for the Blinebry is estimated to be 500 psi.
6. Getty Oil Company has received approval to surface commingle the two wellstreams on the Riggs Lease, (June 27, 1983), and has since encountered no problems in fluid incompatibility. By utilizing water analyses for both wellstreams, a computer compatibility program indicated no scaling tendencies in the subject well, (see attached computer analysis.). Therefore, no permanent reservoir damage should result from downhole commingling these two zones.
7. Both oil streams are sour crude and will not experience a loss in value upon downhole commingling.
8. Gulf Oil Company has been notified in writing of this proposed commingling.

Commingling downhole, as opposed to surface commingling, will yield significant reductions in equipment and operating costs. By utilizing pumping equipment with sufficient capacity to pump both zones, we request special consideration as per Rule 303-C for this Getty well.

Sincerely yours,

GETTY OIL COMPANY



Dale R. Crockett
Area Superintendent

291
BDB/ly

cc: NMOCD/Santa Fe (2)
NMOCD/Hobbs
BLM/Roswell
File

Getty Oil Company
G.D. Riggs "B" Lease
Lea County, N.M.

R37E

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25
S

Gulf Oil Corporation
Vinson Ramsay

① 11

① 10

① 9

□ 5
TA 1971

□ 4
TA 1971

□ 3
TA 1971

Sec. 36

Getty Oil Company
G.D. Riggs "B"

□ 3

□ 8

□ 4

① 6

T
26
S

Sec. 1

① 7

□ Langlie Mattix Queen Well

① Justis Blinebry Well

— Section Line
40 acre spacing

N

G. D. Riggs "B" No. 8

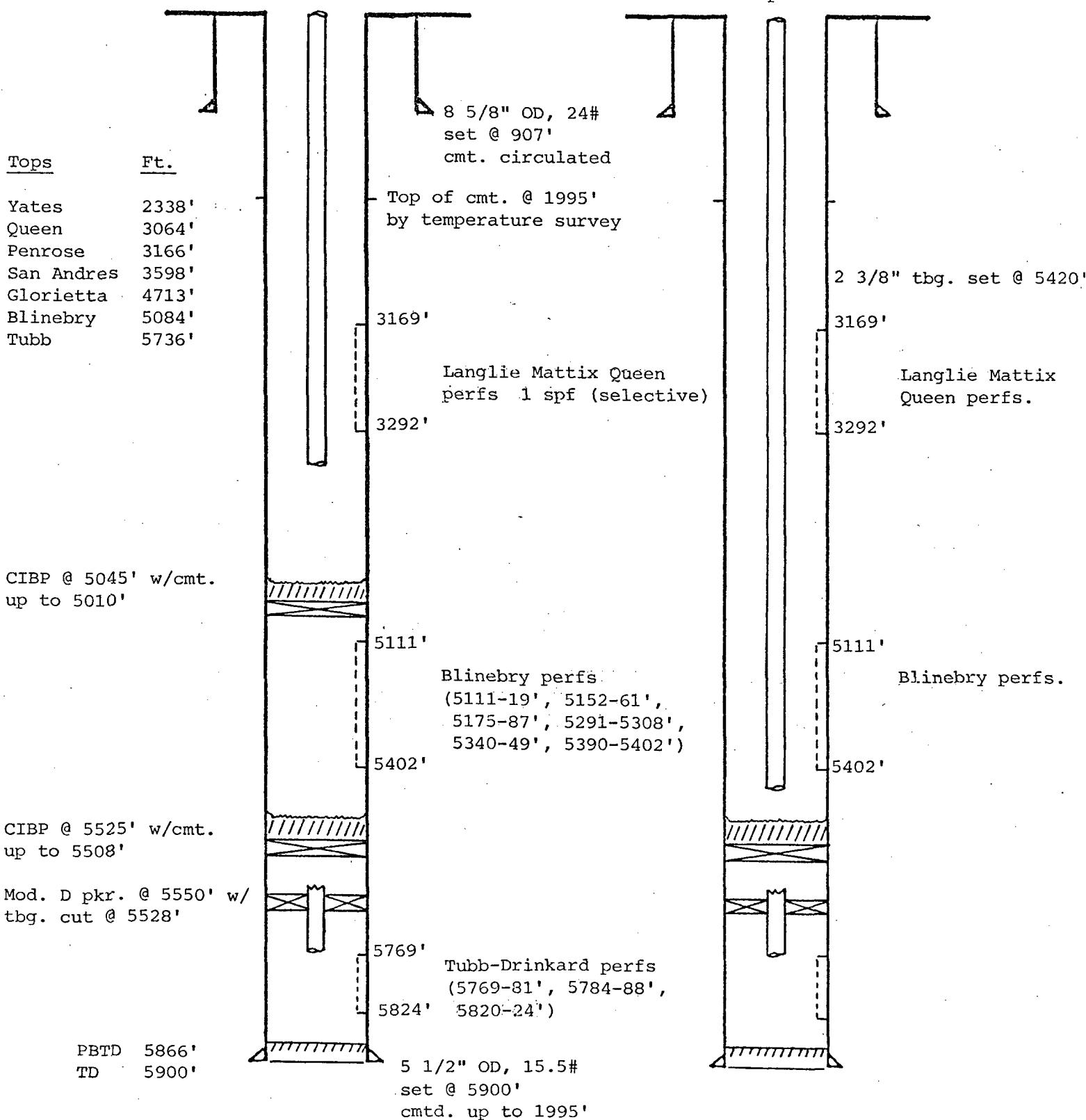
Well Diagram

Justis Field

(All measurements taken from 3030' G.L.)

Present

Proposed



G. D. Riggs "B" Well No. 8

Well History

- 10-62. Well was completed to a total depth of 5900'. The Tubb zone was perforated with 2 spf @ 5769-81', 5784-88', and 5820-24'; followed by a treatment of 1000 gals. mud acid and 4000 gals. HCL acid. The zone potentialled on pump for 26 BOPD and 1 BWPD.

The Blinebry zone was also perforated with 2 spf at 5111-19', 5152-61', 5175-87', 5291-5308', 5340-49', and 5390-5402'. Subsequent treatment to the perfs. was 500 gals. of mud acid, 24,000 gals. of refined oil, and 44,000 lbs. of 20/40 sand. The zone potentialled for a natural flow of 80 BOPD and 35 BWPD on a 10/64" choke.

- 11-63. Pumping equipment was installed to the Blinebry zone.
- 2-66. Plugged and abandoned the Tubb zone after production had declined to 2 BOPD and 7 BWPD.
- 6-83. Temporarily abandoned the Blinebry zone and recompleted to the Langlie Mattix Queen zone with perforations of 1 spf at 3169-3292'. The perfs. were treated with 2500 gals. of 15% HCL acid and with a foam frac of 9450 gals. of nitrogen and 70,000 lbs. 12/20 sand. The zone potentialled for 2 BOPD, 18 BWPD, and 18 MCFPD.

BDB/sc

G. D. Riggs "B" No. 8

Langlie Mattix Queen

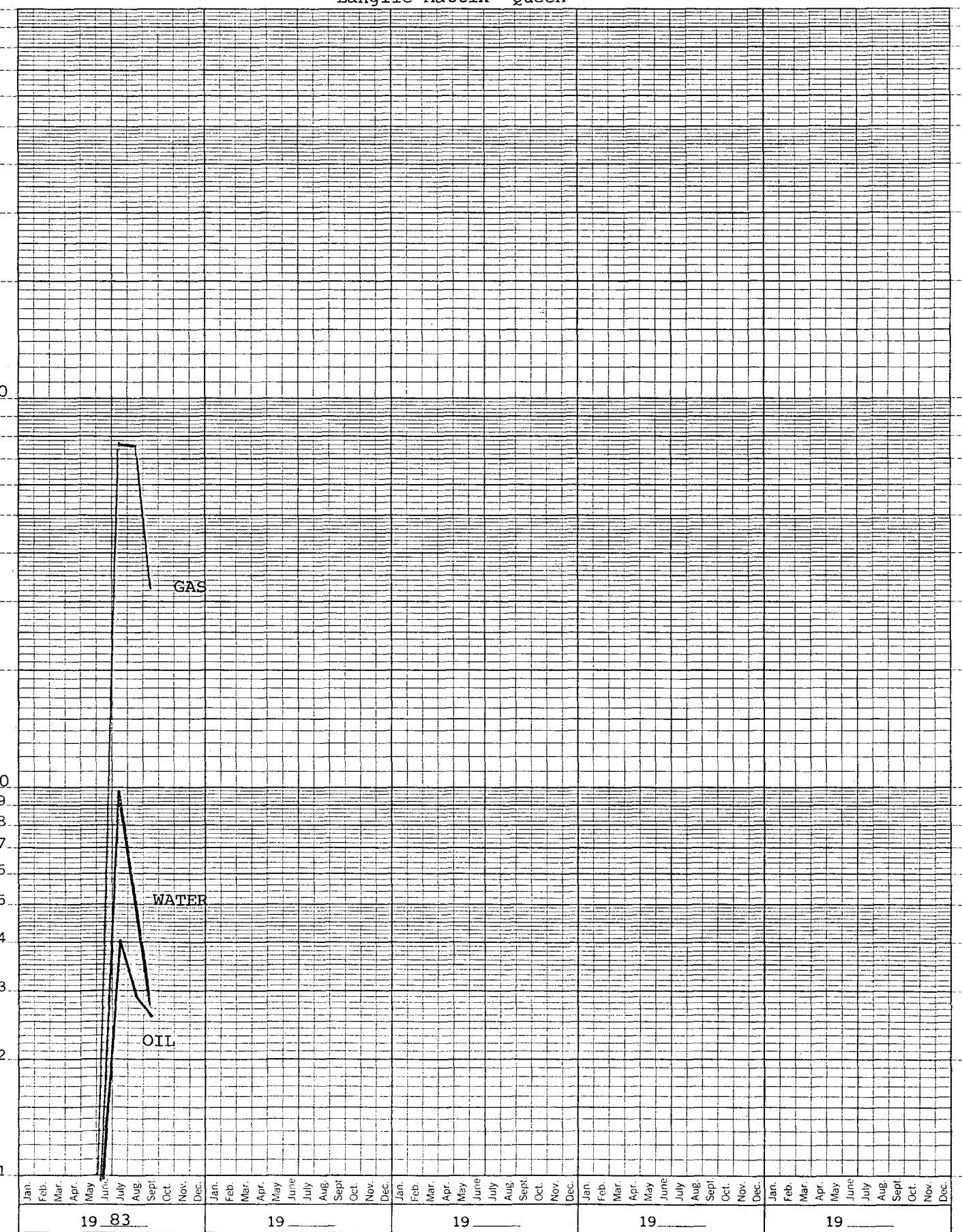
K⁺ 5 YEARS BY MONTHS x 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

46 6690

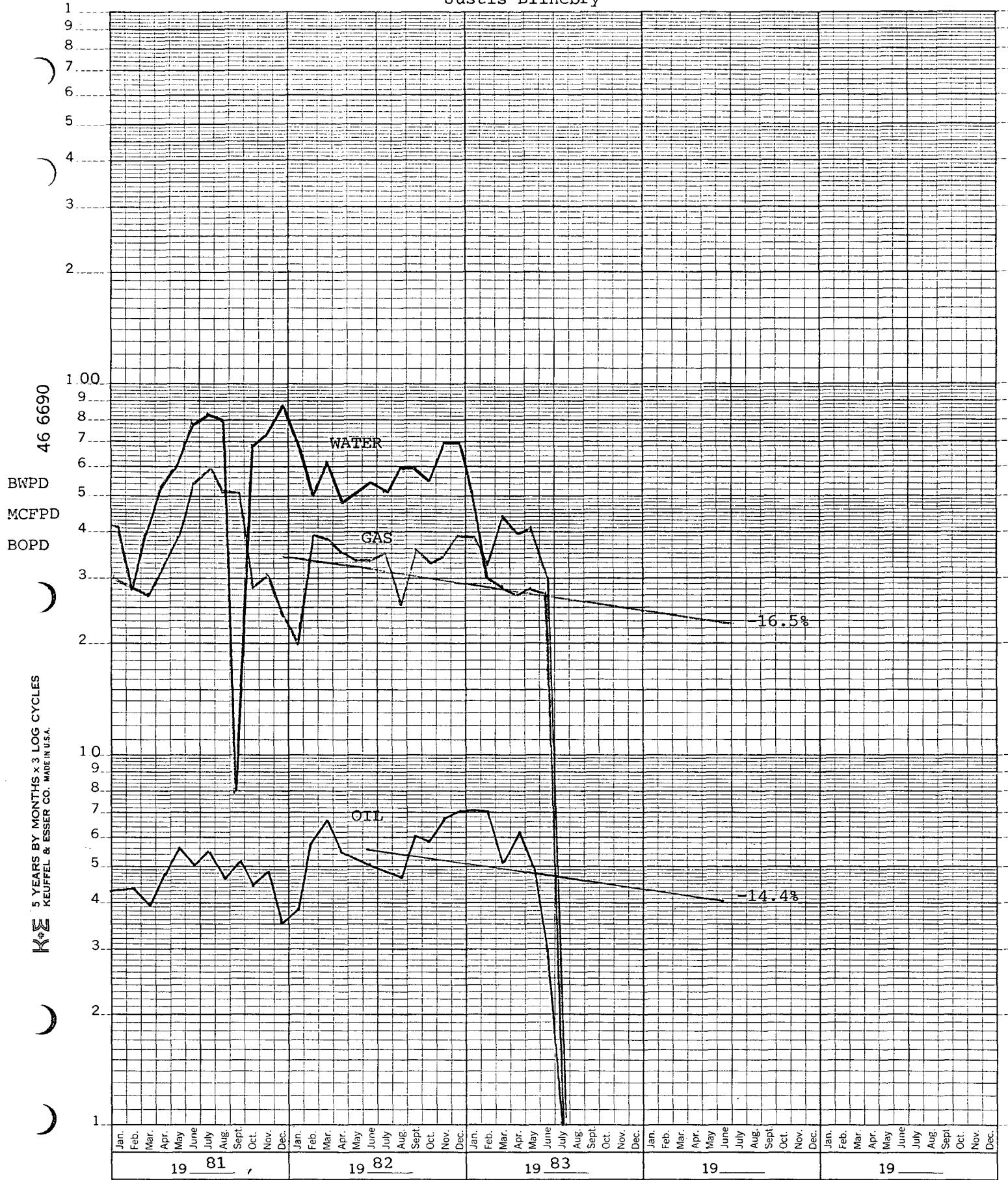
MCFPD

BWPD

BOPD



Justis Blinebry



**NEW MEXICO OIL CONSERVATION COMMISSION
GAS-OIL RATIO TESTS**

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No well will be assigned an allowable greater than the amount of oil produced on the official test.

During gas-oil ratio test, each well shall be produced at a rate not exceeding the top limit allowable for the pool in which wells located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased efficiency when authorized by the Commission.

Gas volumes must be reported in NCF measured at a pressure base of 15.035 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Report carrying pressure in line
With original and one copy of
Title 101 and environmental control

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

Report **Cash** **Breakage** **in** **Item** **of** **subsidies** **or** **revenue** **for** **any** **wall** **ministries** **through** **agent**

*Well original and one copy of this report to the district office of the New Mexico Oil Conservation Commission in accordance with
Section 10-10-1, N.M.S.A., 1953.*

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**NEW MEXICO OIL CONSERVATION COMMISSION
GAS-OIL RATIO TESTS**

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ବିଜ୍ଞାନ

No well will be assigned an allowable greater than the amount of oil produced on the official test.

During ~~any~~ ~~any~~ ratio test, each well shall be produced at a rate not exceeding the top unit allowable for the pool in which well is located by more than 25 percent. Operator is encouraged to take advantage of this 25 percent tolerance in order that well can be assigned increased allowances when authorized by the Commission.

Gas volumes must be reported in NCF measured at a pressure base of 15.025 psia and a temperature of 60° F. Specific gravity base will be 0.60.

Well original and one copy of
each issue.

131. *Amabilis*

TABLE 1
WATER ANALYSIS

LOCATION: JUSTIS BLINERAY, WELL NO. 8
DATE SAMPLED: NOVEMBER 19, 1982

MELL NO.: SAMPLE POINT:

CONSTITUENTS	PPM	MEQ PER LITER
SODIUM + POTASSIUM (NA+K)	52880	2299.222
CALCIUM (CA) แอลกอลิດ	4760	237.524
MAGNESIUM (MG) แอลกอลิດ	1366	112.367
BARIUM (BA) แอลกอลิດ	0	0.0
IRON (FE) แอลกอลิດ	0	0.0
CARBONATE (CO ₃) แอลกอลิດ	0	0.0
BICARBONATE (HCO ₃) แอลกอลิດ	557	9.293
SULFATE (SO ₄) แอลกอลิດ	2330	48.534
CHLORIDE (CL) แอลกอลิດ	92000	2595.320
SILICA (SiO ₂) แอลกอลิດ	0	0.0
STRONTIUM (SR) แอลกอลิດ	0	0.0
TOTAL DISSOLVED SOLIDS	153903	
PH AT 20 DEG C	6.45	
TOTAL ALKALINITY	0 PPM AS CaCO ₃	
TOTAL HARDNESS	17508 PPM AS CaCO ₃	

TABLE 2
WATER ANALYSIS

LOCATION: LANGLIE MATIX QUEEN, WELL NO. 3
DATE SAMPLED: APRIL 15, 1983

WELL NO.: SAMPLE POINT:

CONSTITUENTS	PPM	MEQ PER LITER
SODIUM + POTASSIUM (NA+K)	340.30	1479.624
CALCIUM (CA) แอลกอลิวัลลิวัลลิวัลลิวัล	1120	55.883
MAGNESIUM (MG) แอลกอลิวัลลิวัลลิวัล	5635	467.643
BARIUM (BA) แலแลแลแลแลแล	0	0.0
IRON (FE) แລแລแລแລแລ	12	0.215
CARBONATE (CO ₃) แລแລแລแລ	0	0.0
BICARBONATE (HCO ₃) แລแລ	15.93	25.191
SULFATE (SO ₄) แລแລ	4900	102.067
CHLORIDE (CL) แລแລ	66500	1875.965
SILICA (SiO ₂) แລแລ	0	0.0
STRONTIUM (SR) แລแລ	0	0.0
TOTAL DISSOLVED SOLIDS	113845	
PH AT 20 DEG C	7.60	
TOTAL ALKALINITY	0 PPM AS CaCO ₃	
TOTAL HARDNESS	26196 PPM AS CaCO ₃	

TABLE 3
WATER ANALYSIS

CALCULATED

MIXTURE OF 90 PERCENT CONSTITUENTS	JB-8	10 PERCENT LM-3	MEQ PER LITER
SODIUM + POTASSIUM (NA+K)	50995	2217.263	
CALCIUM (CA)	4396	219.360	
MAGNESIUM (MG)	1793	147.903	
SARIUM (Ba)	0	0.0	
IRON (FE)	1	0.018	
CARRONATE (CO ₃)	0	0.0	
BIGARRONATE (HCO ₃)	670	10.981	
SULEATE (SO ₄)	2587	53.887	
CHLORIDE (CL)	89450	2523.384	
SILICA (SiO ₂)	0	0.0	
STRONTIUM (SR)	0	0.0	
TOTAL DISSOLVED SOLIDS	149897		

PH AT 20 DEG C	6.57
TOTAL ALKALINITY	0 PPM AS CACO ₃
TOTAL HARDNESS	18377 PPM AS CACO ₃

TABLE 4
WATER ANALYSIS

MIXTURE OF 80 PERCENT CONSITUENTS		20 PERCENT	LW-3 PPM	MED. PER LITER
SODIUM + POTASSIUM (NA+K)		49110		2135.303
CALCIUM (CA)	carbonate	4032		201.197
MAGNESIUM (MG)	carbonate	2230		183.440
BARIUM (BA)	carbonate	0		0.0
IRON (FE)	carbonate	2	0.036	
CARBONATE (CO ₃)	carbonate	0	0.0	
BICARBONATE (HCO ₃)	carbonate	773	12.669	
SULFATE (SO ₄)	carbonate	2844	59.241	
CHLORIDE (CL)	chloride	86900	2451.449	
SILICA (SiO ₂)	silica	0	0.0	
STRONTIUM (SR)	carbonate	0	0.0	
TOTAL DISSOLVED SOLIDS		145891		
PH AT 20 DEG. C		6.63		
TOTAL ALKALINITY		0 PPM AS CaCO ₃		
TOTAL HARDNESS		19246 PPM AS CaCO ₃		

CALCULATED

MIXTURE OF 70 PERCENT J.B-3

CONSTITUENTS

PERCENT

PPM

LM-3

SODIUM + POTASSIUM (NA+K)

PERCENT

2053.343

CALCIUM (Ca) 36.9

PPM

183.033

MAGNESIUM (Mg) 26.2

PPM

213.976

BARIUM (Ba) 0.0

PPM

0.0

IRON (Fe) 4

PPM

0.072

CARBONATE (CO₃) 0

PPM

0.0

BICARBONATE (HCO₃) 87.0

PPM

14.358

SULFATE (SO₄) 31.01

PPM

64.594

CHLORIDE (Cl) 84350

PPM

2379.513

SILICA (SiO₂) 0

PPM

0.0

STRONTIUM (Sr) 0

PPM

0.0

TOTAL DISSOLVED SOLIDS

PPM

141886

PH AT 20 DEG C

PPM

6.80

TOTAL ALKALINITY

PPM

0

TOTAL HARDNESS

PPM AS CACO₃

20115

TABLE 6
WATER ANALYSIS

MIXTURE OF 60 PERCENT J.B.-3		40 PERCENT L.M.-3		CALCULATED
CONSTITUENTS	PPM	PERCENT	PPM	MEASURED
SODIUM + POTASSIUM (NA+K)	45340	40	19710	383
CALCIUM (CA) แคลเซียมแอดเมาเนตเตอ	3304			164.870
MAGNESIUM (MG) แมกนีเซียมแอดเมาเนตเตอ	3094			254.512
BARIUM (BA) บาริียมแอดเมาเนตเตอ	0			0.0
IRON (FE) ฟีดเอนด์แอดเมาเนตเตอ	5			0.089
CARBONATE (CO ₃) โคโรเนตเตอ	0			0.0
BICARBONATE (HCO ₃) บิโคโรเนตเตอ	979			16.046
SULFATE (SO ₄) โซลฟेटเตอ	3352			69.947
CHLORIDE (CL) คลอริดเตอ	31800			2307.573
SILICA (SiO ₂) ซิลิค้าแอดเมาเนตเตอ	0			0.0
STRONTIUM (SR) สตรอนที่เมตเตอ	0			0.0
TOTAL DISSOLVED SOLIDS		137880		
PH AT 20 DEG C			6.91	
TOTAL ALKALINITY			0 PPM AS CACO ₃	
TOTAL HARDNESS			20984 PPM AS CACO ₃	

TABLE 7
WATER ANALYSIS

CALCULATED

MIXTURE OF 50 PERCENT CONSITUENTS	JB-8	50 PERCENT PPM	LM-3	MEQ. DEQ. LITER
SODIUM + POTASSIUM (NA+K)		4 3455		1889.423
CALCIUM (CA)		294.0		146.706
MAGNESIUM (MG)		352.6		290.049
BARIUM (BA)		0		0.0
IRON (FE)	6		0.107	
CARBONATE (CO ₃)	0		0.0	
BICARBONATE (HCO ₃)		1.033		17.750
SULFATE (SO ₄)		361.5		75.300
CHLORIDE (CL)		79250		2235.642
SILICA (SiO ₂)		0		0.0
STRONTIUM (SR)		0		0.0
TOTAL DISSOLVED SOLIDS		1338.75		
PH AT 20 DEG C			7.03	
TOTAL ALKALINITY		0 PPM AS CaCO ₃		
TOTAL HARDNESS		21354 PPM AS CaCO ₃		

TABLE 8
WATER ANALYSIS

MIXTURE OF 40 PERCENT JG-3 CONSTITUENTS	CALCULATED PPM	PERCENT LM-3 PPM	MEQ. PER LITER
SODIUM + POTASSIUM (NA+K)	4157.0		1807.464
CALCIUM (CA)	257.6		123.542
MAGNESIUM (MG)	395.7		325.503
BARIUM (BA)	0		0.0
IRON (FE)	7		0.125
CARBONATE (CO ₃)	0		0.0
BICARBONATE (HCO ₃)	118.6		19.439
SULFATE (SO ₄)	387.2		30.654
CHLORIDE (CL)	7670.0		2163.707
SILICA (SiO ₂)	0		0.0
STRONTIUM (SR)	0		0.0
TOTAL DISSOLVED SOLIDS	12986.8		
PH AT 20 DEG C	7.14		
TOTAL ALKALINITY	0 PPM AS CaCO ₃		
TOTAL HARDNESS	22719 PPM AS CaCO ₃		

TABLE 9
WATER ANALYSIS

MIXTURE OF 30 PERCENT CONSTITUENTS		J-3-8	70 PERCENT PPM	L.M.-3 PERCENT PPM	CALCULATED MIXED PERCENT PPM
SODIUM + POTASSIUM (NA+K)		396.35		1725.504	
CALCIUM (CA) แคลเซียมแคลเซียมแคลเซียม		221.2		110.379	
MAGNESIUM (MG) แมกนีเซียมแมกนีเซียม		438.9		361.039	
SARIUM (SA) แสਰัมแສรัมแສรัมแສรัม		0		0.0	
IRON (FE) ฟีดฟีดฟีดฟีดฟีดฟีด		8		0.143	
CARONATE (CO ₃) โคโนนต์โคโนนต์โคโนนต์		0		0.0	
BICARBONATE (HCO ₃) บิคาร์บอเนตบิคาร์บอเนต		123.3		21.127	
SULFATE (SO ₄) โซลฟัตโซลฟัตโซลฟัต		412.9		85.007	
CHLORIDE (CL) ชลโหริดชลโหริดชลโหริด		7415.0		2091.771	
SILICA (SiO ₂) ซิลิค้าซิลิค้าซิลิค้า		0		0.0	
STRONTIUM (SR) แสตรอนที่มัสตรอนที่มัสตรอนที่		0		0.0	
TOTAL DISSOLVED SOLIDS			1258.62		
PH AL 20 DEG C			7.26		
TOTAL ALKALINITY			0 PPM AS CACO ₃		
TOTAL HARDNESS			23588 PPM AS CACO ₃		

TABLE 10
WATER ANALYSIS

CONSTITUENTS	CALCULATED		MEQ. PER LITER
	MIXTURE OF 20 PERCENT J-B-8	80 PERCENT LM-3	
SODIUM + POTASSIUM (NA+K)	37800		1643.544
CALCIUM (CA) ဓରନେ ପାଇଲାଗିଥିଲାଏକାଳେକାଳେ	1843		92.215
MAGNESIUM (MG) ପାଇଲାଗିଥିଲାଏକାଳେକାଳେ	4.821		396.575
SARLIUM (BA) ପାଇଲାଗିଥିଲାଏକାଳେକାଳେ	0		0.0
IRON (FE) ପାଇଲାଗିଥିଲାଏକାଳେକାଳେ	10		0.179
CARBONATE (CO ₃) ପାଇଲାଗିଥିଲାଏକାଳେକାଳେ	0		0.0
BICARBONATE (HCO ₃) ପାଇଲାଗିଥିଲାଏକାଳେକାଳେ	1392		22.315
SULFATE (SO ₄) ପାଇଲାଗିଥିଲାଏକାଳେକାଳେ	4336		91.360
CHLORIDE (CL) ପାଇଲାଗିଥିଲାଏକାଳେକାଳେ	71600		2019.836
SILICA (SiO ₂) ପାଇଲାଗିଥିଲାଏକାଳେକାଳେ	0		0.0
STRONTIUM (SR) ପାଇଲାଗିଥିଲାଏକାଳେକାଳେ	0		0.0
TOTAL DISSOLVED SOLIDS	121857		
PH AT 20 DEG C	7.37		
TOTAL ALKALINITY	0 PPM AS CaCO ₃		
TOTAL HARDNESS	24457 PPM AS CaCO ₃		

TABLE 11
WATER ANALYSIS

MIXTURE OF 10 PERCENT JB-8		90 PERCENT LM-3		CALCULATED	
CONSTITUENTS		PPM		MEG. PER LITER	
SODIUM + POTASSIUM (NA+K)		35915		1561.584	
CALCIUM (CA)	1.0000000000000001	1484		74.052	
MAGNESIUM (MG)	0.0000000000000001	5253		432.112	
BARIUM (BA)	0.0000000000000001	0		0.0	
IRON (FE)	0.0000000000000001	11		0.197	
CARBONATE (CO ₃)	0.0000000000000001	0		0.0	
BICARBONATE (HCO ₃)	0.0000000000000001	1495		24.503	
SULFATE (SO ₄)	0.0000000000000001	4643		96.714	
CHLORIDE (CL)	0.0000000000000001	69050		1947.900	
SILICA (SiO ₂)	0.0000000000000001	0		0.0	
STRONTIUM (SR)	0.0000000000000001	0		0.0	
TOTAL DISSOLVED SOLIDS		117851			
PH AT 20 DEG C		7.49			
TOTAL ALKALINITY		0 PPM AS CACO ₃			
TOTAL HARDNESS		25326 PPM AS CACO ₃			

TABLE 12
WATER ANALYSIS

MEASURED PH AND TOTAL ALKALINITY VALUES
FOR MIXTURES OF JB-8 AND LM-3 WATERS

PERCENT COMPOSITION (VOLUME)	PH AT		TOTAL ALKALINITY (AS PPM CACO ₃)	
	JB-8	LM-3	20.0 DEG C	0
100	0	0	6.45	0
90	10	10	6.57	0
80	20	20	6.68	0
70	30	30	6.80	0
60	40	40	6.91	0
50	50	50	7.03	0
40	60	60	7.14	0
30	70	70	7.26	0
20	80	80	7.37	0
10	90	90	7.49	0
0	100	100	7.60	0

SUCKER ROD STRING DESIGN AND ANALYSIS PROGRAM

PAGE : 1

FIELD NAME: LANGLIE MATIX QUEEN - JUSTIS BLINERY

LEASE NAME: C. D. RIGGS "B"

*** DESIGN REPORT ***

INPUT:

PUMP DEPTH 5410. FLUID LIFT 5010. TUBING SIZE 2.375 ANCHORED? NO BPD REQUIRED 68.

API OIL GRAVITY 37. % WATER CUT 85. FLD SPEC GRAV 0.955 PUMP BORE 1.500 POLISHED ROD TRVL 54.

STROKES PER MIN 10.0 SYNCH SPEED? NO 3-WAY DESIGN WITHOUT SINKER BARS TYPE: ***

RESULTS:

BEST STRING DESIGN USE GRADE C SUCKER RODS

SIZE PERCENT FOOTAGE * WEIGHT OF STRING 11535.2 LBS DYNAMIC ROD LOAD 12418.7 LBS

8 27. 1461. * FLUID LOAD 2751.1 LBS DYNAMIC FLD LOAD 2961.8 LBS

7 27. 1461. * STATIC LOAD 14286.3 LBS PK • POL ROD LOAD 15380.6 LBS

6 46. 2489. * ACCELERATION FACTOR 1.077 MAX UNIT STRESS 19583.2 PSI

SINKER BARS *** * MINIMUM LOAD 7883.2 LBS COUNTERBAL REQD 12911. LBS

USE: 0. 0. * LOAD RANGE 7497.4 LBS PEAK TORQUE 95906. IN-LBS

***** * POLISHED ROD HP 5.4 INPUT HP 11.0

CORRECTED FOR OVERTRAVEL 57.5 ROD-TUBING STRETCH 20.5 IN NET PLUNGER TRAVEL 37.0 IN

PRODUCTION AT 100% V.E. 96.8

PUMP PRODUCTION VOLUMETRIC EF 70.%

TABLE 13
WATER ANALYSIS

CALCIUM CARBONATE STABILITY INDEX
JB-8 - LM-3 WATERS
SI = PH-PCA-PALK-K

		COMPOSITION (PERCENT)	MU	20 DEG C	K	CA PPM	PCA PPM	HCO ₃ PPM	PALK	PH	20 DEG C	SI	20 DEG C
1	2	3	4	5	6	7	8	9	10	11	12	13	14
JB-8	-	0	LM-3	2.8504	3.22	4760	0.93	557	2.03	5.45	0.27	0.27	0.27
90	-	10	LM-3	2.7970	3.24	4396	0.96	670	1.96	6.57	0.41	0.41	0.41
80	-	20	LM-3	2.7436	3.25	4032	1.00	773	1.90	6.68	0.53	0.53	0.53
70	-	30	LM-3	2.6902	3.26	3668	1.04	875	1.84	6.80	0.66	0.66	0.66
60	-	40	LM-3	2.6368	3.27	3304	1.08	979	1.79	6.91	0.76	0.76	0.76
50	-	50	LM-3	2.5835	3.28	2940	1.13	1083	1.75	7.03	0.86	0.86	0.86
40	-	60	LM-3	2.5300	3.30	2576	1.19	1186	1.71	7.14	0.93	0.93	0.93
30	-	70	LM-3	2.4765	3.32	2212	1.26	1239	1.68	7.26	1.00	1.00	1.00
20	-	80	LM-3	2.4233	3.34	1848	1.34	1392	1.64	7.37	1.05	1.05	1.05
10	-	90	LM-3	2.3699	3.36	1434	1.43	1495	1.61	7.49	1.09	1.09	1.09
0	-	100	LM-3	2.3165	3.37	3.37	1.55	1598	1.58	7.60	1.09	1.09	1.09
31	32	33	34	35	36	37	38	39	40	41	42	43	44
45	46	47	48	49	50	51	52	53	54	55	56	57	58

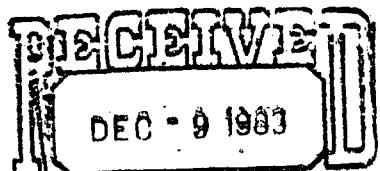
TABLE 15
WATER ANALYSIS

BARIUM SULFATE STABILITY						
	JS-3	- LM-3	WATERS			
	KSP =	(BA MOL/L)	(SO4 MOL/L)			
4	COMPOSITION	BA MOL/L	KSP (x 10-3)	CHLORIDE PPM	KSPC (x 10-9) 20DEG C	REMARKS
5		SO4 MOL/L				PPT-D BASO4 PPM
6						
7	100 JB-3	0 LM-3	0.0	0.02426	0.0	16.84868 NO BASO4 DEPOSITION
8	90 JB-3	10 LM-3	0.0	0.02693	0.0	16.50607 NO BASO4 DEPOSITION
9						
10						
11	80 JB-8	20 LM-3	0.0	0.02961	0.0	16.16209 NO BASO4 DEPOSITION
12	70 JB-8	30 LM-3	0.0	0.03223	0.0	15.81623 NO BASO4 DEPOSITION
13						
14						
15						
16	60 JB-8	40 LM-3	0.0	0.03496	0.0	15.46731 NO BASO4 DEPOSITION
17	50 JB-3	50 LM-3	0.0	0.03763	0.0	15.11473 NO BASO4 DEPOSITION
18						
19						
20	40 JB-8	60 LM-3	0.0	0.04031	0.0	14.75767 NO BASO4 DEPOSITION
21						
22	30 JB-3	70 LM-3	0.0	0.04298	0.0	14.40194 NO BASO4 DEPOSITION
23						
24						
25	20 JB-8	80 LM-3	0.0	0.04566	0.0	14.02879 NO BASO4 DEPOSITION
26						
27	10 JB-3	90 LM-3	0.0	0.04833	0.0	13.64739 NO BASO4 DEPOSITION
28						
29	0 JB-3	100 LM-3	0.0	0.05101	0.0	13.22797 NO BASO4 DEPOSITION
30						
31						
32						
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TABLE 17
WATER ANALYSIS

STRONTIUM SULFATE STABILITY		KSP = (SR VOL/L) (SO4 MOL/L)		PPT-D SRSO4 PPM	
JB-B - LM-3 WATERS		WATERS		25DEG C	
COMPOSITION	MOL/L	KSP (x10-3)	CHLORIDE PPM	KSPC (x10-7)	REMARKS
5	6	7	8	9	10
100	JB-8	-	0	LM-3	0.0
90	JB-8	-	10	LM-3	0.0
80	JB-8	-	20	LM-3	0.0
70	JB-8	-	30	LM-3	0.0
60	JB-8	-	40	LM-3	0.0
50	JB-8	-	50	LM-3	0.0
40	JB-8	-	60	LM-3	0.0
30	JB-8	-	70	LM-3	0.0
20	JB-8	-	80	LM-3	0.0
10	JB-8	-	90	LM-3	0.0
0	JB-8	-	100	LM-3	0.0
1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50	51	52	53	54
55	56	57	58	59	60
61	62	63	64	65	66
67	68	69	70	71	72
73	74	75	76	77	78
79	80	81	82	83	84
85	86	87	88	89	90
91	92	93	94	95	96
97	98	99	100	101	102
103	104	105	106	107	108
109	110	111	112	113	114
115	116	117	118	119	120
121	122	123	124	125	126
127	128	129	130	131	132
133	134	135	136	137	138
139	140	141	142	143	144
145	146	147	148	149	150
151	152	153	154	155	156
157	158	159	160	161	162
163	164	165	166	167	168
169	170	171	172	173	174
175	176	177	178	179	180
181	182	183	184	185	186
187	188	189	190	191	192
193	194	195	196	197	198
199	200	201	202	203	204
205	206	207	208	209	210
211	212	213	214	215	216
217	218	219	220	221	222
223	224	225	226	227	228
229	230	231	232	233	234
235	236	237	238	239	240
241	242	243	244	245	246
247	248	249	250	251	252
253	254	255	256	257	258
259	260	261	262	263	264
265	266	267	268	269	270
271	272	273	274	275	276
277	278	279	280	281	282
283	284	285	286	287	288
289	290	291	292	293	294
295	296	297	298	299	300
301	302	303	304	305	306
307	308	309	310	311	312
313	314	315	316	317	318
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325	326	327	328	329	330
331	332	333	334	335	336
337	338	339	340	341	342
343	344	345	346	347	348
349	350	351	352	353	354
355	356	357	358	359	360
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463	464	465	466	467	468
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493	494	495	496	497	498
499	500	501	502	503	504
505	506	507	508	509	510
511	512	513	514	515	516
517	518	519	520	521	522
523	524	525	526	527	528
529	530	531	532	533	534
535	536	537	538	539	540
541	542	543	544	545	546
547	548	549	550	551	552
553	554	555	556	557	558
559	560	561	562	563	564
565	566	567	568	569	570
571	572	573	574	575	576
577	578	579	580	581	582
583	584	585	586	587	588
589	590	591	592	593	594
595	596	597	598	599	600
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607	608	609	610	611	612
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619	620	621	622	623	624
625	626	627	628	629	630
631	632	633	634	635	636
637	638	639	640	641	642
643	644	645	646	647	648
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655	656	657	658	659	660
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709	710	711	712	713	714
715	716	717	718	719	720
721	722	723	724	725	726
727	728	729	730	731	732
733	734	735	736	737	738
739	740	741	742	743	744
745	746	747	748	749	750
751	752	753	754	755	756
757	758	759	760	761	762
763	764	765	766	767	768
769	770	771	772	773	774
775	776	777	778	779	780
781	782	783	784	785	786
787	788	789	790	791	792
793	794	795	796	797	798
799	800	801	802	803	804
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803	804	805	806	807	808
809</td					

OIL CONSERVATION DIVISION
DISTRICT 1



OIL CONSERVATION DIVISION
SANTA FE

OIL CONSERVATION DIVISION
P. O. BOX 2088
SANTA FE, NEW MEXICO 87501

DATE December 6, 1983

RE: Proposed MC _____
Proposed DHC X
Proposed NSL _____
Proposed NSP _____
Proposed SWD _____
Proposed WFX _____
Proposed PMX _____

Gentlemen:

I have examined the application for the:

Getty Oil Company G. D. Riggs "B" No. 8-B 1-26-37
Operator Lease and Well No. Unit, S - T - R

and my recommendations are as follows:

O.K.-----J.S.

Yours very truly,

Jimmy Lester
mc