COMPANY Panhandle Development Company

WELL Simonson # 1

COUNTY Seward

STATE Kansas

HYCALOG

Hycalog, Inc.
505 AERO DRIVE P. O. BOX 7197
Shreveport, Louisiana

September 13, 1960

Panhandle Development Company
P. O. Box 457
Liberal, Kansas

Subject: Core Analysis Report On
Simonson # 1 Well
Sec ~~28~~ 24 T 33S R 31W
Seward County, Kansas

Gentlemen:

Diamond core samples taken from this well between the depths of 4265.0 and 5926.0 feet have been analyzed in our core analysis unit # 7. Results of the analysis are submitted in tabular and graphical form herein.

4268.0 - 4277.0 - Gas
4288.0 - 4294.0 - Gas
4853.0 - 4868.0 - Gas

Analysis of the above intervals indicate porous and permeable limestone sections interpreted to be productive of gas.

4868.0 - 4871.0 - Oil
5836.0 - 5865.0 - Oil

Analysis of the above intervals indicate porous and permeable limestone sections interpreted to be productive of oil.

A summary of the core analysis and calculations is included in this report.

The opportunity to have been of service is greatly appreciated.

Yours very truly,

HYCALOG, INC.

W. H. Brock, Jr.

W. H. Brock, Jr.
Core Analysis Director

gbl
Encl.

HYCALOG, INC.

CORE ANALYSIS REPORT

Company Panhandle Development Company Location _____ File _____

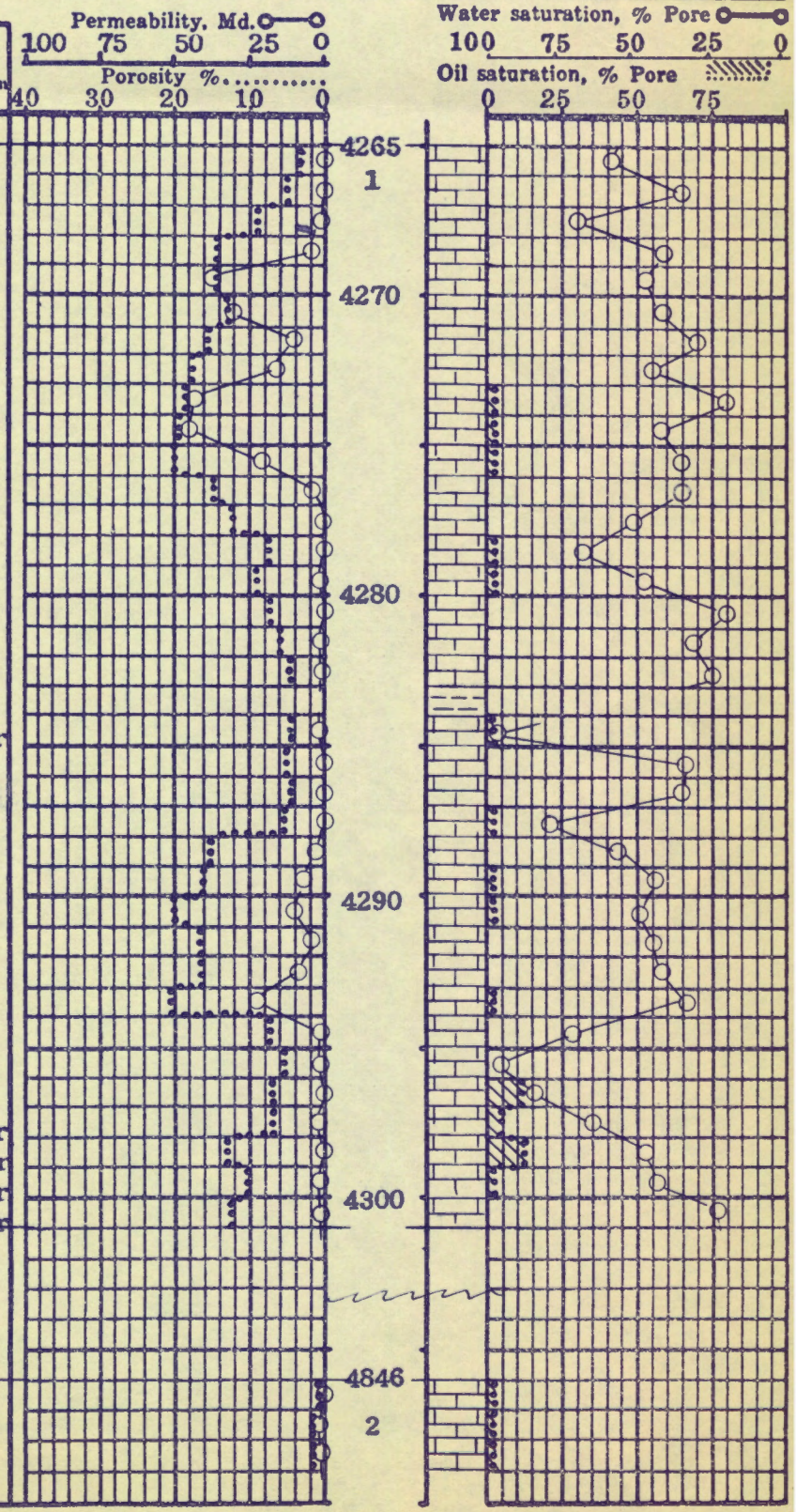
Well Simonson # 1 Legend: Sand..... _____ Eng. _____

Field _____ Shale..... _____ Unit _____

Lime..... _____

County Seward State Kansas Remarks _____

Depth Feet	Permeability Millidarcys	Porosity Percent	Residual Saturation Percent Pore Space Oil	Residual Saturation Percent Pore Space Water	Probable Production
4265.5	0.0	3.6	0.0	58.0	Nil
4266.5	0.0	5.4	0.0	35.5	Nil
4267.5	Trace	9.1	0.0	70.9	Nil
4268.5	4.8	14.4	0.0	41.4	Gas
4269.5	36.7	14.4	0.0	47.0	Gas
4270.5	30.6	13.0	0.0	41.3	Gas
4271.5	10.1	15.7	0.0	30.9	Gas
4272.5	16.8	17.7	0.0	45.4	Gas
4273.5	43.8	18.4	Trace	20.6	Gas
4274.5	44.4	19.5	Trace	42.0	Gas
4275.5	21.1	20.0	Trace	35.4	Gas
4276.5	4.7	14.6	0.0	35.6	Gas
4277.5	0.0	12.3	0.0	51.8	Nil
4278.5	0.0	7.8	Trace	68.9	Nil
4279.5	Trace	9.3	Trace	47.0	Nil
4280.5	0.0	7.6	0.0	20.5	Nil
4281.5	Trace	6.0	0.0	31.0	Nil
4282.5	0.0	4.8	0.0	25.3	Nil
4284.5	1.7	4.6	Trace	98.9	Water
4285.5	0.0	5.4	0.0	34.9	Nil
4286.5	0.0	4.4	0.0	35.0	Nil
4287.5	0.0	5.9	Trace	78.1	Nil
4288.5	2.5	15.2	0.0	56.0	Gas
4289.5	7.1	16.1	Trace	44.0	Gas
4290.5	9.8	20.0	Trace	48.9	Gas
4291.5	4.6	16.4	0.0	45.0	Gas
4292.5	9.4	16.2	0.0	42.0	Gas
4293.5	22.6	20.9	Trace	34.4	Gas
4294.5	0.0	7.1	0.0	72.9	Nil
4295.5	Trace	5.8	0.0	96.1	Nil
4296.5	0.0	7.1	10.7	84.1	Nil
4297.5	2.5	7.1	5.0	65.9	Water
4298.5	1.4	13.1	12.5	47.4	Water
4299.5	1.3	10.0	0.5	44.0	Water
4300.5	0.5	12.5	0.0	24.2	Water
4846.5	0.0	0.5	Trace		Nil
4847.5	1.4	1.7	Trace		Nil
4848.5	Trace	1.9	Trace		Nil



HYCALOG, INC.

CORE ANALYSIS REPORT

Company Panhandle Development Company Location _____ File _____

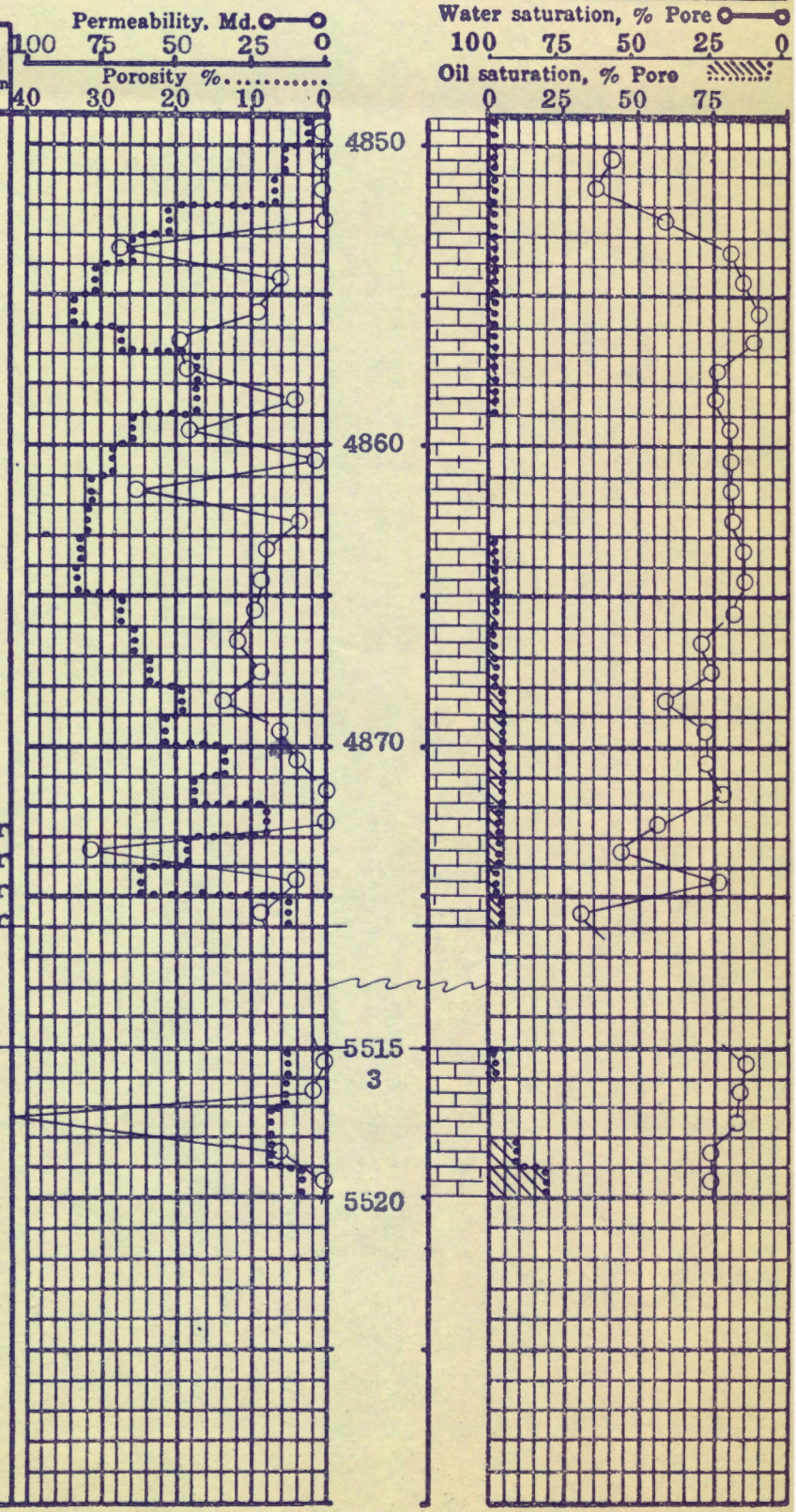
Well Simonson # 1 Legend: Sand..... _____ Enz. _____

Field _____ Shale..... _____ Unit _____

Lime..... _____

County _____ State _____ Remarks _____

Depth Feet	Permeability Millidarcys	Porosity Percent	Residual Saturation Percent Pore Space Oil	Water	Probable Production
4849.5	Trace	2.3	Trace		Nil
4850.5	Trace	5.8	Trace	58.0	Nil
4851.5	Trace	6.8	Trace	64.0	Nil
4852.5	Trace	20.7	Trace	41.9	Nil
4853.5	68.0	25.9	Trace	19.2	Gas
4854.5	15.3	30.6	Trace	15.3	Gas
4855.5	22.0	33.4	Trace	9.5	Gas
4856.5	48.0	27.3	Trace	11.1	Gas
4857.5	46.9	17.3	Trace	23.4	Gas
4858.5	10.8	17.6	Trace	24.6	Gas
4859.5	45.8	25.8	0.0	19.6	Gas
4860.5	3.7	28.2	0.0	19.5	Gas
4861.5	62.8	31.0	0.0	19.2	Gas
4862.5	9.2	31.9	0.0	18.1	Gas
4863.5	20.9	32.6	Trace	15.6	G/C
4864.5	21.0	33.1	Trace	14.4	G/C
4865.5	23.3	27.4	Trace	17.2	G/C
4866.5	29.6	25.5	Trace	29.0	G/C
4867.5	22.4	23.5	Trace	25.9	G/C
4868.5	33.3	19.4	4.1	41.5	Oil
4869.5	15.0	21.4	4.2	27.9	Oil
4870.5	10.1	13.7	4.8	27.4	Oil
4871.5	0.0	17.8	4.3	21.6	Oil
4872.5	0.0	8.0	3.3	43.6	Water
4873.5	78.0	18.9	3.3	55.5	Water
4874.5	10.1	24.6	2.6	23.6	Water
4875.5	22.1	4.9	4.3	69.9	Water
5515.5	Trace	5.6	2.4	14.3	Nil
5516.5	4.7	5.7	0.0	15.9	Gas
5517.5	161.0	7.5	0.0	17.5	Gas
5518.5	16.0	7.6	9.8	26.5	Gas
5519.5	Trace	3.5	18.8	26.1	Nil



HYCALOG, INC.

CORE ANALYSIS REPORT

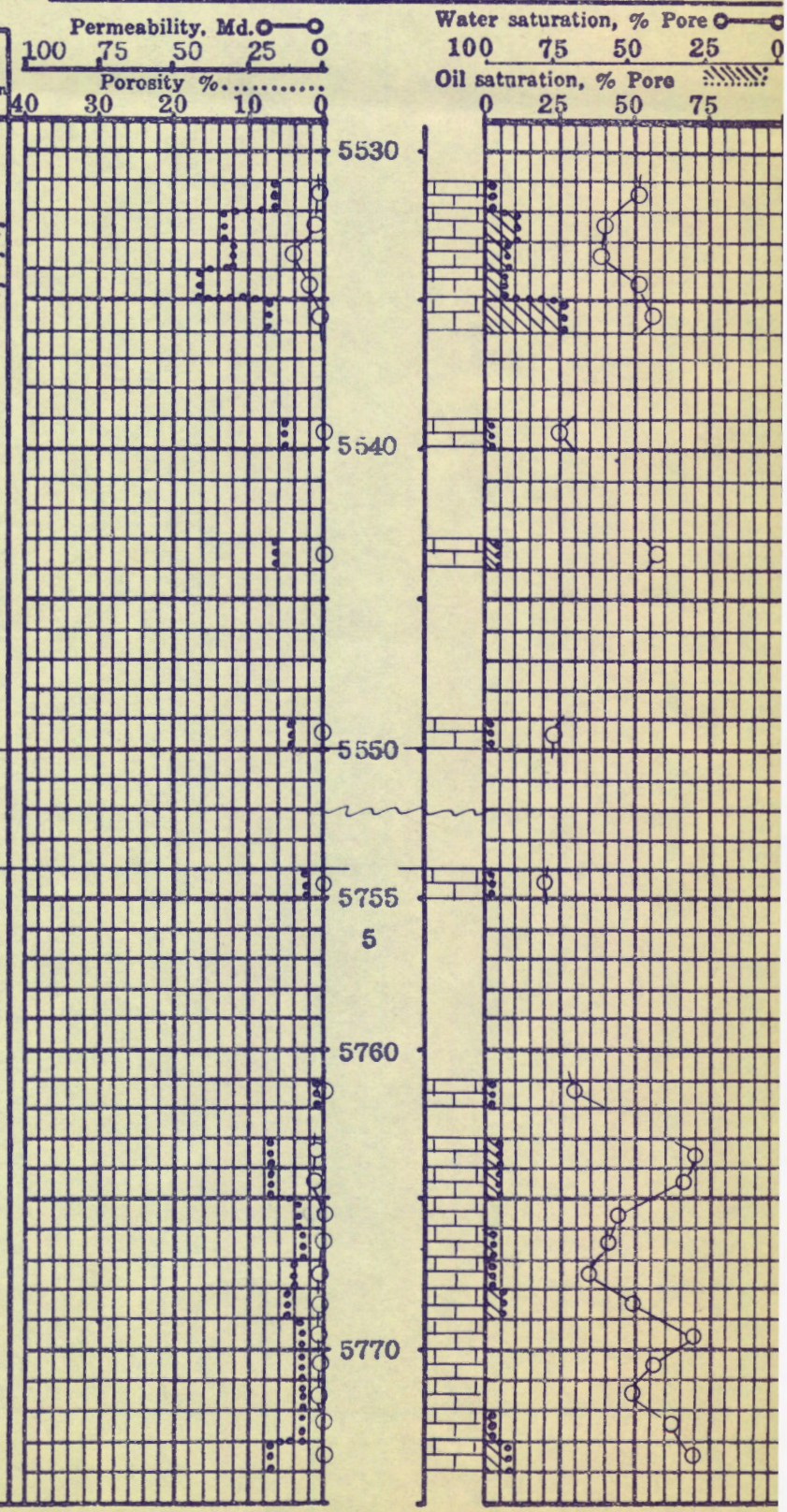
Company Panhandle Development Company Location _____ File _____

Well Simonson # 1 Legend: Sand..... Shale..... Lime..... Eng. _____

Field _____ Unit _____

County _____ State _____ Remarks _____

Depth Feet	Permeability Millidarcys	Porosity Percent	Residual Saturation Percent Pore Space Oil	Water	Probable Production
5531.5	Trace	6.6	Trace	49.4	Nil
5532.5	2.5	13.4	10.1	60.9	Water
5533.5	10.1	12.0	7.5	61.2	Water
5534.5	4.7	16.3	6.6	48.1	Water
5535.5	Trace	7.5	25.4	44.4	Nil
5539.5	0.0	5.2	Trace	75.0	Nil
5543.5	0.0	6.1	4.2	42.0	Nil
5549.5	0.0	4.1	Trace	76.0	Nil
5754.5	0.0	2.5	Trace	79.5	Nil
5761.5	0.0	1.0	Trace	71.0	Nil
5763.5	2.4	7.2	4.2	30.6	Gas
5764.5	3.7	7.3	4.1	33.3	Gas
5765.5	0.0	3.7	0.0	56.1	Nil
5766.5	Trace	3.3	Trace	59.0	Nil
5767.5	Trace	4.0	Trace	66.4	Nil
5768.5	Trace	4.8	5.1	51.0	Nil
5769.5	Trace	2.7	0.0	30.2	Nil
5770.5	Trace	3.1	0.0	43.0	Nil
5771.5	0.0	2.7	0.0	51.7	Nil
5772.5	0.0	2.8	Trace	37.2	Nil
5773.5	0.0	2.8	8.6	30.2	Nil



HYCALOG, INC.

CORE ANALYSIS REPORT

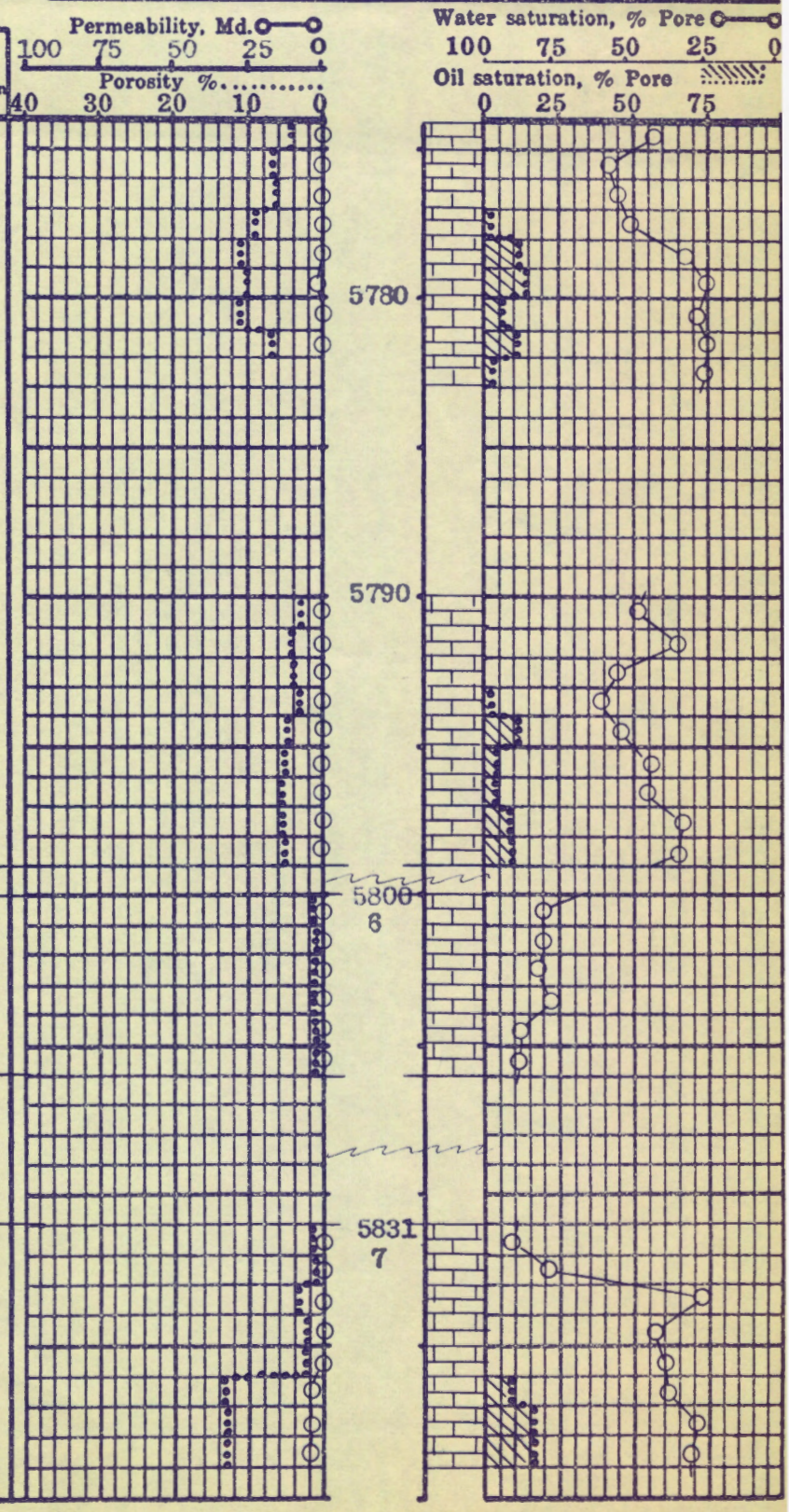
Company Panhandle Development Company Location _____ File _____

Well Simonson #1 26-33-31 Legend: Sand..... _____ Eng. _____

Field Kismet Shale..... _____ Unit _____

County Seward State Kan Lime..... _____ Remarks _____

Depth Feet	Permeability Millidarcys	Porosity Percent	Residual Saturation Percent Pore Space		Probable Production
			Oil	Water	
5774.5	0.0	5.0	0.0	42.1	Nil
5775.5	0.0	4.5	0.0	58.3	Nil
5776.5	0.0	6.5	0.0	55.2	Nil
5777.5	0.0	6.3	2.5	51.6	Nil
5778.5	0.0	9.3	11.4	32.8	Nil
5779.5	Trace	11.1	14.7	25.0	Nil
5780.5	0.0	10.0	6.8	29.4	Nil
5781.5	0.0	11.0	10.0	25.0	Nil
5790.5	0.0	3.2	0.0	48.0	Nil
5791.5	0.0	4.2	0.0	35.0	Nil
5792.5	0.0	4.0	0.0	55.0	Nil
5793.5	0.0	3.6	Trace	61.4	Nil
5794.5	0.0	4.7	10.8	54.5	Nil
5795.5	0.0	5.4	4.7	43.0	Nil
5796.5	0.0	5.8	4.1	45.0	Nil
5797.5	0.0	5.9	8.4	33.5	Nil
5798.5	0.0	5.6	9.0	34.1	Nil
5800.5	0.0	1.8	0.0	79.5	Nil
5801.5	0.0	1.2	0.0	80.0	Nil
5802.5	0.0	1.4	0.0	82.0	Nil
5803.5	0.0	1.5	0.0	77.0	Nil
5804.5	0.0	1.5	0.0	87.0	Nil
5805.5	0.0	1.4	0.0	88.0	Nil
5831.5	0.0	1.4	0.0	86.0	Nil
5832.5	0.0	1.0	0.0	78.0	Nil
5833.5	0.0	3.9	0.0	27.1	Nil
5834.5	0.0	2.6	0.0	42.7	Nil
5835.5	0.0	2.4	0.0	39.0	Nil
5836.5	3.4	13.4	9.6	38.5	Oil
5837.5	3.3	13.0	15.4	29.0	Oil
5838.5	4.0	12.9	15.5	31.0	Oil



HYCALOG, INC.

CORE ANALYSIS REPORT

Company Panhandle Development Company Location _____ File _____

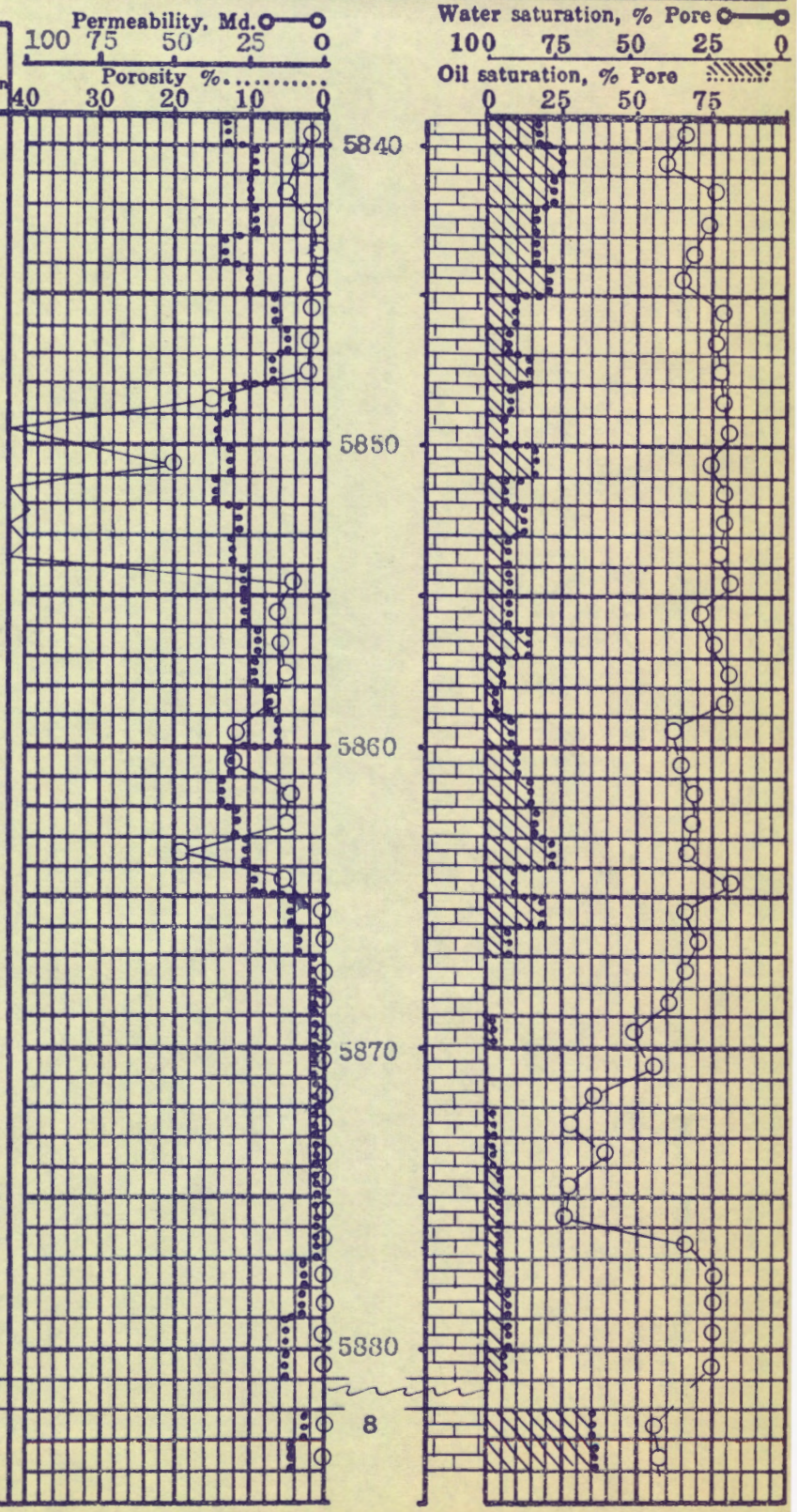
Well Simonson # 1 Legend: Sand..... _____ Eng. _____

Field _____ Shale..... _____ Unit _____

Lime..... _____

County _____ State _____ Remarks _____

Depth Feet	Permeability Millidarcys	Porosity Percent	Residual Saturation Percent Pore Space		Probable Production
			Oil	Water	
5839.5	4.8	12.9	17.4	33.1	Oil
5840.5	8.7	9.5	25.0	40.1	Oil
5841.5	13.2	10.0	22.0	24.2	Oil
5842.5	4.9	9.8	15.4	26.6	Oil
5843.5	1.2	13.4	15.3	31.5	Oil
5844.5	3.2	10.0	20.0	35.0	Oil
5845.5	4.5	6.5	9.1	21.8	Oil
5846.5	5.3	5.2	7.6	23.7	Oil
5847.5	5.6	6.7	14.4	22.0	Oil
5848.5	37.2	12.1	7.1	21.5	Oil
5849.5	139.0	14.2	5.2	18.8	Oil
5850.5	50.0	12.5	15.1	25.0	Oil
5851.5	370.0	14.4	5.5	21.8	Oil
5852.5	123.0	11.4	11.7	21.4	Oil
5853.5	367.0	12.0	6.5	22.5	Oil
5854.5	10.2	10.5	6.3	19.0	Oil
5855.5	15.5	10.6	7.8	28.8	Oil
5856.5	14.6	8.8	14.3	24.0	Oil
5857.5	12.9	9.6	5.0	19.5	Oil
5858.5	17.6	7.1	3.0	21.4	Oil
5859.5	28.8	6.1	8.3	37.0	Oil
5860.5	29.5	12.3	10.0	35.0	Oil
5861.5	11.7	13.7	15.0	31.5	Oil
5862.5	12.0	11.6	15.2	32.2	Oil
5863.5	47.0	10.5	21.9	33.6	Oil
5864.5	13.8	9.6	9.9	19.5	Oil
5865.5	0.0	4.1	19.2	33.2	Nil
5866.5	0.0	3.5	7.2	28.8	Nil
5867.5	0.0	1.5	0.0	33.8	Nil
5868.5	0.0	1.1	0.0	39.8	Nil
5869.5	0.0	1.3	Trace	51.0	Nil
5870.5	0.0	1.7	0.0	44.1	Nil
5871.5	0.0	1.2	0.0	64.5	Nil
5872.5	0.0	1.0	Trace	72.0	Nil
5873.5	0.0	1.2	1.1	61.5	Nil
5874.5	0.0	1.0	4.8	72.0	Nil
5875.5	0.0	1.0	4.6	74.0	Nil
5876.5	0.0	1.9	4.3	33.0	Nil
5877.5	0.0	2.6	4.2	24.0	Nil
5878.5	0.0	3.0	6.3	24.7	Nil
5879.5	0.0	5.2	6.4	24.8	Nil
5880.5	0.0	5.4	5.2	25.0	Nil
5882.5	0.0	2.8	35.0	43.2	Nil
5883.5	0.0	4.2	35.8	42.4	Nil



HYCALOG, INC.

CORE ANALYSIS REPORT

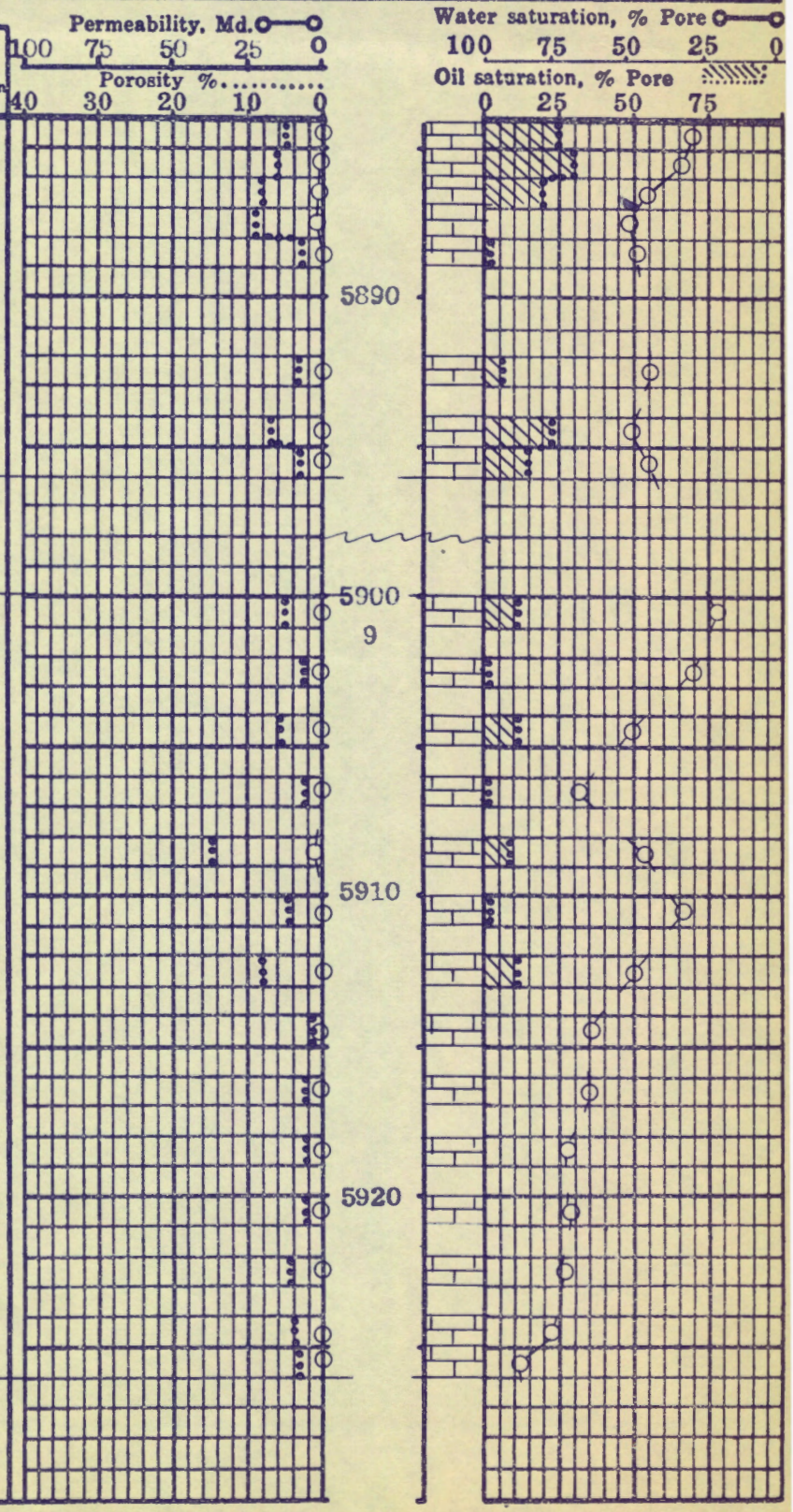
Company Panhandle Development Company Location _____ File _____

Well Simonson # 1 Legend: Sand..... Shale..... Lime..... Eng. _____

Field _____ Unit _____

County _____ State _____ Remarks _____

Depth Feet	Permeability Millidarcys	Porosity Percent	Residual Saturation Percent Pore Space		Probable Production
			Oil	Water	
5884.5	0.0	5.1	25.0	30.0	Nil
5885.5	Trace	6.0	30.0	34.8	Nil
5886.5	Trace	8.6	20.2	45.8	Nil
5887.5	1.8	9.0	0.0	51.5	Nil
5888.5	0.0	2.9	Trace	49.0	Nil
5892.5	0.0	3.4	5.2	44.6	Nil
5894.5	0.0	7.0	23.2	51.5	Nil
5895.5	0.0	3.3	15.1	45.5	Nil
5900.5	0.0	4.8	11.0	22.0	Nil
5902.5	0.0	2.5	Trace	30.6	Nil
5904.5	0.0	5.5	11.5	51.0	Nil
5906.5	0.0	2.4	Trace	67.3	Nil
5908.5	1.6	14.5	9.3	47.5	Nil
5910.5	0.0	4.5	Trace	33.5	Nil
5912.5	0.0	8.0	11.2	50.0	Nil
5914.5	0.0	1.5	0.0	64.0	Nil
5916.5	0.0	2.0	0.0	65.0	Nil
5918.5	0.0	2.0	0.0	72.0	Nil
5920.5	0.0	2.3	0.0	71.0	Nil
5922.5	0.0	4.4	0.0	72.8	Nil
5924.5	0.0	4.0	0.0	77.9	Nil
5925.5	0.0	3.7	0.0	83.0	Nil



Hycalog, Inc.
P. O. BOX 7197 505 AERO DRIVE
Shreveport, Louisiana

SUMMARY OF CORE ANALYSIS & CALCULATIONS

Company: Panhandle Development Company

Well: Simonson # 1

Permeable Section Depths	4268-4277	4288-4294	4853-4868	4868-4871	5836-5865
Permeable Thickness Net Feet	9.0	6.0	15.0	3.0	29.0
Permeability Average Millidarcys	23.7	9.3	30.0	19.4	47.0
Productivity Capacity Millidarcy-Feet*	213	56.0	450	58.4	1362
Porosity Average Percent	16.4	17.5	27.4	18.2	10.7
Reservoir Pore Space Total Average Barrels/Acre Foot	(1)	(1)	(1)	1410	830
Residual Oil Average % of Pore Space	Trace	Trace	Trace	4.4	12.2
Total Water Average % of Pore Space	37.7	45.5	18.8	32.3	27.3

OIL RECOVERY CALCULATIONS

By Gas Expansion Barrels/Acre Foot (to zero pressure)	(1)	(1)	(1)	205	129
By Complete Water Drive Barrels/Acre Foot (to 100% Water Cut)	(1)	(1)	(1)	784	410

(1) Gas Type Reservoir.

*Note: Fractures present or successful use of acidization may increase the productive capacity materially.