

FIGURE 1

WELL	INTERVAL CORED				
	LOCO HILLS		METEX		PREMIER
KENNEDY #4	NC		6' @14.6%		12' @15.2%
CARPER G-3	NC		NC		NC
KENNEDY #1	NC		23' @12.4%		10' @12.4%
KENNEDY #3	NC		7' @18.5%		6' @16.3%
KENNEDY #5	NC		10' @14.1%		6' @12.0%
KENNEDY #6	2' @ 8%		4' @14.5%		16' @11.4%
VICKERS #4	NC		NC		NC

NORTH SQUARE LAKE UNIT CORE DATA
(FEET OF POROSITY > 10 %)

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

Page 1 of 1 File WP-3-1656
 Well Kennedy No. 4

CORE SUMMARY AND CALCULATED RECOVERABLE OIL

FORMATION NAME AND DEPTH INTERVAL: Grayburg-San Andres - 3283.5 - 3526.0

FEET OF CORE RECOVERED FROM ABOVE INTERVAL	148.5	AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	40.6
FEET OF CORE INCLUDED IN AVERAGES	29.0	AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE (e)	25
AVERAGE PERMEABILITY: MILLIDARCY'S Max. 90°	21 <0.1	OIL GRAVITY: °API (e)	35
PRODUCTIVE CAPACITY: MILLIDARCY-Feet Max. 90°	609 1.5	ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL (e)	400
AVERAGE POROSITY: PER CENT	14.0	ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL (e)	1.26
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE	19.1	CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	646

Calculated maximum solution gas drive recovery is barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. *(Please refer to footnotes for further discussion of recovery estimates.)*

FORMATION NAME AND DEPTH INTERVAL:

FEET OF CORE RECOVERED FROM ABOVE INTERVAL		AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	
FEET OF CORE INCLUDED IN AVERAGES		AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE	
AVERAGE PERMEABILITY: MILLIDARCY'S		OIL GRAVITY: °API	
PRODUCTIVE CAPACITY: MILLIDARCY-Feet		ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL	
AVERAGE POROSITY: PER CENT		ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL	
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE		CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	

Calculated maximum solution gas drive recovery is barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. *(Please refer to footnotes for further discussion of recovery estimates.)*

(c) Calculated (e) Estimated (m) Measured (*) Refer to attached letter.

These recovery estimates represent theoretical maximum values for solution gas and water drive. They assume that production is continued at original reservoir pressure; i.e., no account is taken of production to date or of prior drainage to other areas. The effects of factors tending to reduce actual ultimate recovery, such as economic limits on oil production rates, gas-oil ratios, or water-oil ratios, have not been taken into account. Neither have factors been considered which may result in actual recovery intermediate between solution gas and complete water drive recoveries, such as gas cap expansion, gravity drainage, or partial water drive. Detailed predictions of ultimate oil recovery to specific abandonment conditions may be made in an engineering study in which overall reservoir characteristics and economic factors.

FIGURE 1a

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose account is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. full service and emissions reports.

CORE LABORATORIES, INC.



Petroleum Reservoir Engineering

COMPANY BTA OIL PRODUCERS FILE NO. WP-3-1656
 WELL KENNEDY NO. 4 DATE 5-2-61 ENGRS BOONE
 FIELD SQUARE LAKE FORMATION AS NOTED ELEV. _____
 COUNTY EDDY STATE NEW MEXICO DRILLING FLUID WATER BASE MUD CORES DIAMOND 4 3/8"
 LOCATION _____ REMARKS SAMPLED AS DIRECTED BY CLIENT

COMPLETION COREGRAPH

These analyses, opinions or interpretations are based on observations and material supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions excepted) but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations as to the productivity, proper operation, or profitability of any oil, gas or other mineral well or sand in connection with which such report is used or relied upon.

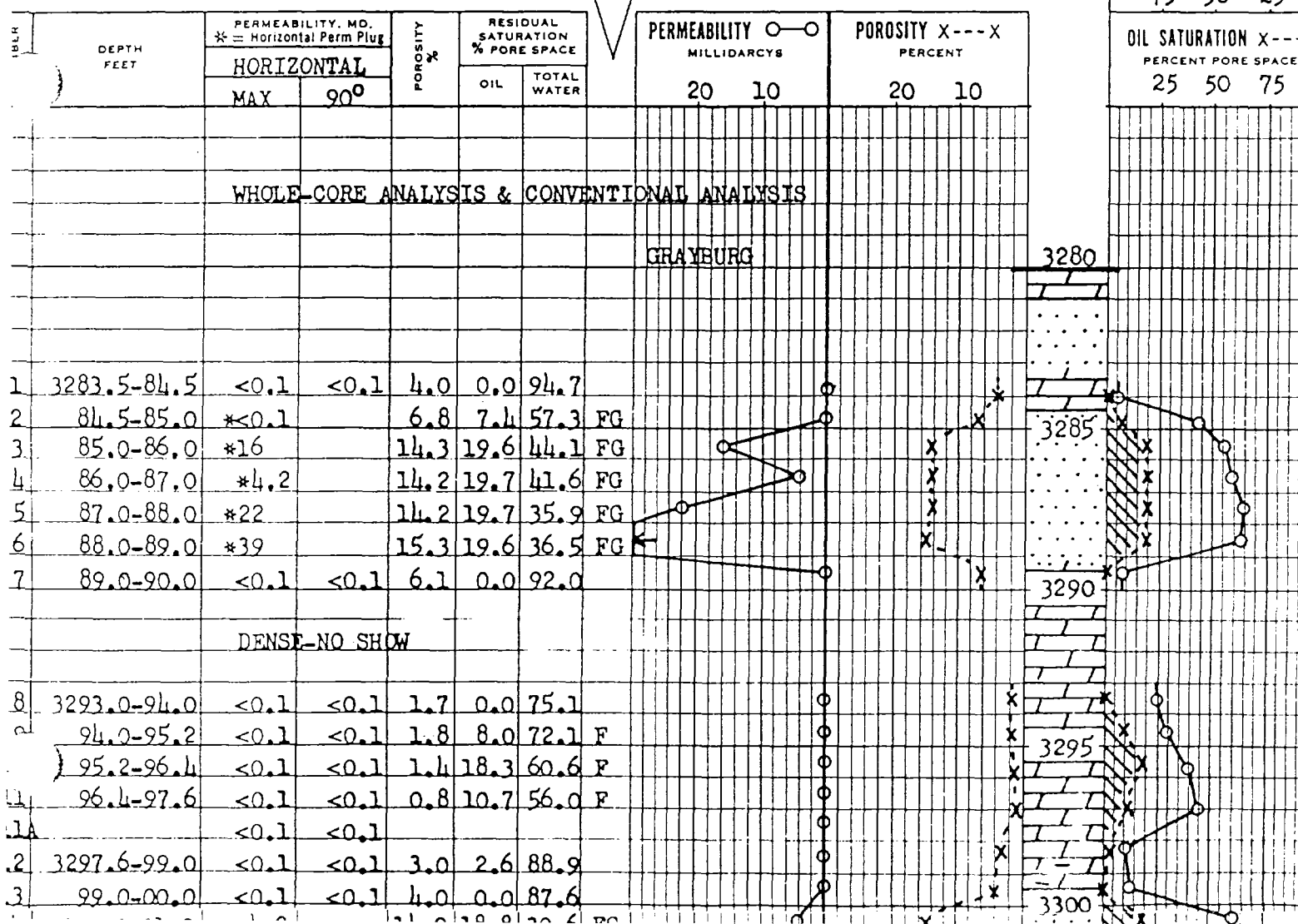


SAMPLE CHARACTERISTICS
Fractured L=Laminated FG; MG; CG=Type Grain Size S:Styolitic V:Vuggy

PROBABLE PRODUCTION
O=Oil W=Water G=Gas T=Transitional

TOTAL WATER ○—○
PERCENT PORE SPACE
75 50 25

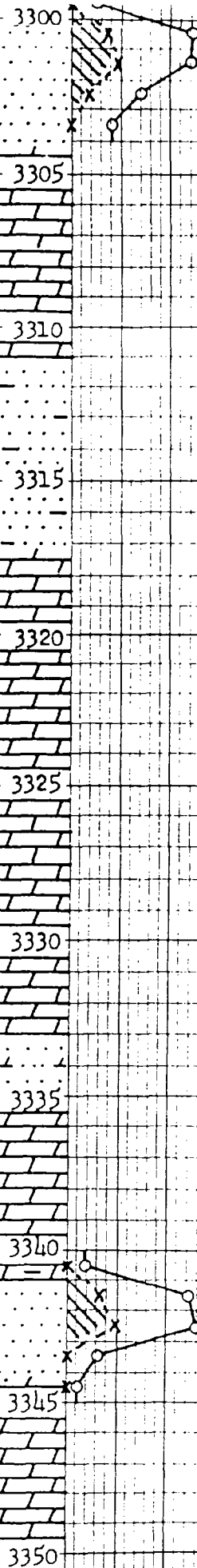
OIL SATURATION X---X
PERCENT PORE SPACE
25 50 75

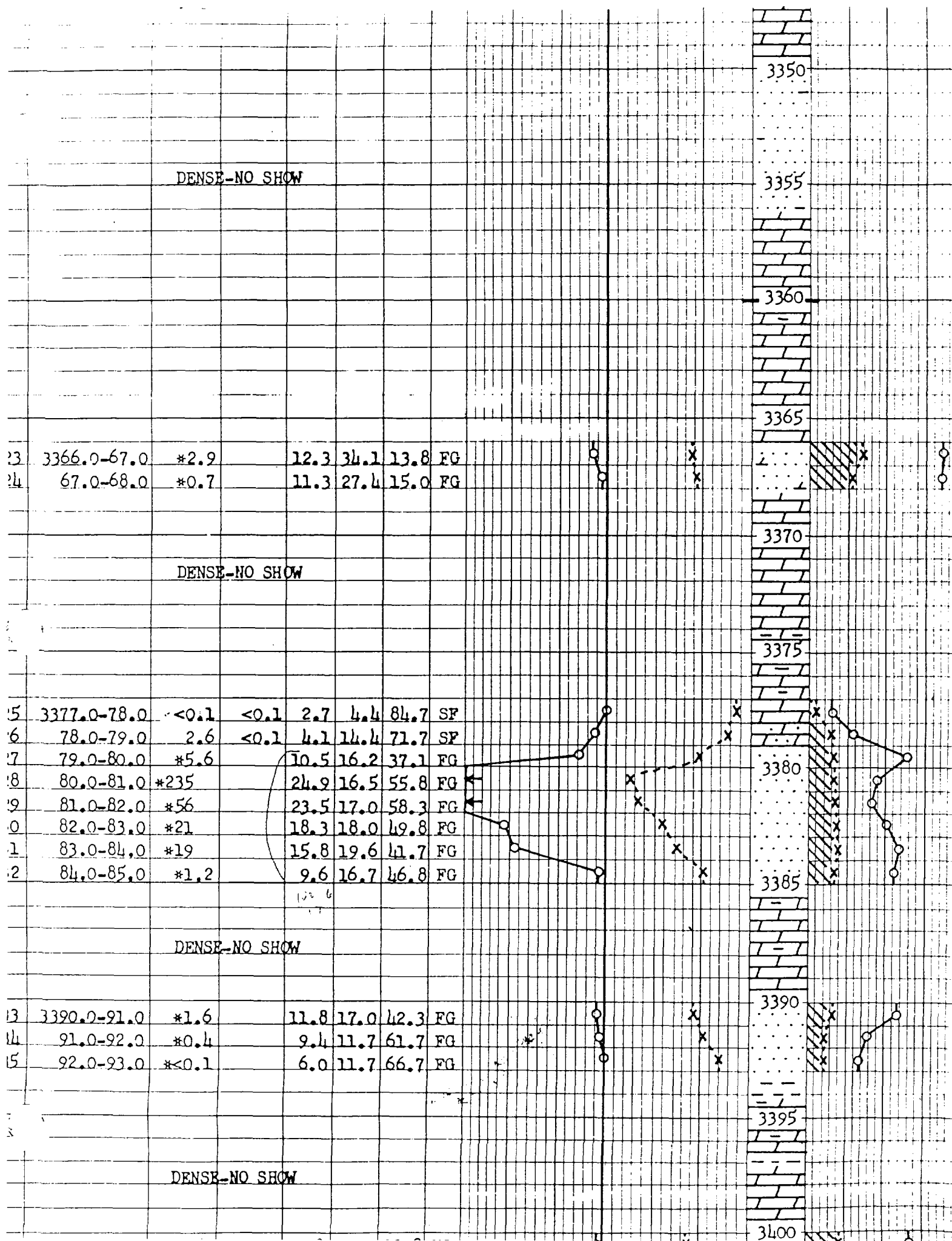


14	3300.0-01.0	*4.2	14.9	18.8	39.6	FG
15	01.0-02.0	*7.4	15.1	23.2	39.7	FG
16	02.0-03.0	*0.1	9.3	9.7	64.5	FG
17	03.0-04.0	*<0.1	4.8	0.0	79.2	FG

DENSE-NO SHOW

8	3340.0-41.0	<0.1	<0.1	3.4	0.0	91.3
9	41.0-42.0	*53	18.4	16.3	38.1	FG
0	42.0-43.0	*1.6	10.8	24.1	35.2	FG
1	43.0-44.0	*<0.1	7.5	0.0	84.0	FG
2	44.0-45.0	<0.1	<0.1	2.9	0.0	94.0





3400.0-01.0	*0.4	12.8	21.9	32.8	FG
01.0-02.0	*0.4	13.1	20.6	41.2	FG
02.0-03.0	*0.1	11.6	4.3	82.7	FG

DENSE-NO SHOW

SAN ANDRES

3400

3405

3410

3411

DRILLED

3505

3510

3515.0-16.0	*0.1	3.1	16.1	64.5	FG
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DENSE-NO SHOW

3519.0-20.0	*23	20.8	20.6	41.8	FG
20.0-21.0	*82	19.9	16.6	41.7	FG
21.0-22.0	*1.6	10.4	17.3	31.7	FG
22.0-23.0	*6.5	10.3	14.6	26.2	FG
23.0-24.0	*3.7	11.0	18.2	22.7	FG
24.0-25.0	*3.3	18.3	19.7	33.9	FG
25.0-26.0	*1.2	11.4	24.5	35.1	FG

12² 1
14⁶

3520

3525

3530

3535

DENSE-NO SHOW

3535

3540

3545

3550

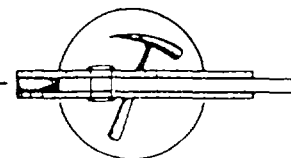
3555

3560

3562

RILEY G. *Maxwell* COMPANY

ABILENE . WICHITA FALLS . HOBBS . PAMPA



CORE ANALYSIS

COMPANY Newmont Oil Company
 EE Carper "G" WELL NO 3
 IELD Square Lake
 OCATION 1980' FSL & 1880' FEL of Sec. 29,
T16S, R31E.
 UNTY Eddy STATE New Mexico

ELEVATION _____
 DRILLING FLUID Water Base Mud
 FORMATION Lovington
 TYPE OF CORE Diamond (3-1/2") DCI
 ANALYST JMB, BT, KW SERVICE "C"
 LAB. NO. H-329 DATE 6-12-61

THESE ANALYSES ARE BASED UPON ACCEPTED LABORATORY TECHNIQUES. THE OPINIONS ADVANCED REPRESENT OUR BEST JUDGMENT IN INTERPRETATION OF THE RESULTS BUT NO WARRANTY IS EXPRESSED OR IMPLIED.

G—GAS

O-OIL

TRANSITIONAL

WATER

F—FRACTURED

P-PIN POINT POROSITY

V—VUGULAR

S-STYLOLITIC

SAND



SHALE



LIMESTONE



DOLOMITE



GRANITE WASH



ANHYDRITE



TABULAR PRESENTATION

GRAPHICAL PRESENTATION

VENTIONAL CORE ANALYSIS

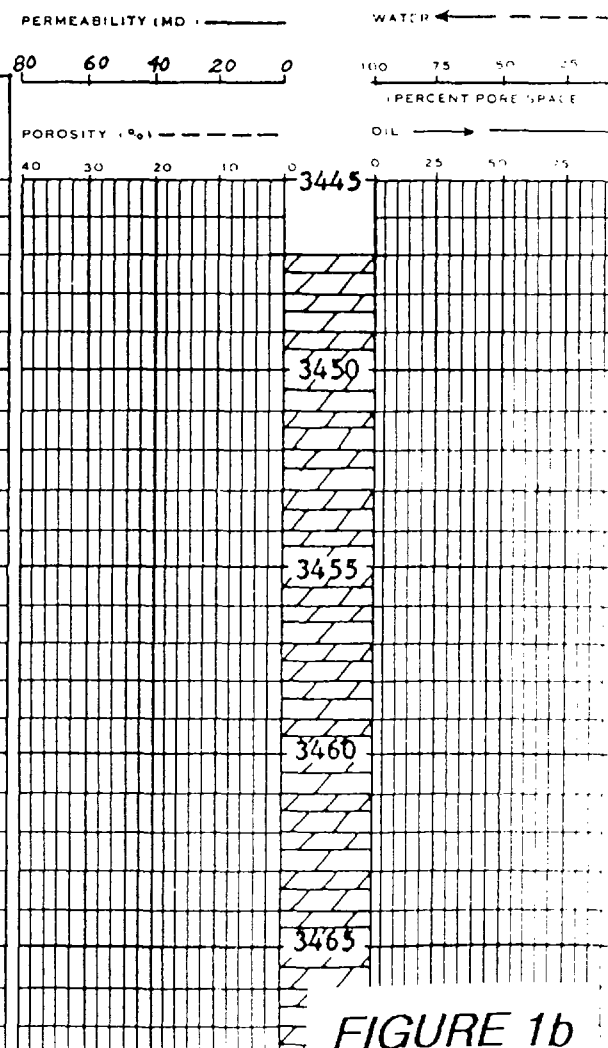
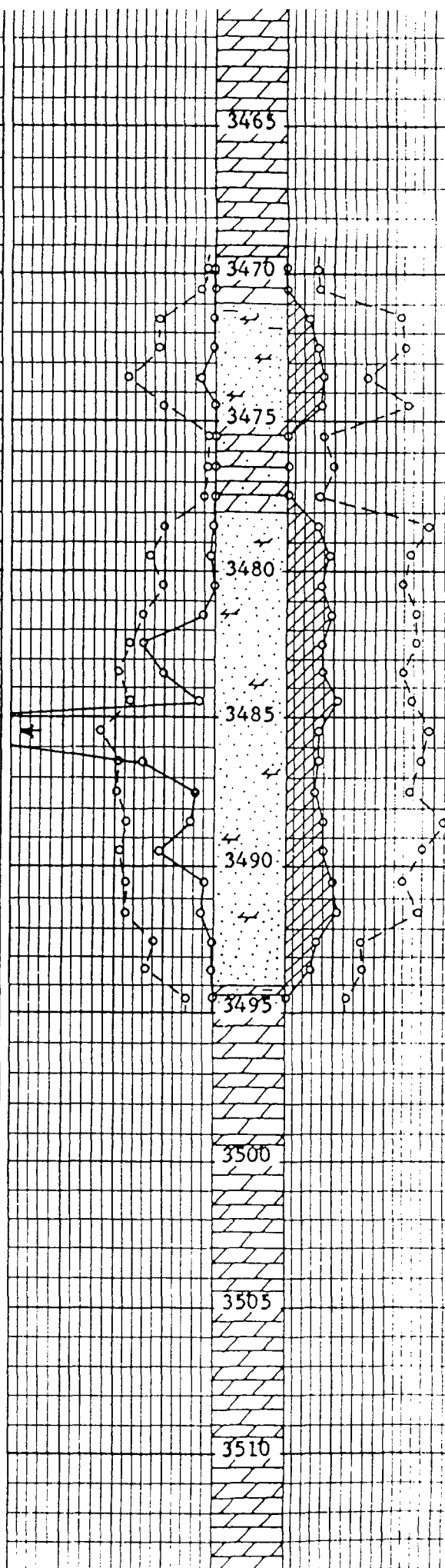
[illegible]

FIGURE 1b

1	3469.5-70.0	1.4	<0.1	0.0	83.9
2	3470.0-71.0	2.4	<0.1	0.0	82.3
3	3471.0-72.0	11.0	0.3	13.2	41.9
4	3472.0-73.0	11.1	0.3	17.5	39.6
5	3473.0-74.0	17.8	5.9	19.5	59.7
6	3474.0-75.0	10.3	0.4	19.2	38.3
7	3475.0-76.0	1.4	<0.1	0.0	80.4
8	3476.0-77.0	1.5	<0.1	0.0	75.7
9	3477.0-78.0	2.2	<0.1	0.0	82.4
0	3478.0-79.0	10.2	1.0	16.7	28.6
1	3479.0-80.0	12.8	2.0	23.2	37.3
2	3480.0-81.0	10.2	0.6	19.3	41.1
3	3481.0-82.0	14.3	4.8	24.4	34.2
4	3482.0-83.0	17.3	29	19.7	34.2
5	3483.0-84.0	19.8	21	19.7	40.4
6	3484.0-85.0	17.0	6.3	26.3	36.1
7	3485.0-86.0	22.6	102	18.0	28.4
8	3486.0-87.0	19.8	29	17.5	31.3
	3487.0-88.0	19.9	7.9	15.4	37.5
	3488.0-89.0	17.7	9.8	19.8	21.1
1	3489.0-90.0	19.3	22	20.5	30.9
2	3490.0-91.0	17.8	3.9	24.6	40.1
3	3491.0-92.0	17.9	4.8	26.3	32.8
4	3492.0-93.0	12.0	0.4	16.6	62.1
5	3493.0-94.0	13.8	0.6	14.1	61.6
6	3494.0-95.0	5.6	<0.1	0.0	69.3



CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

Page 1 of 1 File WP-3-1474
Well Kennedy Federal No. 1

CORE SUMMARY AND CALCULATED RECOVERABLE OIL

FORMATION NAME AND DEPTH INTERVAL: Grayburg-San Andres 3484.0-3794.0

FEET OF CORE RECOVERED FROM ABOVE INTERVAL	227.0	AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	44.6
FEET OF CORE INCLUDED IN AVERAGES	12.0	AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE (e)	32
AVERAGE PERMEABILITY: MILLIDARCYB	6.9	OIL GRAVITY: °API (e)	35
PRODUCTIVE CAPACITY: MILLIDARCY-FeET	83	ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL (e)	400
AVERAGE POROSITY: PER CENT	13.2	ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL (e)	1.26
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE	18.0	CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	553

Calculated maximum solution gas drive recovery is 130 barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is 369 barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. (Please refer to footnotes for further discussion of recovery estimates.)

FORMATION NAME AND DEPTH INTERVAL:

FEET OF CORE RECOVERED FROM ABOVE INTERVAL		AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	
FEET OF CORE INCLUDED IN AVERAGES		AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE	
AVERAGE PERMEABILITY: MILLIDARCYB		OIL GRAVITY: °API	
PRODUCTIVE CAPACITY: MILLIDARCY-FeET		ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL	
AVERAGE POROSITY: PER CENT		ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL	
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE		CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	

Calculated maximum solution gas drive recovery is barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. (Please refer to footnotes for further discussion of recovery estimates.)

(c) Calculated (e) Estimated (m) Measured (*) Refer to attached letter.

These recovery estimates represent theoretical maximum values for solution gas and water drive. They assume that production is at original reservoir pressure; i.e., no account is taken of production to date or of prior drainage to other areas. The effects of tending to reduce actual ultimate recovery, such as economic limits on oil production rates, gas-oil ratios, or water-oil ratios, have not been taken into account. Neither have factors been considered which may result in actual recovery intermediate between solution gas and complete water drive recoveries, such as gas cap expansion, gravity drainage, or partial water drive. Detailed predictions of ultimate oil recovery to specific abandonment conditions may be made in an engineering study in which consider overall reservoir characteristics and economic factors.

FIGURE 1c

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive use this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. and its officers and employees.

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

COMPANY BTA OIL PRODUCERS FILE NO. WP-3-1474
WELL KENNEDY FEDERAL NO. 1 DATE 5-16-60 ENGRS. BOONE
FIELD SQUARE LAKE FORMATION AS NOTED ELEV. _____
COUNTY EDDY STATE NEW MEXICO ORLG. FLD. WATER BASE MUD CORES DIAMOND 4 3/8"
LOCATION 1980 FN & 660 FEL SEC 34-T16S-R31E REMARKS SAMPLED AS DIRECTED BY CLIENT

COMPLETION COREGRAPH

These analyses, opinions or interpretations are based on observations and material supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc. (all errors and omissions accepted), but Core Laboratories, Inc. and its officers and employees, assume no responsibility and make no warranty or representations as to the productivity, proper operation, or profitability of any oil, gas or other mineral well or land in connection with which such report is used or relied upon.

SAND  LIMESTONE  CONGLOMERATE  CHERT  ANHYDRITE 

SHALE  DOLOMITE  OOLITES   

SAMPLE CHARACTERISTICS

= Fractured L= Laminated FG; MG; CG= Type Grain Size S: Stylolitic V: Yuggy

PROBABLE PRODUCTION

O=Oil W=Water G=Gas T=Transitional

TOTAL WATER 0-1

PERCENT PORE SPACE

75 50 25

OIL SATURATION X---

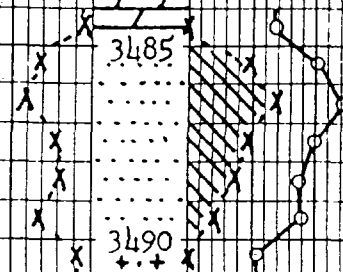
PERCENT PORE SPACE

25 50 75

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DENSE-NO SHOW

1	3484.0-85.0	<0.1	0.3	0.0	66.7	FX
2	85.0-86.0	<0.1	6.3	23.8	49.2	FG
3	86.0-87.0	0.1	8.5	34.1	38.8	FG
4	87.0-88.0	<0.1	4.2	23.8	50.0	FG
5	88.0-89.0	<0.1	3.7	18.9	56.7	FG
6	89.0-90.0	0.4	6.5	10.8	55.4	FG
7	90.0-91.0	<0.1	1.5	0.0	73.3	



DENSE-NO SHOW

8	3526.0-27.0	<0.1	6.0	0.0	80.0	FG
9	27.0-28.0	<0.1	1.8	11.1	50.0	
10	28.0-29.0	<0.1	3.4	5.9	50.0	FG
11	29.0-30.0	<0.1	2.1	0.0	61.8	FG
12	30.0-31.0	<0.1	7.1	2.8	67.6	FG
13	31.0-32.0	<0.1	7.1	0.0	77.5	FG

3500

3505

3510

3515

3520

3525

3530

3535

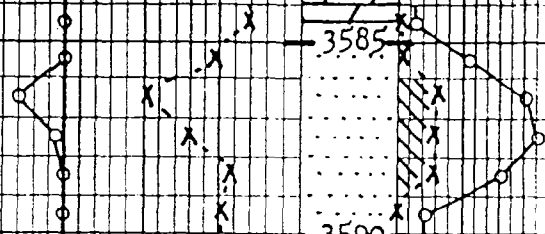
3540

3545

3550

DENSE-NO SHOW

14	3584.0-85.0	<0.1	6.4	0.0	92.2	FG
15	85.0-86.0	<0.1	11.0	1.8	72.7	FG
16	86.0-87.0	6.0	19.9	15.6	49.2	FG
17	87.0-88.0	1.1	14.5	13.8	44.1	FG
18	88.0-89.0	<0.1	8.7	13.8	58.7	FG
19	89.0-90.0	<0.1	9.7	0.0	88.7	FG



3550

3555

3560

3565

3570

3575

3580

3585

3590

3595

DENSE-NO SHOW

0	3616.0-17.0	<0.1	1.7	0.0	76.5	FX
1	17.0-18.0	<0.1	5.5	12.7	49.1	FG
2	18.0-19.0	<0.1	5.5	12.7	56.3	FG
3	19.0-20.0	<0.1	6.5	10.8	56.9	FG
4	20.0-21.0	<0.1	2.3	0.0	87.0	FX

DENSE-NO SHOW

5	3629.0-30.0	<0.1	3.3	0.0	84.8	FX
6	30.0-31.0	<0.1	6.1	19.7	47.5	FG
7	31.0-32.0	<0.1	8.3	2.4	69.9	FG
8	32.0-33.0	0.3	8.6	10.5	58.2	FG
9	33.0-34.0	0.5	14.7	21.1	39.5	FG
0	34.0-35.0	0.4	13.4	25.4	33.6	FG
1	35.0-36.0	35	20.4	19.6	42.7	FG
2	36.0-37.0	37	17.5	17.7	46.2	FG
3	37.0-38.0	0.9	11.9	21.8	34.4	FG
4	38.0-39.0	<0.1	5.0	0.0	88.0	FG

DENSE-NO SHOW

3600

3605

3610

3615

3620

3625

3630

3635

3640

3645

35	3653.0-54.0	<0.1	1.4	0.0	92.8	FX
36	54.0-55.0	0.5	10.2	13.7	47.2	FG
	55.0-56.0	<0.1	9.9	9.1	60.7	FG
	56.0-57.0	<0.1	9.0	0.0	84.5	FG

DENSE-NO SHOW

39	3665.0-66.0	<0.1	7.3	0.0	86.4	FG
40	66.0-67.0	<0.1	7.9	20.2	40.5	FG
41	67.0-68.0	<0.1	6.1	0.0	90.2	

SAN ANDRES

DENSE-NO SHOW

73.0-74.0	<0.1	2.8	46.4	46.4	FX
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DENSE-NO SHOW

3655

3660

3665

3670

3675

3680

3685

3687

DRILLED

3770

3775

DENSE-NO SHOW

3820

3825

3830

3835

3840

3845

3847

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

Page 1 of 1 File WP-3-1531
Well Kennedy No. 3

CORE SUMMARY AND CALCULATED RECOVERABLE OIL

FORMATION NAME AND DEPTH INTERVAL: Grayburg-San Andres 3445.0-3674.0

FEET OF CORE RECOVERED FROM ABOVE INTERVAL	136.0	AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	51.1
FEET OF CORE INCLUDED IN AVERAGES	21.0	AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE (e)	32
AVERAGE PERMEABILITY: MILLIDARCYs	25	OIL GRAVITY: °API (e)	35
PRODUCTIVE CAPACITY: MILLIDARCY-Feet	525	ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL (e)	400
AVERAGE POROSITY: PER CENT	16.3	ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL (e)	1.26
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE	14.6	CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	683

Calculated maximum solution gas drive recovery is 159 barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is 498 barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. (Please refer to footnotes for further discussion of recovery estimates.)

FORMATION NAME AND DEPTH INTERVAL:

FEET OF CORE RECOVERED FROM ABOVE INTERVAL		AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	
FEET OF CORE INCLUDED IN AVERAGES		AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE	
AVERAGE PERMEABILITY: MILLIDARCYs		OIL GRAVITY: °API	
PRODUCTIVE CAPACITY: MILLIDARCY-Feet		ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL	
AVERAGE POROSITY: PER CENT		ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL	
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE		CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	

Calculated maximum solution gas drive recovery is barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. (Please refer to footnotes for further discussion of recovery estimates.)

— Calculated (e) Estimated (m) Measured (*) Refer to attached letter.

These recovery estimates represent theoretical maximum values for solution gas and water drive. They assume that production is started at original reservoir pressure; i.e., no account is taken of production to date or of prior drainage to other areas. The effects of factors tending to reduce actual ultimate recovery, such as economic limits on oil production rates, gas-oil ratios, or water-oil ratios, have not been taken into account. Neither have factors been considered which may result in actual recovery intermediate between solution gas and complete water drive recoveries, such as gas cap expansion, gravity drainage, or partial water drive. Detailed predictions of ultimate oil recovery to specific abandonment conditions may be made in an engineering study in which consideration is given to overall reservoir characteristics and economic factors.

FIGURE 1d

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

COMPANY	BTA OIL PRODUCERS		FILE NO.	WP-3-1531	
WELL	KENNEDY NO. 3	DATE	8-24-60	ENGRS.	BOONE
FIELD	SQUARE LAKE	FORMATION	AS NOTED	ELEV.	4017' DF
COUNTY	EDDY	STATE	NEW MEXICO	DRLG. FLD	WATER BASE MUD
LOCATION	2310 FS & 1650 FWL SEC 28-T16S-R31E		REMARKS	SAMPLED AS DIRECTED BY CLIENT	
				CORES	DIAMOND 4 3/8"

COMPLETION COREGRAPH

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SAND

SHALE

LIMESTONE

DOLOMITE

CONGLOMERATE 

OOLITES 

CHERT 

ANHYDRITE 

SAMPLE CHARACTERISTICS

Fractured L=Laminated FG; MG; CG=Type Grain Size S=Stylolitic V=Yuggy

PROBABLE PRODUCTION

O=Oil W=Water G=Gas T=Transitional

TOTAL WATER
PERCENT PORE SPACE
75 50 25

OIL SATURATION X---
PERCENT PORE SPACE
25 50 75

DEPTH FEET	PERMEABILITY, MD. * = Horizontal Perm Plug		POROSITY %	RESIDUAL SATURATION % PORE SPACE		PERMEABILITY 	POROSITY X---X
	HORIZONTAL			OIL	TOTAL WATER	MILLIDARCYs	PERCENT
	*					20	10
CONVENTIONAL ANALYSIS							
GRAYBURG							

DENSE-NO SHOW

3425

3430

3435

3440

3445

3450

3455

3460

3465

3470

3475

3445.0-46.0	<0.1	3.1	0.0	96.8	FX
46.0-47.0	0.1	12.3	4.1	68.2	FG
47.0-48.0	306	24.1	15.3	48.1	FG
48.0-49.0	15	23.9	15.9	48.0	FG
49.0-50.0	40	22.9	17.0	45.8	FG
50.0-51.0	44	24.3	16.4	49.0	FG
51.0-52.0	0.8	10.6	15.1	51.0	FG
52.0-53.0	<0.1	3.8	0.0	94.7	FX

DENSE- NO SHOW

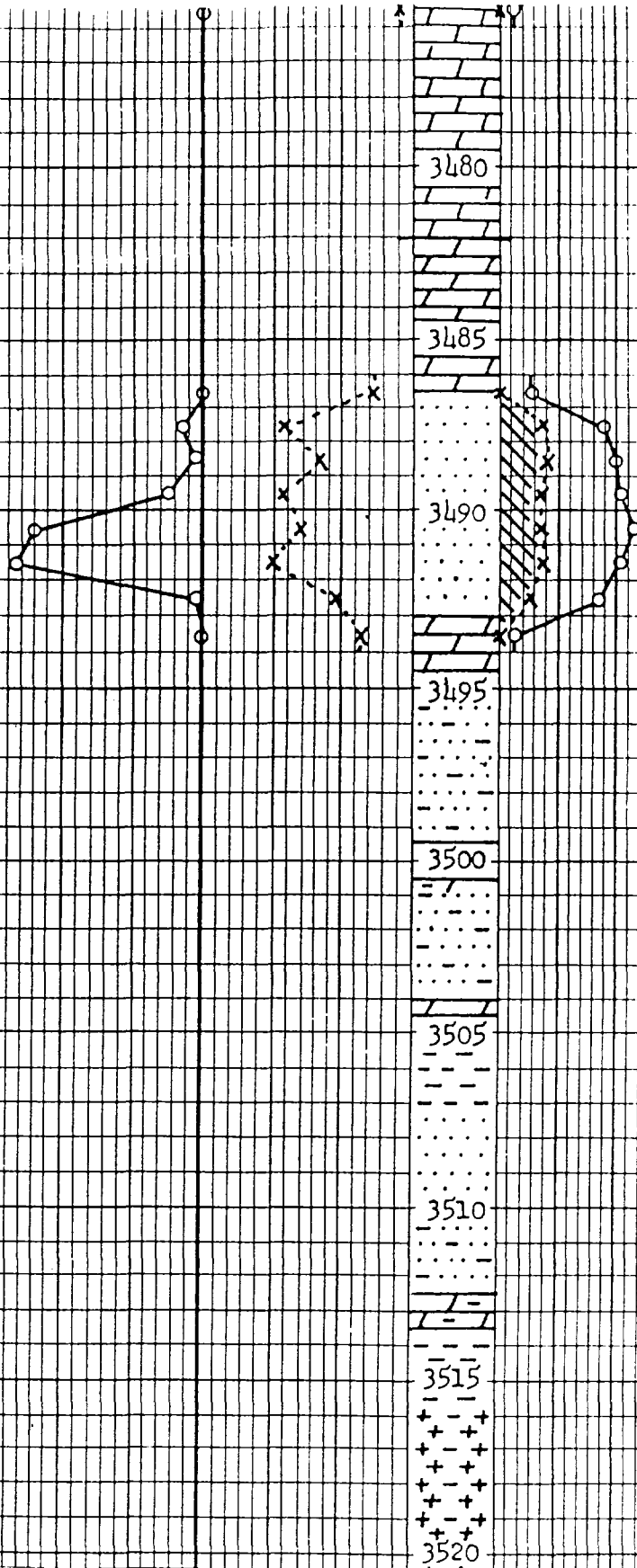
3471.0-72.0	<0.1	2.3	0.0	95.5	FX
72.0-73.0	<0.1	6.2	14.5	37.1	FG
73.0-74.0	0.2	7.9	6.3	64.5	FG
74.0-75.0	0.5	11.4	6.1	60.5	FG

13 75.0-76.0 <0.1 1.9 0.0 94.6 FX

NO SHOW

14	3486.0-87.0	<0.1	5.5	0.0	85.6	FX
15	87.0-88.0	2.9	18.6	18.8	55.4	FG
16	88.0-89.0	0.5	13.4	20.1	50.0	FG
17	89.0-90.0	5.1	18.5	18.9	48.0	FG
18	90.0-91.0	24	16.2	17.3	42.5	FG
19	91.0-92.0	27	20.1	17.4	48.8	FG
20	92.0-93.0	0.2	10.9	12.9	57.7	FG
21	93.0-94.0	<0.1	7.2	0.0	93.1	FX

NO SHOW



3525

3530

SAN ANDRES

3535

3540

3543

DRILLED

3636

3640

3645

NO SHOW

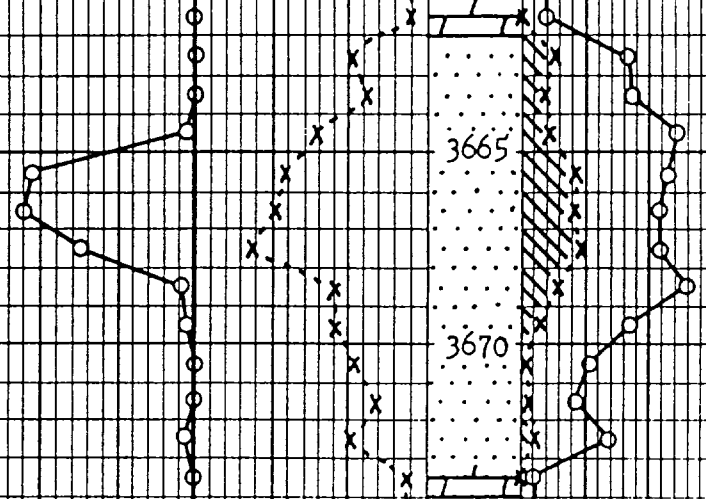
3650

3655

NO SHOW

22	3661.0-62.0	<0.1	2.0	0.0	90.0	FX
23	62.0-63.0	<0.1	9.3	12.9	58.1	FG
24	63.0-64.0	<0.1	7.5	9.4	57.3	FG
25	64.0-65.0	1.0	14.3	11.9	39.8	FG
26	65.0-66.0	21	18.3	21.8	42.6	FG
27	66.0-67.0	22	19.5	21.0	46.6	FG
28	67.0-68.0	15	22.6	23.0	46.6	FG
29	68.0-69.0	1.6	11.9	14.3	35.3	FG
30	69.0-70.0	0.2	11.9	7.6	57.9	FG
31	70.0-71.0	<0.1	9.2	2.2	73.8	FG
32	71.0-72.0	<0.1	6.4	3.1	78.2	FG
33	72.0-73.0	0.1	9.7	5.2	66.0	FG
34	3673.0-74.0	<0.1	2.3	0.0	95.6	FX

NO SHOW



CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
 DALLAS, TEXAS

Page 1 of 1 File WP-3-1712
 Well Kennedy No. 5

CORE SUMMARY AND CALCULATED RECOVERABLE OIL

FORMATION NAME AND DEPTH INTERVAL: Grayburg-San Andres 3274.0-3522.0

FEET OF CORE RECOVERED FROM ABOVE INTERVAL	167.0	AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	35.5
FEET OF CORE INCLUDED IN AVERAGES	17.0	AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE (e)	27
AVERAGE PERMEABILITY: MILLIDARCY	7.6	OIL GRAVITY: °API (e)	35
PRODUCTIVE CAPACITY: MILLIDARCY-Feet	129	ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL (e)	400
AVERAGE POROSITY: PER CENT	14.3	ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL (e)	1.26
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE	20.9	CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	643

Calculated maximum solution gas drive recovery is barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. *(Please refer to footnotes for further discussion of recovery estimates.)*

FORMATION NAME AND DEPTH INTERVAL:

FEET OF CORE RECOVERED FROM ABOVE INTERVAL		AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	
FEET OF CORE INCLUDED IN AVERAGES		AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE	
AVERAGE PERMEABILITY: MILLIDARCY		OIL GRAVITY: °API	
PRODUCTIVE CAPACITY: MILLIDARCY-Feet		ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL	
AVERAGE POROSITY: PER CENT		ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL	
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE		CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	

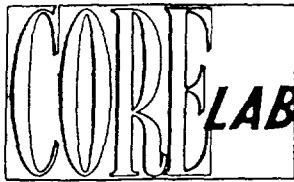
Calculated maximum solution gas drive recovery is barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. *(Please refer to footnotes for further discussion of recovery estimates.)*

(c) Calculated (e) Estimated (m) Measured (*) Refer to attached letter.

These recovery estimates represent theoretical maximum values for solution gas and water drive. They assume that production is started at original reservoir pressure; i.e., no account is taken of production to date or of prior drainage to other areas. The effects of factors tending to reduce actual ultimate recovery, such as economic limits on oil production rates, gas-oil ratios, or water-oil ratios, have not been taken into account. Neither have factors been considered which may result in actual recovery intermediate between solution gas and complete water drive recoveries, such as gas cap expansion, gravity drainage, or partial water drive. Detailed predictions of ultimate oil recovery to specific abandonment conditions may be made in an engineering study in which consider overall reservoir characteristics and economic factors.

FIGURE 1e

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Petroleum Reservoir Engineering

COMPANY BTA OIL PRODUCERS FILE NO. WP-3-1712
WELL KENNEDY NO. 5 DATE 7-17-61 ENGRS. NEFF, BUTLER
FIELD SQUARE LAKE FORMATION AS NOTED ELEV. 3945' KB
COUNTY EDDY STATE NEW MEXICO DRILLING FLUID WATER BASE MUD CORES DIAMOND 1 3/8"
LOCATION 1980 FS & 660 FWL SEC 33-T16S-R31E REMARKS SAMPLED AS DIRECTED BY CLIENT

COMPLETION COREGRAPH

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SAMPLE CHARACTERISTICS

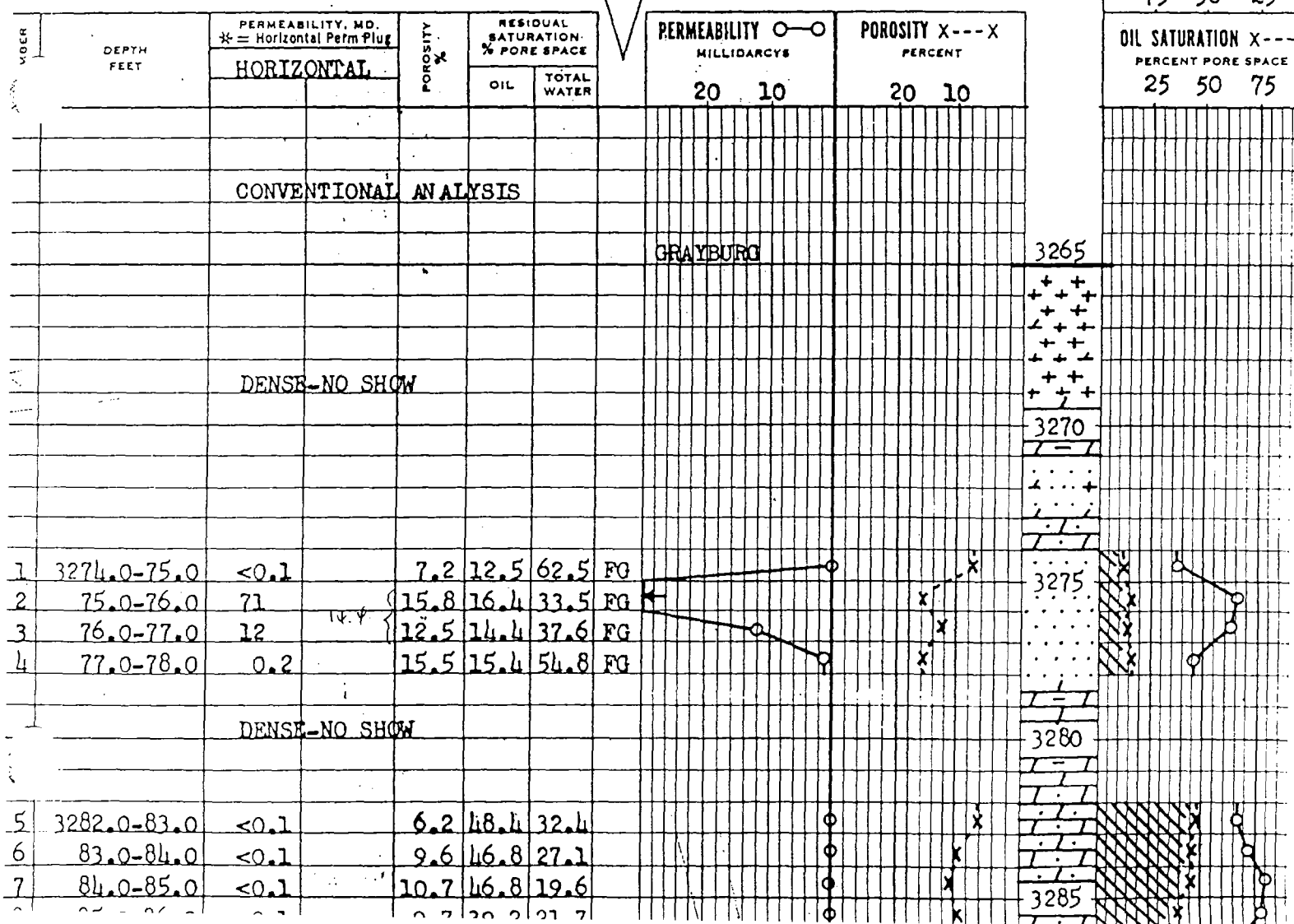
=Fractured L=Laminated FG; MG; CG=Type Grain Size S=Styolitic V=Vuggy

PROBABLE PRODUCTION

O=Oil W=Water G=Gas T=Transitional

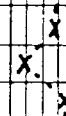
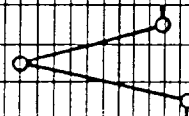
TOTAL WATER ○—○
PERCENT PORE SPACE
75 50 25

OIL SATURATION X---X
PERCENT PORE SPACE
25 50 75



DENSE-NO SHOW

10	3327.0-28.0	4.2	14.3	20.2	33.5	FG
11	28.0-29.0	22	18.1	18.2	38.7	FG
12	29.0-30.0	0.6	13.0	27.0	33.1	FG



DENSE-NO SHOW

DENSE-NO SHOW

DENSE-NO SHOW

DENSE-NO SHOW

13	3357.0-58.0	<0.1	4.6	30.4	39.1	
14	58.0-59.0	0.2	11.1	25.2	25.2	FG

5	3367.0-68.0	<0.1	5.7	31.6	31.6	FG
6	68.0-69.0	<0.1	5.8	31.0	31.0	FG
7	69.0-70.0	<0.1	8.5	14.1	47.1	FG
8	70.0-71.0	<0.1	6.5	26.2	53.9	FG
9	71.0-72.0	0.1	10.6	23.6	31.1	FG
10	72.0-73.0	1.0	13.4	28.3	29.8	FG
11	73.0-74.0	0.4	13.2	28.8	28.8	FG
12	74.0-75.0	<0.1	6.5	27.6	43.1	FG

3	3381.5-82.0	0.2	10.9	12.9	57.8	FG
4	82.0-83.0	0.4	13.9	12.3	46.2	FG

5	3390.5-91.0	<0.1	9.9	18.2	53.7	FG
6	91.0-92.0	<0.1	7.7	11.9	35.0	FG
7	92.0-93.0	<0.1	7.3	6.0	28.0	FG

3340

3345

3350

3355

3360

3365

3370

3375

3380

3385

3390

27 92.0-93.0 <0.1

7.3 6.9 78.0 FG

X

2

X

9

3395

3400

SAN ANDRES

3405

DENSE-NO SHOW

3410

3415

3420

3425

DRILLED

3501

3505

DENSE-NO SHOW

DENSE-NO SHOW

28	3516.5-17.0	<0.1		7.5	6.7	42.7	FG
29	17.0-18.0	0.4	3	10.8	23.2	26.9	FG
30	18.0-19.0	2.9	8	17.5	21.7	29.1	FG
31	19.0-20.0	13		22.2	26.1	27.0	FG
32	20.0-21.0	0.4	3	13.7	22.6	37.2	FG
33	21.0-22.0	0.9	8	16.5	18.2	33.5	FG

17
2.4
12.9
10 ml

DENSE-NO SHOW

3510

3515

3520

3525

3530

3535

3540

3545

3550

3553

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

Page 1 of 1 File WP-3-1769
 Well Kennedy No. 6

CORE SUMMARY AND CALCULATED RECOVERABLE OIL

FORMATION NAME AND DEPTH INTERVAL: Grayburg-San Andres 3451.0-3729.0

FEET OF CORE RECOVERED FROM ABOVE INTERVAL	179.0	AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	42.5
FEET OF CORE INCLUDED IN AVERAGES	20.5	AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE (e)	32
AVERAGE PERMEABILITY: MILLIDARCY'S	Max. 0.7 90° <0.1	OIL GRAVITY: °API (e)	35
PRODUCTIVE CAPACITY: MILLIDARCY-Feet	Max. 14 90° <0.1	ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL (e)	400
AVERAGE POROSITY: PER CENT	11.5	ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL (e)	1.26
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE	14.8	CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	481

Calculated maximum solution gas drive recovery is barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. *(Please refer to footnotes for further discussion of recovery estimates.)*

FORMATION NAME AND DEPTH INTERVAL:

FEET OF CORE RECOVERED FROM ABOVE INTERVAL		AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	
FEET OF CORE INCLUDED IN AVERAGES		AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE	
AVERAGE PERMEABILITY: MILLIDARCY'S		OIL GRAVITY: °API	
PRODUCTIVE CAPACITY: MILLIDARCY-Feet		ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL	
AVERAGE POROSITY: PER CENT		ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL	
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE		CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	

Calculated maximum solution gas drive recovery is barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. *(Please refer to footnotes for further discussion of recovery estimates.)*

(c) Calculated (e) Estimated (m) Measured (*) Refer to attached letter.

These recovery estimates represent theoretical maximum values for solution gas and water drive. They assume that production is started at original reservoir pressure; i.e., no account is taken of production to date or of prior drainage to other areas. The effects of factors tending to reduce actual ultimate recovery, such as economic limits on oil production rates, gas-oil ratios, or water-oil ratios, have not been taken into account. Neither have factors been considered which may result in actual recovery intermediate between solution gas and complete water drive recoveries, such as gas cap expansion, gravity drainage, or partial water drive. Detailed predictions of ultimate oil recovery to specific abandonment conditions may be made in an engineering study in which considered overall reservoir characteristics and economic factors.

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FIGURE 1f

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

COMPANY BTA OIL PRODUCERS FILE NO. WP-3-1769
 WELL KENNEDY NO. 6 DATE 10-4-61 ENGRS. BOONE
 ELD SQUARE LAKE FORMATION AS NOTED ELEV. 4012' KB
 COUNTY EDDY STATE NEW MEXICO DRILLING FLUID WATER BASE MUD CORES DIAMOND 4 3/8"
 LOCATION 2310 FN & 1650 FWL SEC. 34-T16S-R31E REMARKS SAMPLED AS DIRECTED BY CLIENT

COMPLETION COREGRAPH

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SAND  LIMESTONE  CONGLOMERATE  CHERT  ANHYDRITE 

SHALE  DOLOMITE  OOLITES   

SAMPLE CHARACTERISTICS

-Fractured L=Laminated FG; MG; CG=Type Grain Size S=Styrolitic V=Yuggy

PROBABLE PRODUCTION

O=Oil W=Water G=Gas T=Transitional

TOTAL WATER 0-0

PERCENT PORE SPACE

75 50 25

OIL SATURATION X---

PERCENT PORE SPACE

25 50 75

[illegible]

4	3471.0-72.0	* <0.1	2.5	0.0	60.0	FG
5	72.0-73.0	* <0.1	6.1	3.3	72.2	FG
6	73.0-74.0	* <0.1	9.8	7.1	69.3	FG
7	74.0-75.0	* <0.1	4.2	0.0	83.3	FG

DENSE-NO SHOW

8	3477.5-78.5	<0.1	<0.1	1.3	0.0	96.2
9	78.5-79.5	<0.1	<0.1	1.4	1.4	91.7
0	79.5-80.5	0.4	<0.1	2.6	26.0	50.8 F
1	80.5-81.5	<0.1	<0.1	2.1	12.2	75.2
2	81.5-82.5	<0.1	<0.1	0.9	0.0	89.7

DENSE-NO SHOW

3400

3470

3475

3480

3485

3490

3495

3500

3505

3510

3515

3	3521.0-22.0	*0.1	6.0	0.0	83.3	FG
4	22.0-23.0	*2.2	13.5	0.7	54.1	FG
5	23.0-24.0	*0.5	14.5	16.6	52.3	FG
6	24.0-25.0	*0.9	14.9	17.5	57.7	FG
7	25.0-26.0	*0.4	15.0	8.0	61.3	FG
8	26.0-27.0	*0.1	9.0	0.0	94.3	FG

DENSE-NO SHOW

9	3548.0-48.5	*0.1	2.3	0.0	60.8	FX
10	48.5-49.0	*0.2	8.0	15.3	22.6	FG
11	49.0-50.0	*0.1	11.0	22.7	21.8	FG
12	50.0-51.0	*1.2	9.0	18.9	21.1	FG
13	51.0-52.0	*0.1	6.4	1.6	67.2	FG
14	52.0-53.0	*0.1	9.2	0.0	92.3	FX

DENSE-NO SHOW

15	3564.0-65.0	*0.1	2.8	0.0	71.3	FX
16	65.0-66.0	*0.1	7.2	16.7	31.9	FG
17	66.0-67.0	*0.1	6.3	1.6	95.3	FG
18	67.0-68.0	*0.1	7.1	0.0	61.3	FG

3515

3520

3525

3530

3535

3540

3545

3550

3555

3560

3565

25	3564.0-65.0	*0.1		2.8	0.0	71.3	FX
26	65.0-66.0	*0.1	✓	7.2	16.7	31.9	FG
27	66.0-67.0	*0.1		6.3	1.6	95.3	FG
	67.0-68.0	*0.1		1.4	0.0	64.3	FG

DENSE-NO SHOW

29	3572.0-73.0	*0.1	✓	12.2	0.0	73.8	FG
30	73.0-74.0	*0.1	✓	10.4	1.0	71.2	FG
31	74.0-75.0	*0.1	✓	10.0	0.0	63.0	FG
32	75.0-76.0	*0.1		4.4	4.5	61.3	FG

DENSE-NO SHOW

33	3581.0-82.0	*0.1		4.1	0.0	51.2	FX
34	82.0-83.0	*0.9	✓	11.3	15.9	38.9	FG
35	83.0-84.0	*1.0	✓	15.2	17.8	25.1	FG
36	84.0-85.0	*1.7	✓	13.9	16.5	42.4	FG
37	85.0-86.0	*0.1		8.7	0.0	77.1	FG

DENSE-NO SHOW

38	3590.0-91.0	*0.1		5.3	0.0	66.2	FX
39	91.0-92.0	*1.6	✓	14.3	16.8	29.4	FG
40	92.0-93.0	*1.7	✓	16.5	20.6	25.5	FG
41	93.0-94.0	*0.1		7.8	1.3	78.3	FG
42	94.0-95.0	*0.1		7.4	0.0	75.7	

DENSE-NO SHOW

43	3596.0-97.0	*0.1		6.1	0.0	72.3	
44	97.0-98.0	*0.2	✓	12.0	10.0	42.6	FG
45	98.0-99.0	*0.6	✓	14.3	16.8	32.2	FG
46	99.0-00.0	*0.2	✓	11.1	13.5	27.9	FG
47	3600.0-01.0	*0.1		6.9	0.0	84.2	FG

3601

DRILLED

SAN ANDRES

3700

DENSE-NO SHOW

48	3723.0-24.0	*0.1		1.2	0.0	75.0	FX
49	24.0-25.0	#0.5	v	10.7	18.7	50.4	FG
50	25.0-26.0	*0.1		7.3	2.7	76.7	FG
51	26.0-27.0	*0.1		8.5	10.6	55.3	FG
	27.0-28.0	*0.1		7.5	9.3	77.3	FG
	28.0-28.5	*0.1		7.1	2.7	73.3	FG
54	28.5-29.0	*0.1		5.2	0.0	90.3	FG

DENSE-NO SHOW

3705

3710

3715

3720

3725

3730

3735

3740

3745

3750

3751

ILLEGIBLE

CORE LABORATORIES, INC.



Petroleum Reservoir Engineering

NY. SEWMONT OIL COMPANY FILE NO. WP-3-2618
VICKERS NO. 4 DATE 11-22-65 ENGRS. NEFF
 ELD. SQUARE LAKE FORMATION LOVINGTON ELEV. _____
 DUNTY EDDY STATE NEW MEXICO ORLG. FLD. OIL CORES DIAMOND 2 1/8"
 LOCATION _____ REMARKS SAMPLED AS DIRECTED BY CLIENT

COMPLETION COREGRAPH

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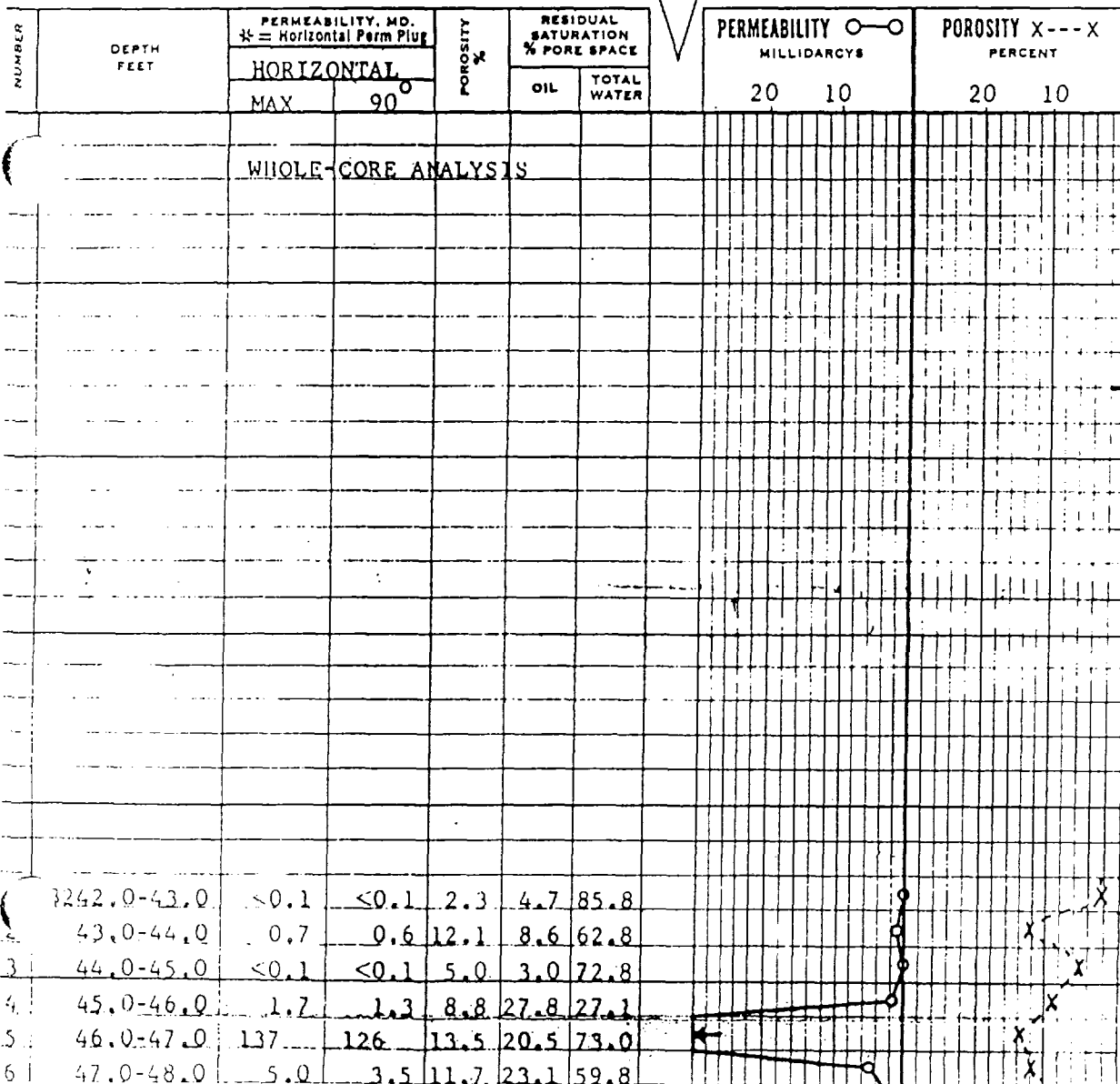


SAMPLE CHARACTERISTICS

=Fractured L=Laminated FG; MG; CG=Type Grain Size S=Stylolitic V=Vuggy

PROBABLE PRODUCTION

O=Oil W=Water G=Gas T=Transitional



TOTAL WATER PERCENT PORE SPACE

75 50 25

OIL SATURATION X---X PERCENT PORE SPACE

25 50 75

FIGURE 1a

PROPOSED NORTH SQUARE LAKE UNIT
EDDY CTY., NEW MEXICO

PREPARED NOV. 1998 BY: M. A. SIRGO III

NEW 20 ACRE INFILL PATTERN ANALYSIS
Remaining Reserve Analysis
Completion Conformance 115 Patterns

Pattern #	Loco Hills Phi-H	Metex Phi-H	Premier Phi-H	Lovington Phi-H	Total Phi-H	Pattern OOIP	Pattern Cum Oil	Pattern Recovery%	Pattern Cum Inject	Pattern Cum Wtr	Pattern Oil RRR@27.5%	Completion Conformance					
												7R-Queen	Loco Hills	Metex	Premier	Lovington	SA-Lime
1	0.5	2	15	6	23.5	344510	46670	13.55%	153000	46765	48070	0	1/4	4/4	4/4	3/4	1/4
2	1	4	20	10	35	513100	73175	14.26%	180000	132800	67928	0	0	2/4	3/4	4/4	1/4
3	1	3	30	7.5	41.5	608390	67750	11.14%	313000	153425	99557	0	1/4	1/4	3/4	3/4	0
4	1	0	40	10	51	747660	56250	7.52%	390000	67508	149357	0	2/4	2/4	4/4	2/4	0
5	0	0	41	12.5	53.5	784310	116000	14.79%	245000	33333	99685	0	1/4	1/4	3/4	3/4	0
6	0.5	0	40	10	50.5	740330	114750	15.50%	269000	81200	88841	0	0	0	2/4	3/4	0
7	2	1	36	7.5	46.5	681690	46800	6.87%	325000	143000	140665	0	0	0	2/4	3/4	0
8	0	1	20	8.75	29.75	436135	39000	8.94%	370000	46687	80937	0	2/5	5/5	5/5	3/5	1/5
9	1	6	20	7.5	34.5	505770	74150	14.66%	230000	304687	64937	0	0	3/4	4/4	4/4	1/4
10	3	5	32.5	4	44.5	652370	82250	12.61%	406000	325000	97152	0	1/4	3/4	4/4	3/4	0
11	2	2	40	13	57	835620	104000	12.45%	483000	230250	125796	0	2/4	4/4	4/4	2/4	0
12	0.5	1	44.25	17	62.75	919915	160000	17.39%	308000	196250	92977	0	1/4	2/4	4/4	3/4	0
13	1	1.5	52	15	69.5	1018870	156750	15.38%	332000	65200	123439	0	0	1/4	4/4	3/4	0
14	1	7	45	12	65	952900	122500	12.86%	127000	170200	139548	0	0	2/4	4/4	3/4	0
15	0	0	21	5	26	381160	43250	11.35%	0	39250	61569	0	0	4/5	5/5	0	0
16	0	2	22	6.25	30.25	443465	79625	17.96%	80000	63687	42328	0	1/5	4/5	5/5	1/5	0
17	0	5	25	8	38	557080	40475	7.27%	512000	279187	112722	0	1/4	4/4	4/4	1/4	0
18	1	4	27.5	5	37.5	549750	179750	32.70%	688000	400000	-28569	0	0	3/4	4/4	3/4	0
19	1	1	31.5	16	49.5	725670	227500	31.35%	874000	308500	-27941	0	0	2/4	4/4	4/4	0
20	1	2	35	22	60	879600	182000	20.69%	700000	292250	59890	0	1/4	2/4	4/4	3/4	0
21	0	4	43	20	67	982220	184000	18.73%	403000	157250	86111	0	1/4	3/4	4/4	2/4	0
22	2	4	53	17.5	76.5	1121490	166750	14.87%	198000	150750	141660	0	0	4/4	4/4	1/4	0
23	2	2	33.5	10.5	48	703680	110500	15.70%	19000	124725	83012	0	0	3/4	4/4	2/4	0
24	0	0	27	2.5	29.5	432470	29800	6.89%	19000	2225	89129	0	0	2/4	4/4	2/4	0
25	0.5	1	23	0	24.5	359170	27300	7.60%	0	?	71472	0	0	0	3/3	3/3	0
26	1	2	17	4	24	351840	20850	5.93%	0	?	75906	0	0	0	3/3	3/3	0
27	0	0.5	9	4	13.5	197910	5750	2.91%	0	?	48675	0	0	0	3/4	4/4	0
28	0	0	12	5	17	249220	83950	33.69%	125000	116400	-15415	0	1/4	4/4	4/4	0	0
29	0	2	21	2	25	366500	71975	19.64%	302000	80750	28813	0	0	5/5	5/5	2/5	0
30	0	0	23	9.5	32.5	476450	58225	12.22%	309000	142000	72799	0	0	4/4	4/4	2/4	0
31	0	0	25	15	40	586400	172250	29.37%	606000	245750	-10990	0	0	2/4	4/4	2/4	0
32	0	0.5	27	22	49.5	725670	176500	24.32%	792000	218500	23059	0	0	0	4/4	3/4	0
33	1.5	2	29	26	58.5	857610	162000	18.89%	1261000	202250	73843	0	1/4	1/4	4/4	3/4	0
34	1	1	35	24	61	894260	191000	21.36%	964000	173000	54922	0	1/4	3/4	4/4	2/4	0
35	2	2.5	46	19	69.5	1018870	138750	13.62%	392000	123250	141439	0	1/4	4/4	4/4	1/4	0
36	2	1	36	14	53	776980	95500	12.29%	213000	114500	118170	0	1/4	4/4	4/4	1/4	0
37	0	0	26.5	5.5	32	469120	49250	10.50%	19500	35250	79758	0	0	1/4	4/4	2/4	0
38	1	2	23	5	31	454460	37500	8.25%	0	?	87477	0	0	1/4	4/4	3/4	0
39	1	2	20	11.5	34.5	505770	26200	5.18%	0	?	112887	0	0	1/4	4/4	4/4	0
40	0	0	17.5	11	28.5	417810	9450	2.26%	0	?	105448	0	0	0	3/4	4/4	0
41	0	1	14	5	20	293200	32500	11.08%	0	?	48130	0	0	0	3/4	4/4	0
42	0	0	7	4	11	161260	26850	16.65%	0	?	17497	0	0	1/4	4/4	4/4	0

FIGURE 2

Pattern #	Loco Hills Phi-H	Metex Phi-H	Premier Phi-H	Lovington Phi-H	Total Phi-H	Pattern OOIP	Pattern Cum Oil	Pattern Recovery%	Pattern Cum Inject	Pattern Cum Wtr	Pattern Oil RRR@27.5%	Pattern Existing Completion Conformance						
												7R-Queen	Loco Hills	Metex	Premier	Lovington	SA-Lime	
43	0	0	14	3	17	249220	78260	31.40%	0	261500	-9725	0	0	3/5	5/5	2/5	0	
44	0	0	20	3	23	337180	71000	21.06%	0	191000	21725	0	0	1/4	4/4	4/4	0	
45	0	0	19	14	33	483780	106750	22.07%	297000	220500	26290	0	0	0	3/5	5/5	3/5	0
46	0	1	19	23	43	630380	95500	15.15%	436000	158500	77855	0	0	0	1/4	4/4	2/4	0
47	1	2	20.5	25	48.5	711010	93250	13.12%	904000	85000	102278	0	0	0	0	4/4	4/4	0
48	1	2	28	22	53	776980	108500	13.96%	1117000	55750	105170	0	0	0	2/4	4/4	3/4	0
49	0	1	36.5	17.5	55	806300	109750	13.61%	545000	99750	111983	0	0	2/4	3/4	4/4	0	
50	0	0	35	13	48	703680	90750	12.90%	574000	91000	102762	0	0	1/4	1/4	4/4	3/4	0
51	0	0	37	10	47	689020	55000	7.98%	380000	35250	134481	0	0	0	0	5/5	3/5	0
52	0	0	37	10	47	689020	18250	2.65%	?	?	171231	0	0	0	2/4	3/4	1/4	0
53	0	1	36	15.5	52.5	769650	14575	1.89%	?	?	197079	0	0	0	2/4	3/4	3/4	0
54	0	0	30	16.5	46.5	681690	29075	4.27%	?	?	158390	0	0	0	0	4/4	4/4	0
55	0	0	18	13	31	454460	52500	11.55%	?	?	72477	0	0	0	0	4/4	4/4	0
56	0	0	10	10	20	293200	30300	10.33%	?	?	50330	0	0	0	0	4/4	4/4	0
57	2	2	20	5	29	425140	92260	21.70%	140000	295750	24654	0	0	1/4	3/4	4/4	2/4	1/4
58	2	10	15	4	31	454460	180750	39.77%	0	346750	-55774	0	0	2/5	4/5	5/5	1/5	0
59	3	5	11.5	17	36.5	535090	76750	14.34%	608000	196750	70400	1/5	1/5	1/5	5/5	5/5	3/5	0
60	1	4	10	25	40	586400	69250	11.81%	553000	118000	92010	1/5	1/5	1/5	3/5	5/5	2/5	0
61	0	0	10	24	34	498440	70750	14.19%	259000	40500	66321	0	0	0	1/4	4/4	2/4	0
62	0	0	15	15	30	439800	85350	19.41%	471000	23625	35595	0	0	1/5	3/5	5/5	2/5	0
63	0	0	23	8	31	454460	77150	16.98%	421000	67625	47827	0	0	1/4	2/4	4/4	2/4	0
64	0	0	31.5	6	37.5	549750	126000	22.92%	450000	210750	25181	0	0	0	0	4/4	4/4	0
65	0	0	40	6	46	674360	99250	14.72%	606000	155000	86199	0	0	0	0	4/4	2/4	0
66	0	5	52	8	65	952900	49750	5.22%	225000	15250	212298	0	0	0	2/4	3/4	1/4	0
67	0	4	50	14	68	996880	47725	4.79%	162000	15250	226417	0	0	0	3/4	3/4	3/4	0
68	0	0	47	17	64	938240	45975	4.90%	162000	8250	212041	0	0	0	2/4	4/4	3/4	0
69	0	2	20	16	38	557080	53930	9.68%	?	8750	99267	0	0	0	1/4	4/4	3/4	0
70	0	1	9	11	21	307860	34500	11.21%	?	675	50162	0	0	0	1/4	4/4	3/4	0
71	0	0	4	1.5	5.5	80630	23950	29.70%	?	675	-1777	0	0	0	1/4	4/4	2/4	0
72	0	0	7	0	7	102620	66750	65.05%	213000	28500	-38530	0	0	4/4	4/4	4/4	2/4	0
73	0	0	11	2.5	13.5	197910	81850	41.36%	213000	46250	-27425	0	0	2/4	4/4	4/4	2/4	0
74	3	5	26	5	39	571740	146000	25.54%	0	295200	11229	0	0	2/4	3/4	4/4	3/4	1/4
75	8	8	37	18	71	1040860	191850	18.43%	0	444750	94387	0	0	3/4	4/4	4/4	3/4	0
76	6	8	18	24	56	820960	70000	8.53%	914000	200400	155764	1/4	2/4	4/4	4/4	4/4	3/4	0
77	1	3	18	19	41	601060	33250	5.53%	914000	43900	132042	1/4	1/4	2/4	4/4	4/4	2/4	0
78	0	0	10.5	13.5	24	351840	32250	9.17%	120000	39500	64506	0	0	0	1/4	4/4	1/4	0
79	0	0	10	7.5	17.5	256550	42900	16.72%	191000	11875	27651	0	0	0	2/4	4/4	1/4	0
80	0	0	15	2	17	249220	43590	17.49%	141000	11875	24946	0	0	0	1/4	4/4	3/4	0
81	0	0	27	0	27	395820	92250	23.31%	175000	161250	16601	0	0	0	0	4/4	4/4	0
82	0	0	36	1.5	39.5	579070	114250	19.73%	331000	164500	44994	0	0	0	0	4/4	3/4	0
83	0	4	48	7.5	59.5	872270	81250	9.31%	481000	30500	158624	0	0	0	2/4	4/4	3/4	0
84	0	3	28	14.5	46.5	681690	77350	11.35%	286000	50750	110115	0	0	0	4/4	4/4	1/4	0

Pattern #	Pattern Existing Completion Conformance										Pattern OIL RRR@27.5%	Pattern Cum Wtr	Pattern Cum Inject	Pattern Recovery%	Pattern Cum OIL	Pattern OOIP	Total Phi-H	Lovington Phi-H	Premier Phi-H	Metex Phi-H	Loco Hills Phi-H	Pattern Existing Completion Conformance				SA-Lime
	7R-Queen	Loco Hills	Metex	Premier	Lovington	SA-Lime																				
85	0		3	17	10.5	30.5	447130	42550	9.52%	134000	23250	80411	0	0	3/4	4/4	2/4	2/4	4/4	3/4	1/4	0	0	0	1/4	
86	0		1	9.5	9	19.5	285870	27500	9.62%	33000	15175	51114	0	0	3/4	4/4	3/4	3/4	4/4	3/4	1/4	0	0	0	1/4	
87	0		0	8	2.5	10.5	153930	33000	21.44%	33000	10425	9331	0	0	3/4	4/4	2/4	2/4	4/4	3/4	0	0	0	0	0	
88	8		8	46	15.5	77.5	1136150	133770	11.77%	?	240000	178671	0	0	3/4	4/4	3/4	3/4	4/4	3/4	0	0	0	0	0	
89	8		10	33.5	20	71.5	1048190	118500	11.31%	496000	323750	169752	0	2/4	4/4	4/4	4/4	4/4	4/4	4/4	0	0	0	0	0	
90	5		10	30	17.5	62.5	916250	41500	4.53%	996000	133900	210469	0	1/3	3/3	3/3	3/3	3/3	3/3	3/3	0	0	0	0	0	
91	1		5	20	11	37	542420	10500	1.94%	499000	11150	138666	0	0	1/3	3/3	2/3	2/3	3/3	3/3	0	0	0	0	0	
92	0		4	10	5	19	278540	8500	3.05%	0	10750	68099	0	0	0	3/3	1/3	1/3	3/3	3/3	0	0	0	0	0	
93	0		0	13	1	14	205240	24500	11.94%	71000	7000	31941	0	0	1/3	3/3	1/3	1/3	3/3	3/3	0	0	0	0	0	
94	0		0	22	0	22	322520	51250	15.89%	71000	14000	37443	0	0	1/4	4/4	3/4	3/4	4/4	4/4	0	0	0	0	0	
95	2		4	31	0	37	542420	141250	26.04%	105000	21500	7916	0	0	1/4	4/4	4/4	4/4	4/4	4/4	0	0	0	0	0	
96	0		3	41.5	2.5	47	689020	68000	9.87%	141000	20500	121481	0	0	1/4	4/4	4/4	4/4	4/4	4/4	0	0	0	0	0	
97	0		2	34	7.5	43.5	637710	51750	8.11%	192000	6000	123620	0	0	1/4	4/4	4/4	4/4	4/4	4/4	0	0	0	0	0	
98	0		2	20	9	31	454460	49500	10.89%	170000	42500	75477	0	0	3/4	3/4	2/4	2/4	3/4	3/4	0	0	0	0	0	
99	0		2	27	5	34	498440	78500	15.75%	147000	63250	58571	0	0	4/4	4/4	2/4	2/4	4/4	4/4	0	0	0	0	0	
100	0		2	20.5	1	23.5	344510	100050	29.04%	227000	35250	-5310	0	0	5/5	5/5	3/5	3/5	5/5	5/5	1/5	0	0	1/5	1/5	
101	0		2	16	4	22	322520	59350	18.40%	126000	21600	29343	0	0	4/4	4/4	2/4	2/4	4/4	4/4	1/4	0	0	1/4	1/4	
102	0		2	20	3	25	366500	58750	16.03%	175000	16850	42038	0	0	4/4	4/4	4/4	4/4	4/4	4/4	0	0	0	0	0	
103	5		10	36	11	62	908920	52250	5.75%	496000	70750	197703	0	2/4e	4/4e	4/4e	4/4e	4/4e	4/4e	4/4e	0	0	0	0	0	
104	8		8	18	4	38	557080	21250	3.81%	496000	28250	131947	0	0	2/2e	2/2e	2/2e	2/2e	2/2e	2/2e	0	0	0	0	0	
105	4		5	10	4	23	337180	3750	1.11%	0	0	88975	0	0	0	0	0	0	1/1	1/1	0	0	0	0	0	
106	1		4	16	0	21	307860	8750	2.84%	0	0	75912	0	0	1/2	1/2	0	0	2/2	2/2	0	0	0	0	0	
107	0		2	29	0	31	454460	46250	10.18%	0	9250	78727	0	0	3/3	3/3	0	0	3/3	3/3	0	0	0	0	0	
108	2		8	34	1.5	45.5	667030	141250	21.18%	0	15250	42183	0	0	2/3	2/3	3/3	3/3	3/3	3/3	0	0	0	0	0	
109	0		12	36	5	53	776980	128750	16.57%	35000	36000	84920	0	0	3/4	3/4	4/4	4/4	4/4	4/4	0	0	0	0	0	
110	0		6	31	5	42	615720	46000	7.47%	149500	36250	123323	0	0	2/4	2/4	4/4	4/4	4/4	4/4	0	0	0	0	0	
111	0		5	10	2.5	17.5	256550	25750	10.04%	127500	20000	44801	0	0	3/4	3/4	3/4	3/4	3/4	3/4	0	0	0	0	0	
112	0		2	15	0	17	249220	72000	28.89%	128000	27500	-3465	0	0	4/4	4/4	4/4	4/4	4/4	4/4	0	0	0	0	0	
113	0		3	30	3	36	527760	106000	20.08%	208000	50750	39134	0	0	4/4	4/4	4/4	4/4	4/4	4/4	0	0	0	0	0	
114	0		3	27.5	0	30.5	447130	92000	20.58%	150000	54750	30961	0	0	4/4	4/4	4/4	4/4	4/4	4/4	0	0	0	0	0	
115	0		2	26.5	0	28.5	417810	63500	15.20%	199000	24850	51398	0	0	4/4	4/4	4/4	4/4	4/4	4/4	0	0	0	0	0	
116	0		0	0	0	0	0	0	ERR	0	0	0	0	0	ERR	ERR	0	0	ERR	ERR	0	0	0	0	0	
117	0		0	0	0	0	0	0	ERR	0	0	0	0	0	ERR	ERR	0	0	ERR	ERR	0	0	0	0	0	
118	0		0	0	0	0	0	0	ERR	0	0	0	0	0	ERR	ERR	0	0	ERR	ERR	0	0	0	0	0	
119	0		0	0	0	0	0	0	ERR	0	0	0	0	0	ERR	ERR	0	0	ERR	ERR	0	0	0	0	0	
120	0		0	0	0	0	0	0	ERR	0	0	0	0	0	ERR	ERR	0	0	ERR	ERR	0	0	0	0	0	
Pattern #	Loco Hills Phi-H	Metex Phi-H	Premier Phi-H	Lovington Phi-H	Total Phi-H	Pattern OOIP	Pattern Cum OIL	Pattern Recovery%	Pattern Cum Inject	Pattern Cum Wtr	Pattern OIL RRR@27.5%	Pattern Cum Wtr	Pattern Cum Inject	Pattern Recovery%	Pattern Cum OIL	Pattern OOIP	Total Phi-H	Lovington Phi-H	Premier Phi-H	Metex Phi-H	Loco Hills Phi-H	Pattern Existing Completion Conformance				SA-Lime
ALL PATTERNS	103.5	276	2956	1088	4423	64844845	8956055	13.81%	30511500	10887329	Pattern OIL RRR@27.5%	Pattern Cum Wtr	Pattern Cum Inject	Pattern Recovery%	Pattern Cum OIL	Pattern OOIP	4423	1088	2956	276	103.5	Pattern Existing Completion Conformance				SA-Lime
PATTERN AVG.	1	2	26	9	38	563868	77879	13.81%	265317	94672	85349	94672	265317	13.81%	77879	563868	38	9	26	2	1	Pattern Existing Completion Conformance				SA-Lime