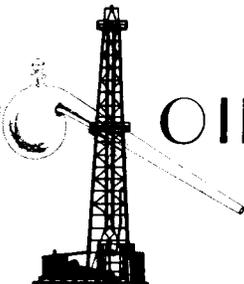


25-16-10E



# OILFIELD RESEARCH LABORATORIES

536 NORTH HIGHLAND - CHANUTE, KANSAS - PHONE HE1-2650

June 4, 1968

Winwell-1968  
Winwell & Kern Drilling Company  
Commercial National Bank Building  
Shreveport, Louisiana 71100

Gentlemen:

Enclosed herewith are the results of tests run on the Rotary core samples taken from the Woodward Lease, Well No. 1, Osage County, Kansas, and submitted to our laboratory on May 30, 1968.

1 Woodward  
These core samples are from a virgin territory and were sampled and the samples were sealed in tin cans by a representative of Oilfield Research Laboratories.

On the basis of the enclosed core data we estimate that this well should produce approximately 71 barrels per acre foot from the formation we analyzed having a permeability above 10 millidarcys.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES



Carl L. Pate

CLP:bjo

3 c. - Magnolia, Arkansas  
1 c. - Wichita, Kansas  
5 c. - Shreveport, Louisiana

# Oilfield Research Laboratories

## GENERAL INFORMATION & SUMMARY

Winwell-1968  
 Company Winwell & Kern Drilling Co. Lease Woodward Well No. 1  
 Location SE, NE, NW  
 Section 23 Twp. 16S Rge. 16E County Osage State Kansas  
 Name of Sand Formation - - - - - Mississippi  
 Top of Core - - - - - 1558.0  
 Bottom of Core - (Recovered) - - - - - 1578.0  
 Top of Sand Formation cored - - - - - 1558.0  
 Bottom of Sand Formation cored - - - - - 1583.0  
 Total Feet of Permeable Sand Formation - - - - - 8.8  
 Total Feet of Floodable Sand - - - - -  
 Distribution of Permeable Sand: Formation  

Permeability Range Millidarcys	Feet	Cum. Ft.
0 - 10	4.2	4.2
10 - 50	2.5	6.7
50 & above	2.1	8.8

  
 Average Permeability Millidarcys - - - - - 32.1  
 Average Percent Porosity - - - - - 15.4  
 Average Percent Oil Saturation - - - - - 60.3  
 Average Percent Water Saturation - - - - - 35.4  
 Average Oil Content, Bbls./A. Ft. - - - - - 721.  
 Total Oil Content, Bbls./Acre - - - - - 8,000.  
 Average Percent Oil Recovery by Laboratory Flooding Tests - - - - -  
 Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft. - - - - -  
 Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre - - - - -  
 Total Calculated Oil Recovery, Bbls./Acre - - - - -  
 Packer Setting, Feet - - - - -  
 Viscosity, Centipoises @ - - - - -  
 A. P. I. Gravity, degrees @ 60 °F - - - - -  
 Elevation, Feet (Kelley Bushing, 5.71' above ground level) 1108.0

- LOG -

Winwell-1968  
Company Winwell & Kern Drilling Co. Lease Woodward Well No. 1

<u>Depth Interval,</u> <u>Feet</u>	<u>Description</u>
---------------------------------------	--------------------

1558.0 - 1558.5 - Dolomite - bleeding.

1558.5 - 1560.5 - Gray &amp; green shale - very slight bleeding.

1560.5 - 1563.0 - Dark dolomite - bleeding good.

1563.0 - 1570.0 - Hard dense limestone with some bleeding.

1570.0 - 1572.0 - Loss.

1572.0 - 1572.5 - Dark dolomite - bleeding.

1572.5 - 1573.5 - Gray dolomite - no bleeding.

1573.5 - 1574.0 - Dark dolomite - bleeding.

1574.0 - 1574.4 - Chert.

1574.4 - 1576.0 - Dark dolomite - bleeding.

1576.0 - 1576.4 - Hard chert.

1576.4 - 1578.0 - Limestone.

1578.0 - 1583.0 - Loss.

Oilfield Research Laboratories

RESULTS OF SATURATION & PERMEABILITY TESTS

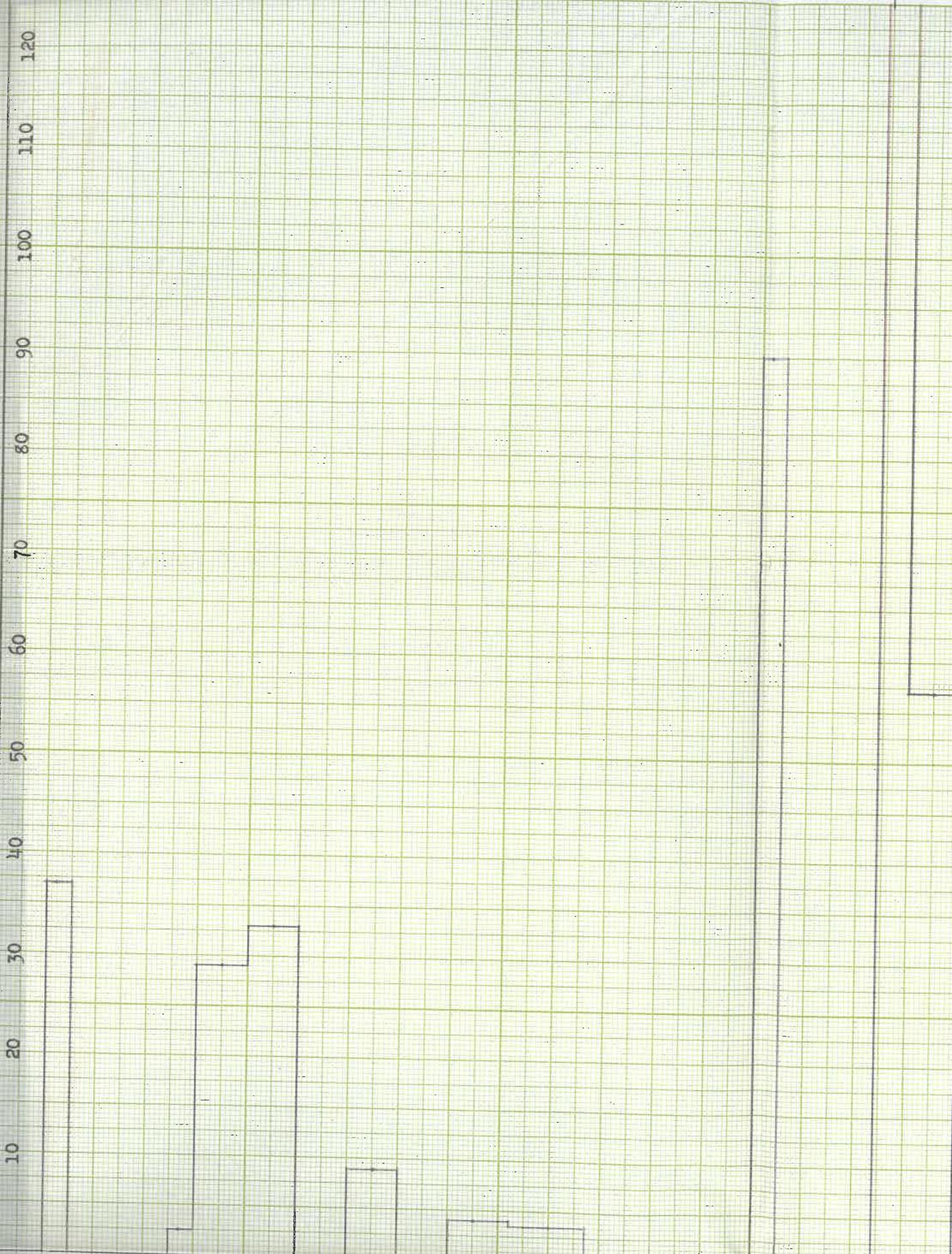
TABLE 1-B

Winwell-1968  
 Company Winwell & Kern Drilling Company Lease Woodward Well No. 1

Sample No.	Depth, Feet	Effective Porosity Percent	Percent Saturation		Oil Content Bbls. / A Ft.	Perm., Mill.	Feet of Sand		Total Oil Content	Perm. Capacity Ft. X md.
			Oil	Water			Ft.	Cum. Ft.		
1	1558.2	20.9	55	42	892	37.	0.5	0.5	446	18.50
2	1560.7	16.8	63	35	821	2.5	0.5	1.0	410	1.25
3	1561.5	19.0	73	25	1076	29.	1.0	2.0	1076	29.00
4	1562.5	16.1	68	30	849	33.	1.0	3.0	849	33.00
5	1564.5	9.6	53	30	395	8.8	1.0	4.0	395	8.80
6	1566.5	18.2	33	64	466	4.0	1.2	5.2	559	4.80
7	1568.0	16.1	42	55	525	3.5	1.5	6.7	788	5.25
8	1569.5	14.1	86	10	941	Imp.	1.3	8.0	1223	0.00
9	1572.2	14.9	78	19	902	90.	0.5	8.5	451	45.00
10	1574.5	18.0	62	34	866	133.	0.6	9.1	520	79.80
11	1575.5	20.2	67	29	1050	57.	1.0	10.1	1050	57.00
12	1576.5	5.1	59	38	233	Imp.	1.0	11.1	233	0.00

AIR PERMEABILITY, MILLIDARCY

10 20 30 40 50 60 70 80 90 100 110 120



133

SHALE

LOSS

○ IMPERMEABLE TO AIR

ERN DRILLING CO.

WELL NO. 1  
COUNTY, KANSAS

PER CON IT	AVG. OIL CONTENT BBLs./A. FT.	TOTAL OIL CONTENT BBLs./ACRE	AVG. AIR PERMEABILITY MILLIDARCY
	721.	8,000	32.1

OILFIELD RESEARCH LABORATORIES  
CHANUTE, KANSAS  
JUNE, 1968

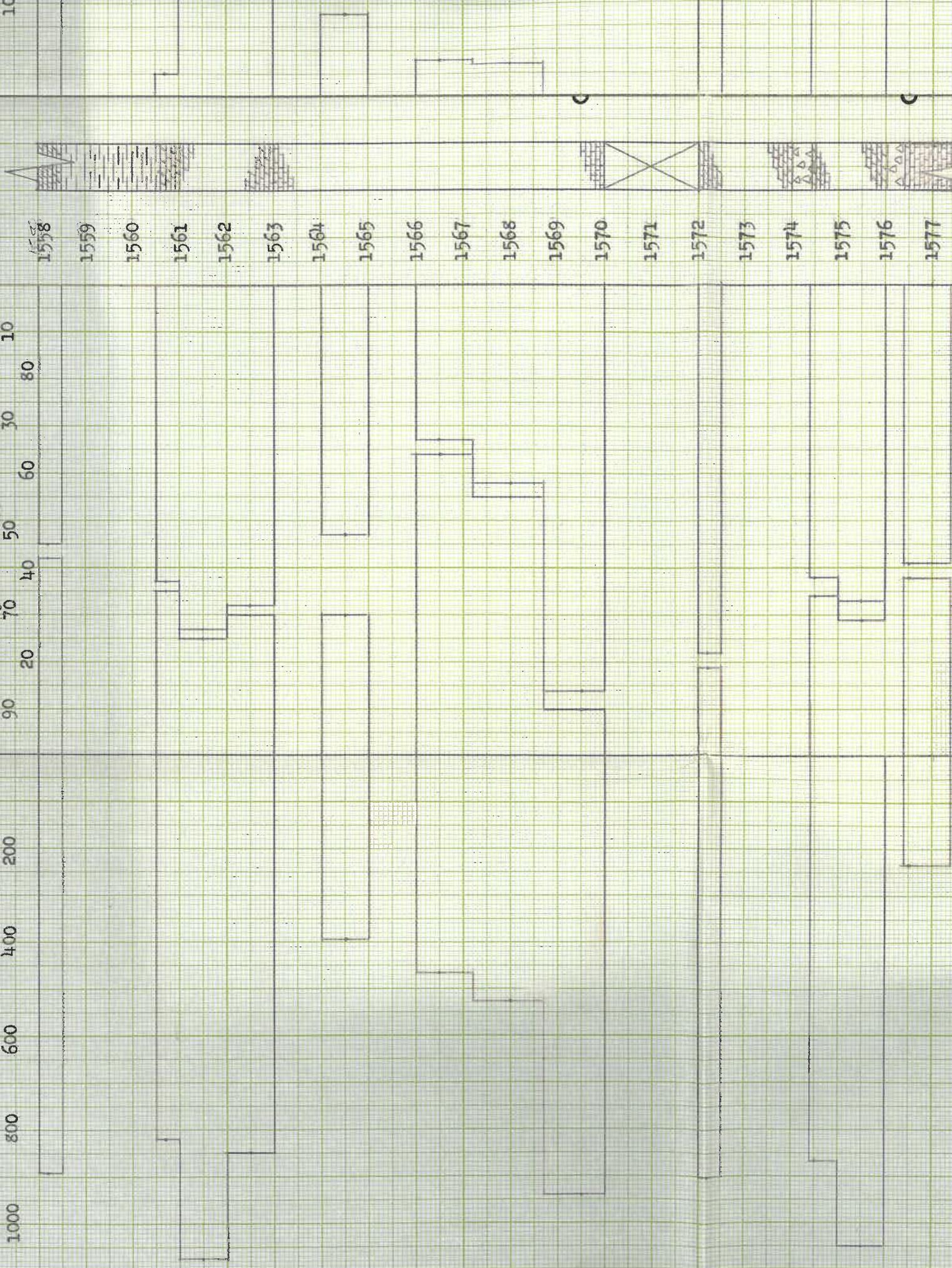
OIL CONTENT  
BEIS./A. FT.

WATER SAT.,  
PERCENT

OIL SAT.,  
PERCENT

1000 800 600 400 200 90 70 50 30 10

1558 1559 1560 1561 1562 1563 1564 1565 1566 1567 1568 1569 1570 1571 1572 1573 1574 1575 1576 1577



KEY:

DOLOMITE

CHERT

LIMESTONE

SHALE

# WINWELL & KERN

WOODWARD LEASE  
OSAGE COUNTY, K

DEPTH INTERVAL FEET	FEET OF CORE ANALYZED	AVERAGE POROSITY PERCENT	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT
1558.0 - 1577.4	11.1	15.4	60.3	35.4