

OILFIELD RESEARCH LABORATORIES

536 NORTH HIGHLAND - CHANUTE, KANSAS 66720 - PHONE (316) 431-2650

April 27, 1982

Bishop Oil & Refining Company
P.O. Box 652
Independence, Kansas 67301

Gentlemen:

Enclosed herewith are the results of tests run on the rotary core taken from your Swearingen Lease, Well No. 3, located in Montgomery County, Kansas.

The core was sampled and sealed in plastic bags by a representative of the client and submitted to our laboratory on April 23, 1982.

Your business is greatly appreciated.

Very truly yours,

OILFIELD RESEARCH LABORATORIES

Sanford A. Michel

SAM/tem

5 c to Independence, KS

Oilfield Research Laboratories

GENERAL INFORMATION & SUMMARY

Company Bishop Oil & Refining Company Lease Swearingen Well No. 3
 Location 165' NSL & 765' WEL SE $\frac{1}{4}$
 Section 34 Twp. 32S Rge. 16E County Montgomery State Kansas

Elevation, Feet

Name of Sand.....

Peru

Top of Core

478.0

Bottom of Core

498.0

Top of Sand

478.3

Bottom of Sand

498.0

Total Feet of Permeable Sand

17.4

Distribution of Permeable Sand: Permeability Range Millidarcys

Feet

Cum. Ft.

0 - 10

5.9

5.9

10 - 20

4.2

10.1

20 - 40

5.7

15.8

40 - 59

1.6

17.4

Average Permeability Millidarcys

20.9

Average Percent Porosity

16.8

Average Percent Oil Saturation

21.3

Average Percent Water Saturation

56.9

Average Oil Content, Bbls./A. Ft.

282.

Total Oil Content, Bbls./Acre

5,381.

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LOGCompany Bishop Oil & Refining Company Lease Swearingen Well No. 3

<u>Depth Interval,</u> <u>Feet</u>	<u>Description</u>
	PERU SAND
478.0 - 478.3	Gray shale.
478.3 - 485.8	Light brown sandstone with scattered micaceous partings.
485.8 - 486.4	Grayish brown shaly sandstone.
486.4 - 486.7	Light brown sandstone.
486.7 - 488.1	Light brown slightly shaly sandstone.
488.1 - 489.5	Grayish brown very shaly sandstone.
489.5 - 490.0	Light brown slightly shaly sandstone.
490.0 - 491.3	Grayish brown very shaly sandstone.
491.3 - 493.5	Light brown sandstone.
493.5 - 493.8	Light brown slightly shaly sandstone.
493.8 - 495.5	Gray very shaly sandstone.
495.5 - 498.0	Light brown sandstone.

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RESULTS OF SATURATION & PERMEABILITY TESTS

TABLE 1-B

Company Bishop Oil & Refining Company Lease Swearingen Well No. 3

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	478.4	17.1	23	53	76	305	58.	0.6	183	34.80
2	479.5	18.3	17	45	62	241	35.	1.6	241	35.00
3	480.6	18.7	26	41	67	377	26.	1.0	377	26.00
4	481.7	19.2	26	50	76	387	31.	1.0	387	31.00
5	482.8	18.1	30	49	79	421	14.	1.0	421	14.00
6	483.4	18.9	24	54	78	352	24.	0.9	317	21.60
7	484.6	18.3	34	49	83	483	15.	1.0	483	15.00
8	485.4	17.5	26	53	79	353	9.9	1.0	353	9.90
9	486.5	19.8	25	46	71	384	24.	0.3	115	7.20
10	487.7	18.4	25	54	79	357	8.9	1.4	500	12.46
11	488.5	13.0	11	75	86	111	0.57	1.4	155	0.80
12	489.6	18.4	21	48	69	300	8.3	0.5	150	4.15
13	490.4	10.8	29	65	94	243	0.18	1.3	316	0.23
14	491.5	18.4	20	52	72	286	19.	1.2	343	22.80
15	492.6	14.7	32	58	90	365	11.	1.0	365	11.00
16	493.6	13.7	22	64	86	234	7.5	0.3	70	2.25
17	494.5	9.8	8	86	94	61	Imp.	1.7	104	0.00
18	495.6	20.5	14	51	65	223	38.	0.5	112	19.00
19	496.4	20.9	14	48	62	227	58.	1.0	227	58.00
20	497.6	20.9	10	57	67	162	38.	1.0	162	38.00

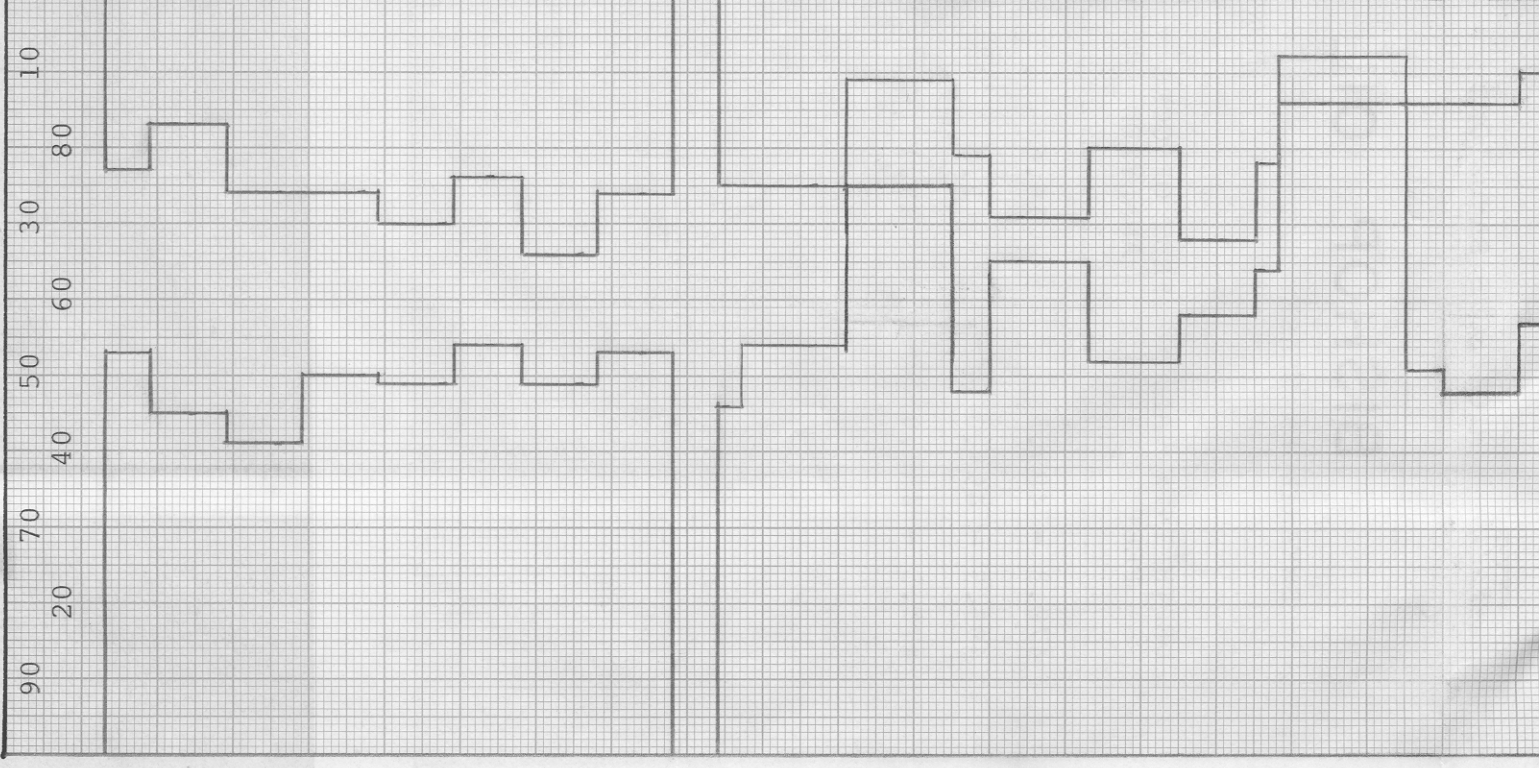
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SUMMARY OF PERMEABILITY & SATURATION TESTS

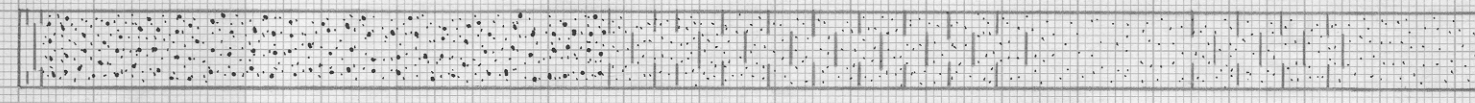
TABLE III

Company		Bishop Oil & Refining Company		Lease		Swearingen		Well No.	
								3	
Depth Interval, Feet	Depth Interval, Feet	Feet of Core Analyzed		Average Permeability, Millidarcys		Permeability Capacity Ft. x Md.			
478.3 - 495.5	478.3 - 495.5	14.9		16.7		248.19			
495.5 - 498.0	495.5 - 498.0	2.5		46.0		115.00			
478.3 - 498.0	478.3 - 498.0	17.4		20.9		363.19			
Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity		Average Percent Oil Saturation		Average Percent Water Saturation		Average Oil Content Bbl./A. Ft.	
478.3 - 495.5	16.6	16.2		22.7		57.6		294	
495.5 - 498.0	2.5	20.8		12.4		52.2		200	
478.3 - 498.0	19.1	16.8		21.3		56.9		282	
								4,880	
								501	
								5,381	

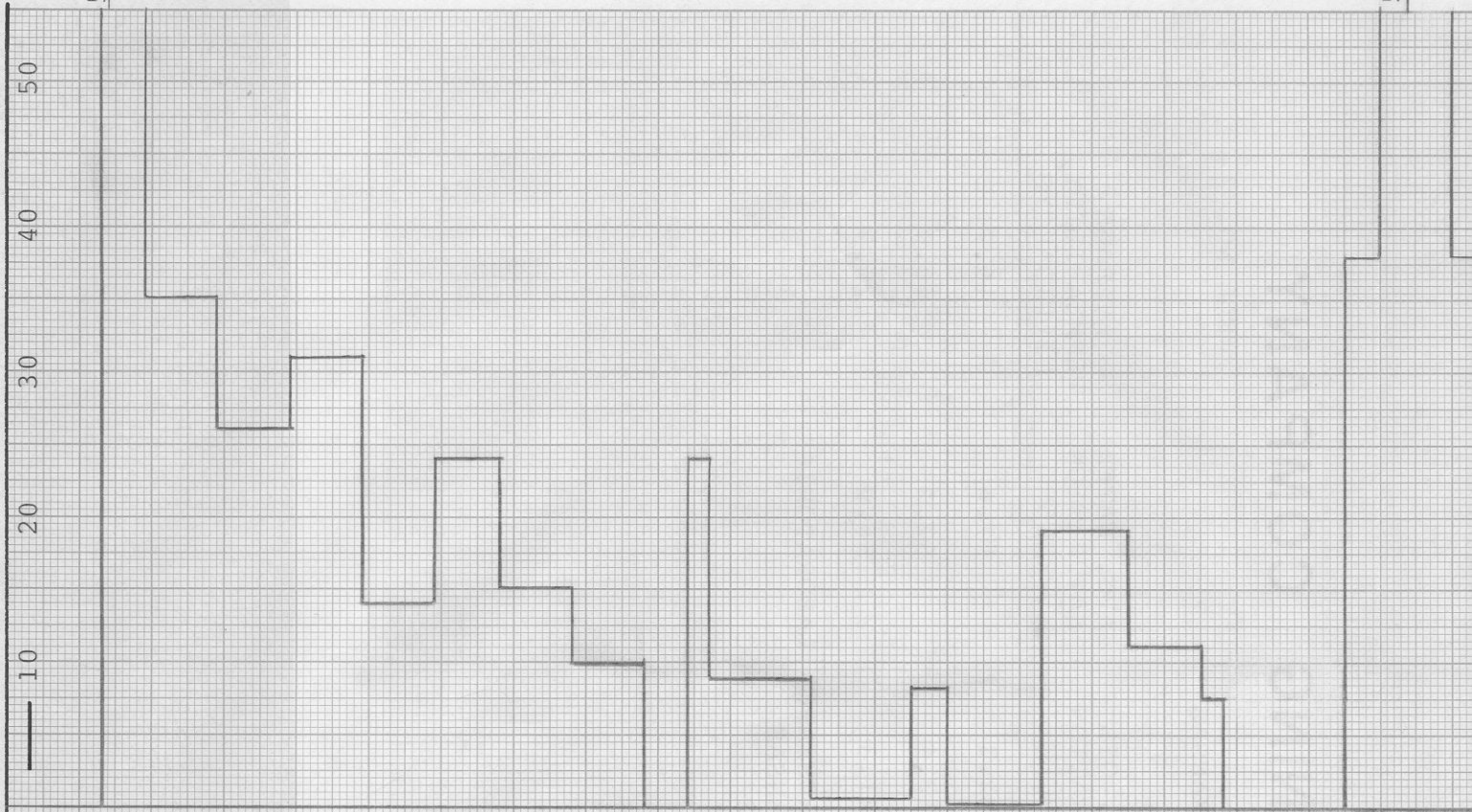
WATER SAT., PERCENT → ← OIL SAT., PERCENT



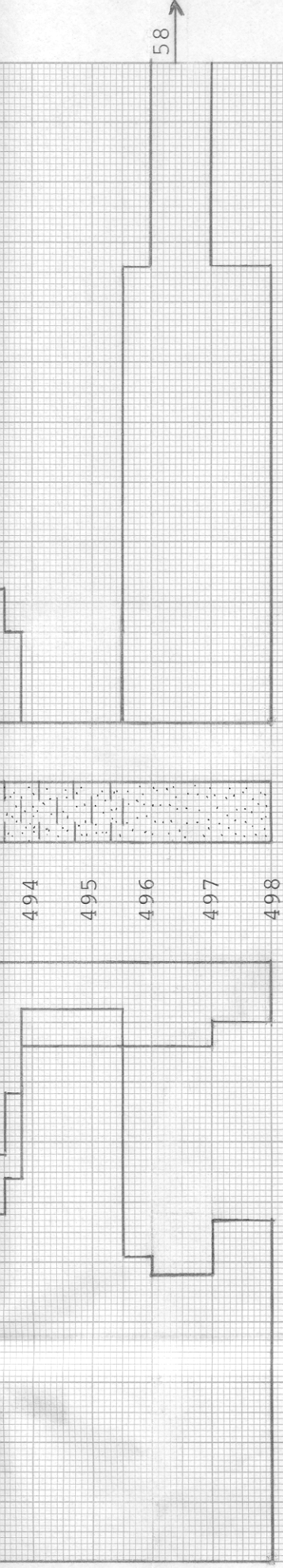
478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497



PERMEABILITY, IN MILLIDARCYS



58



KEY:



SANDSTONE

MICACEOUS SANDSTONE

SHALE

SHALY SANDSTONE

BISHOP OIL & REFINING COMPANY

SWEARINGEN LEASE

MONTGOMERY COUNTY, KANSAS

WELL NO. 3

DEPTH INTERVAL, FEET	FEET OF CORE ANALYZED	AVERAGE PERCENT POROSITY	AVG. OIL SATURATION PERCENT	AVG. WATER SATURATION PERCENT	AVERAGE PERMEABILITY, MILLIDARCYS
478.3 - 495.5	16.6	16.2	22.7	57.6	16.7
495.5 - 498.0	2.5	20.8	12.4	52.2	46.0
478.3 - 498.0	19.1	16.8	21.3	56.9	20.9

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CHANUTE, KANSAS
APRIL, 1982 PDC