

Case 537

Lowry et al Operating Account

Summary of
Porosity & Permeability
Data

Pettigrew-Tocito Pool

Rio Arriba County

New Mexico

4431 / 5

Lowry

Upper Portion of Tocito Sand

FIELD WEIGHTED AVERAGE POROSITY		
	<u>Ft. of Net Sand</u>	<u>Wt. Average Porosity, %</u>
ederal 4-13-132	17	13.54
ederal 22-45-207	12	13.18
ederal 23-49-129	14	14.90
ederal 24-50-177	9	14.03

Field Weighted Average:

* Petroleum Production Laboratories

POROSITY DATA

Pettigrew-Tocito Field

----- Lower Portion of Tocito Sand

<u>Federal 4-13-132</u>		<u>Federal 23-49-129</u>	
<u>Depth, Ft.</u>	<u>Porosity % *</u>	<u>Depth, Ft.</u>	<u>Porosity % **</u>
6706.5	11.7	6614.5 - 6614.9	10.1
6707.5	11.9	6615.1 - 6615.7	9.4
6708.5	10.8	6615.7 - 6616.2	9.9
6709.7	5.1	6616.2 - 6616.7	9.5
6710.5	12.2	6616.7 - 6617.0	8.0
6711.5	13.3	6617.0 - 6617.4	8.3
6712.5	13.8	6617.4 - 6618.0	12.4
6713.5	13.1	6621.1 - 6621.7	15.2
6714.5	12.1	6621.7 - 6622.5	12.7
6715.5	7.9	6622.5 - 6623.1	11.1
		6623.4 - 6624.0	7.9
		6624.4 - 6625.1	9.9
		6625.1 - 6625.6	13.0
		6626.8 - 6627.2	10.6
Wt. average:	11.19	Wt. average:	10.79

Field Weighted Average Porosity

	<u>Feet of Net Sand</u>	<u>Wt. Average Porosity %</u>
Federal 4-13-132	10	11.19
Federal 23-49-129	13	10.79
Field weighted average:		10.96

* Core Laboratories

** Petroleum Production Laboratories

* Permeability to liquid - Core Laboratories
 ** Permeability to air - Petroleum Production Laboratories

VERTICAL PERMEABILITY DATA

Pettigrew-Tocito Field

Upper Portion of Tocito Sand

Federal 23-49-129

<u>Depth, Feet</u>	<u>Permeability, Millidarcys*</u>
6586.9 - 6587.2	1.0
6587.2 - 6587.6	1.4
6587.6 - 6588.1	0.4
6588.1 - 6588.6	0.4
6588.6 - 6589.2	2.9
6589.2 - 6589.8	4.3
6589.8 - 6590.1	78.0
6590.2 - 6590.7	59.0
6590.7 - 6591.3	90.0
6591.3 - 6591.8	22.0
6592.0 - 6592.6	5.4
6592.6 - 6593.1	48.0
6593.1 - 6593.7	3.3
6593.7 - 6594.3	62.0
6594.4 - 6595.0	40.0
6595.1 - 6595.7	0.5
6595.7 - 6596.3	82.0
6596.3 - 6596.7	3.3
6596.8 - 6597.2	4.0
6597.2 - 6598.0	0.4
6598.2 - 6599.0	2.1
6599.0 - 6599.6	76.0
6599.6 - 6600.2	3.1
6600.2 - 6600.7	0.3

Wt. Average: 20.43

Federal 24-50-177

<u>Depth, Feet</u>	<u>Permeability* Millidarcys</u>
6607.2 - 6607.6	0.04
6607.6 - 6608.0	0.22
6608.0 - 6608.3	0.19
6608.3 - 6608.5	0.06
6608.5 - 6609.0	0.08
6609.0 - 6609.5	0.05
6609.5 - 6610.5	8.10
6610.5 - 6610.8	0.07
6610.8 - 6611.0	0.04
6611.0 - 6611.5	0.43
6611.5 - 6611.9	0.12
6611.9 - 6612.2	0.09
6612.2 - 6612.7	14.00
6612.7 - 6613.0	0.71
6613.0 - 6613.3	183.00
6613.3 - 6613.9	12.00
6613.9 - 6614.2	418.00
6614.2 - 6614.5	335.00
6614.5 - 6615.0	221.00
6615.0 - 6615.4	9.20
6615.4 - 6615.8	8.10

Wt. Average: 48.99

Field Weighted Average: 31.61 millidarcys

* Permeability to air - Petroleum Production Laboratories

Lower Portion of Tocito Sand

Field weighted average:

* Permeability to liquid - Core Laboratories

**** Permeability to air - Petroleum Production Laboratories**

Horizontal: 1.06 millidarcys

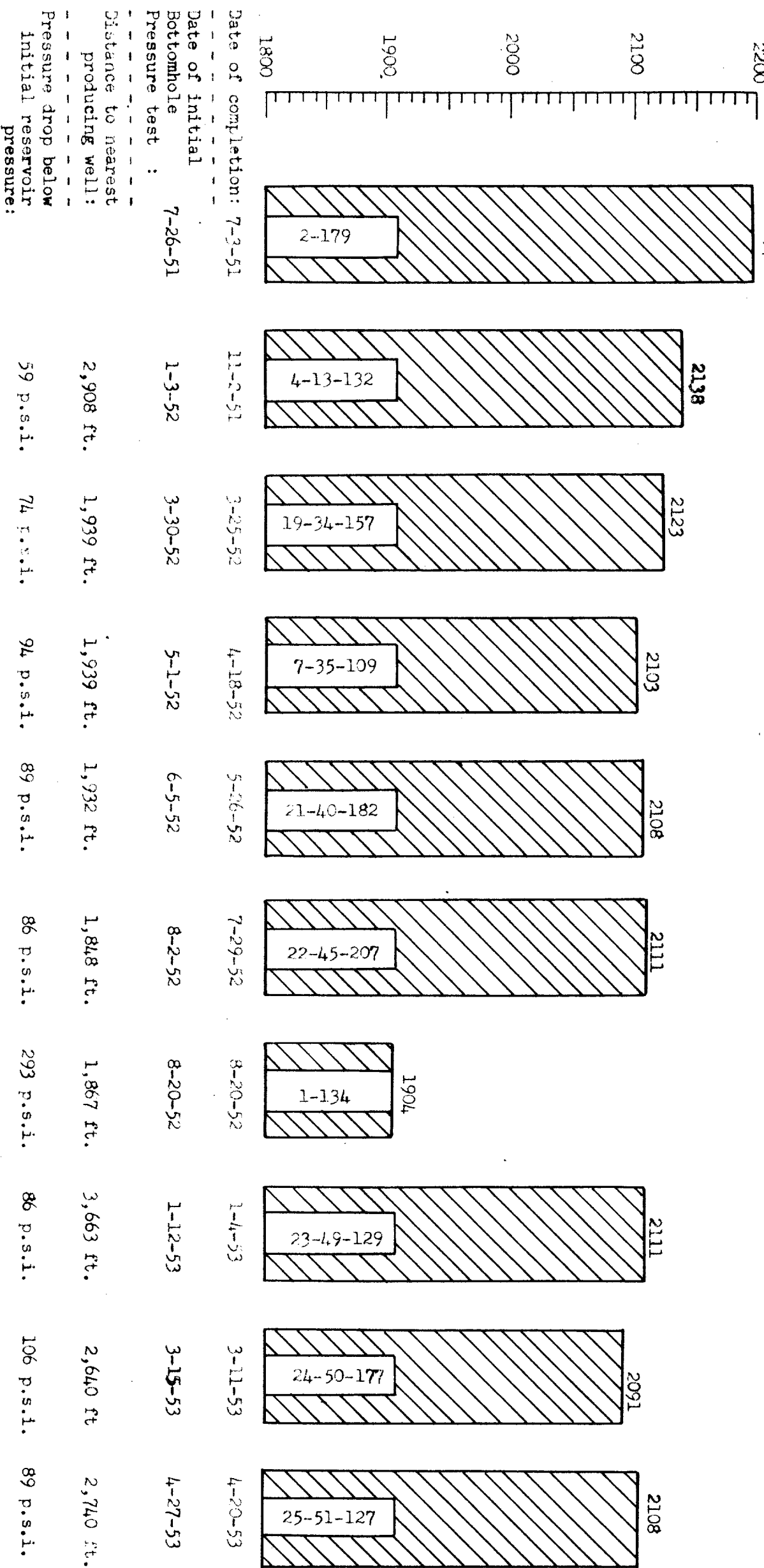
Vertical: 0.41 millidarcy

INITIAL BOTTOMHOLE PRESSURE TESTS

PETTICREW-TOCITO FIELD

ELIO AHHIBA COUNTY, N. Y.

2197



Case 537

Lowry et al Operating Account

Economics of Development

Pettigrew-Tocito Pool

Rio Arriba County, New Mexico

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ECONOMICS OF DEVELOPMENT 40 - acre PRORATION UNITS

Pettigrew-Tocito Field - Rio Arriba County, N. M.

Crude Oil Price	\$ 2.4500 /bbl.
Less Royalty (1/8 - .3063/bbl.)	2.1437
Less Severance Tax (.025% - .0536/bbl)	2.0901
Less Conservation tax (.00125% - .0027/bbl)	2.0874
Less Production tax (.020896% of 50% Value -) (\$.0224/bbl.)	2.0650
Number of Productive Acres	2,535
Average Sand Thickness - Feet	
Upper Portion	9.4
Lower Portion	11.0
Ultimate Oil Recovery, Barrels	3,330,230
Ultimate Oil Recovery - Barrels per acre	1,314
Ultimate Oil Recovery - 40 acre, Barrels	52,560
Operating Income - 40 acre tract (52,560 barrels @ \$2.07/bbl)	\$108,799.20
Total Cost of Drilling and Completing Tocito wells	\$110,609.34

Note: No Operating Costs considered in computing Operating Income

COST OF DRILLING AND COMPLETING TOCITO OIL WELLS

Pettigrew-Tocito Field

Rio Arriba County, New Mexico

	<u>Intangible Development Cost</u>	<u>Tangible well Equipment</u>	<u>Ta</u>
Cost of drilling and completing Lowry et al Operating Account Federal 21-40-182	\$74,872.97	\$27,632.32	\$102,.
Cost of drilling and completing Lowry et al Operating Account Federal 22-45-207	72,702.95	26,907.98	99,610.93
Cost of installing flow lines, separator and tank battery to serve Lowry et al Operating Account Federal 21-40-182 and Federal 22-45-207	1,684.76	17,418.70	19,103.46
Total Costs - Two wells, plus flow lines, separator and tank battery	\$149,260.68	\$71,959.00	\$221,219.68
Average Total Cost per well			\$ 110,609.34

Note: No overhead charges included in above completion costs.

WELL NO. Federal Doswell 21-40-182
 FIELD: Pettigrew-Tocito
 LOCATION: NE SW Section 10, 26N-6W, Rio Arriba County,
 New Mexico

INTANGIBLE DEVELOPMENT COST

\$74,872.97

<u>Roads & Location</u>	\$1,221.20
1. Bulldozer	\$360.00
2. Road Grader	80.00
3. Trucking	480.00
4. Labor	138.00
5. Survey location	153.00
6. Furnish elevation	10.20
<u>Drilling Mud & Cement</u>	3,969.49
<u>Well Services</u>	4,549.23
1. Schlumberger	2,503.45
2. Halliburton	582.68
3. Core Laboratories	1,177.50
4. Gun Perforate	285.60
<u>Water & Fuel</u>	888.28
1. Labor - water line	206.00
2. Labor - gas line	260.00
3. Trucking	422.28
<u>Miscellaneous Drlg Material</u>	651.25
<u>welding</u>	126.28
<u>Drilling</u>	63,467.24
1. Footage	54,680.16
2. Daywork	8,006.43
3. Cable Tools	780.65

TANGIBLE WELL EQUIPMENT

27,632.32

1. Surface String (plus frt)	2,185.42
2. Production String (plus frt)	18,433.00
3. Tubing (plus frt)	3,843.88
4. Well head Equipment	3,051.25
5. Miscellaneous equipment	118.77

TOTAL TO COMPLETE WELL (less tank battery) \$102,505.29

WELL NO.: Federal Doswell 22-45-207
FIELD: Pettigrew-Tocito
LOCATION: SW SE Section 10, 26N-6W, Rio Arriba County,
New Mexico

INTANGIBLE DEVELOPMENT COST

\$72,702.95

Roads & Location \$1,087.70

1. Bulldozer \$320.00
2. Road Grader 80.00
3. Trucking 360.00
4. Labor 190.00
5. Survey location 127.50
6. Furnish elevation 10.20

Drilling Mud & Cement 2,807.93

Well Services 4,476.33

1. Schlumberger 2,881.01
2. Halliburton 445.86
3. Core Lab & Analysis 690.46
4. Diamond Coring Equip 459.00

Water & Fuel 921.00

1. Labor - water line 236.00
2. Labor - Gas line 260.00
3. Trucking 425.00

Miscellaneous Drlg Material 620.50

Welding 213.40

Drilling 62,576.09

1. Footage 54,149.76
2. Day work 7,155.83
3. Cable tools 1,270.50

TANGIBLE WELL EQUIPMENT

26,907.98

1. Surface String (plus frt) 1,699.95
2. Production string (plus frt) 18,228.41
3. Tubing 4,293.47
4. wellhead equipment 2,374.36
5. Miscellaneous Equipment 311.79

TOTAL TO COMPLETE WELL (less tank battery) \$99,610.93

TANK BATTERY FOR WELL NOS:

Federal Doswell 21-40-182

Federal Doswell 22-45-207

FIELD:

Pettigrew-Tocito

LOCATION:

Section 10, 26N-6W

Rio Arriba County, New Mexico

EQUIPMENT & MATERIAL

\$17,418.70

5 - 400 bbl steel tanks
w/walkways & stairways \$8,589.67

1 - Separator 1,096.53

1 - Steam generator 1,543.00

Flow & Gathering Lines

2" Line pipe, 3,142 ft. 1,503.45

2 3/8" line pipe, 64' 36.48

3" Line pipe, 428' 404.20

4" Line pipe, 56' 80.06

Valves & Misc. Fittings 2,694.13

Steam Coils, 200' each tank 470.00

Fencing 99.83

Miscellaneous Material 901.35

SERVICES

1,684.76

Bulldozer 100.00

Road Grader 80.00

Trucking 568.70

Labor 761.64

Welding 174.42

TOTAL FOR TANK BATTERY \$19,103.46