

OIL FIELD RESEARCH LABORATORIES

1028 S. SANTA FE

TELEPHONE 728

CHANUTE, KANSAS

February 21, 1951

M. F. A. Oil Company
Chanute, Kansas

Gentlemen:

Enclosed herewith is the report of the partial analysis made on the Cable Tool core taken from the Reinhardt & Burghart Lease, Well No. B-1, Neosho County, Kansas, and submitted to our laboratory on February 11, 1951.

Inasmuch as the sand is pressured up, no calculated recovery is given as the value would not be representative.

Very truly yours,

OIL FIELD RESEARCH LABORATORIES

Clayton A. Nattier

CAN:mm
c.c.

33-27-19B

Reinhardt & Burghart B-1

THE M. F. A. OIL COMPANY

CORE ANALYSIS REPORT

REINHARDT & BURGHART LEASE LINE#WELL NO. B-1

NEOSHO COUNTY, KANSAS

OIL FIELD RESEARCH LABORATORIES

CHANUTE, KANSAS

FEBRUARY 21, 1951

Oil Field Research Laboratories

GENERAL INFORMATION & SUMMARY

Company M. F. A. Oil Company Lease Reinhardt & Burghart Well No. B-1 Line

Location _____

Section 33 Twp 27 Rge 19 County Neosho State Kansas

Name of Sand	Bartlesville
Top of Core	670.00
Bottom of Core	725.60
Top of Sand	697.50
Bottom of Sand	724.93
Total Feet of Permeable Sand	17.94

Distribution of Permeable Sand: Permeability Range Millidarcys	Feet	Cum. Ft.
_____	_____	_____

Effective Average Permeability Millidarcys	10.67
Average Percent Porosity	20.34
Average Percent Oil Saturation	34.69
Average Percent Water Saturation	-
Average Oil Content, Bbls./A. Ft.	593.
Total Oil Content, Bbls./Acre	12,071.
Average Percent Oil Recovery by Laboratory Flooding Tests	8.40
Average Oil Recovery by Laboratory Flooding Tests, Bbls./A. Ft.	137.
Total Oil Recovery by Laboratory Flooding Tests, Bbls./Acre	2,456.
Total Calculated Oil Recovery, Bbls./Acre	-
Packer Setting, Feet	698.00
Viscosity, Centipoises @	
A. P. I. Gravity, degrees @ 60 °F	

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LOG

Company M.F.A. Oil Company Lease Reinhardt & Burghart Well No. B-1

<u>Depth Interval, Feet</u>	<u>Description</u>
670.00 - 677.00	- According to log. Gray shale. (Discarded at well.)
677.00 - 677.60	- Gray shale.
677.60 - 677.76	- Light brown fine grained micaceous shaley sandstone.
677.76 - 681.45	- Gray sandy shale.
681.45 - 682.02	- Laminated shaley sandstone.
682.02 - 682.22	- Laminated sandy shale.
682.22 - 683.00	- Light brown fine grained micaceous sandstone.
683.00 - 685.25	- Gray shale.
685.25 - 686.00	- Finely laminated shaley sandstone.
686.00 - 690.10	- Gray shale containing sand streaks.
690.10 - 690.58	- Brown fine grained micaceous sandstone.
690.58 - 690.71	- Gray shale.
690.71 - 690.90	- Brown fine grained micaceous sandstone.
690.90 - 691.71	- Gray shale.
691.70 - 692.30	- Light brown fine grained micaceous sandstone.
692.30 - 695.23	- Alternate layers of sandstone and shale.
695.23 - 697.10	- Brown fine grained micaceous sandstone containing two shale breaks.
697.10 - 697.50	- Gray shale.
697.60 - 697.70	- Brown fine grained slightly laminated micaceous shaley sandstone.
697.70 - 698.35	- Brown fine grained micaceous sandstone.
698.35 - 698.77	- Alternate layers of sandstone and shale.
698.77 - 702.40	- Brown fine grained micaceous slightly shaley sandstone.
702.40 - 703.43	- Brown fine grained micaceous sandstone.
703.43 - 704.90	- Brown ^{fine grained} fingrained micaceous slightly shaley sandstone.

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CHANUTE, KANSAS

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- 704.90 - 706.30 - Brown fine grained micaceous sandstone.
- 706.30 - 706.50 - Brown fine grained micaceous shaley sandstone.
- 706.50 - 707.00 - Soft gray sandy shale.
- 707.00 - 709.55 - Gray shale.
- 709.55 - 711.93 - Dark brown fine grained micaceous sandstone.
- 711.93 - 712.40 - Laminated sandy shale.
- 712.40 - 714.50 - Dark brown fine grained micaceous sandstone containing a shale break.
- 714.50 - 714.60 - Laminated sandy shale.
- 714.60 - 714.70 - Dark brown fine grained laminated micaceous carbonaceous sandstone.
- 714.70 - 715.90 - Dark brown fine grained micaceous sandstone.
- 715.90 - 716.00 - Dark brown fine grained laminated micaceous carbonaceous sandstone.
- 716.00 - 716.20 - Gray shale.
- 716.20 - 719.45 - Dark brown fine grained micaceous sandstone containing a shale break.
- 719.45 - 719.56 - Dark brown fine grained micaceous slightly conglomeratic sandstone.
- 719.56 - 720.28 - Dark brown medium grained laminated micaceous carbonaceous sandstone containing a shale streak.
- 720.28 - 723.70 - Dark brown medium grained micaceous sandstone.
- 723.70 - 723.95 - Dark brown medium grained micaceous slightly conglomeratic sandstone.
- 723.95 - 724.93 - Dark brown medium grained sandstone.
- 724.93 - 725.00 - Gray shale.
- 725.00 - 725.30 - According to log. Soft gray shale. (Discarded at well)
- 725.30 - 725.60 - According to log. Coal. (Discarded at well.)

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SHOT RECOMMENDATION

Company The M. F. A. Oil Company Lease Reinhardt & Burghart Well No. B-1 Linewell

Depth Interval, Feet	Feet of Sand	Size of Shell Inches	Qts./Ft.	Total Quarts
700.0 - 706.5	6.5	3½	2.0	13.00
706.5 - 722.0	<u>15.5</u>	3	1.5	<u>23.25</u>
Total - - - - -	22.0			36.25

Recommended Pack Setting 698.0 feet.
Note: Plug hole back to 724.0 feet.

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RESULTS OF SATURATION TESTS

TABLE III

Company The M. F. A. Oil Company Lease Reinhardt & Burghart Line B-1 Well No. B-1

Sat. No.	Depth, Feet	Effective Porosity Percent	Percent Saturation			Oil Content, Bbls./A. Ft.	Feet of Core		Total Oil Content Bbls./Acre
			Oil	Water	Total		Ft.	Cum. Ft.	
1	697.76	18.0	29.3	-	-	410	0.65	0.65	266
2	698.93	17.8	27.2	-	-	376	0.93	1.58	350
3	700.37	17.8	29.0	-	-	401	1.30	2.88	521
4	701.67	17.2	29.3	-	-	391	1.40	4.28	547
5	702.86	20.0	29.4	-	-	457	1.03	5.31	471
6	704.07	18.6	31.0	-	-	438	1.47	6.78	644
7	705.23	20.0	27.0	-	-	420	1.40	8.18	587
8	706.43	16.9	25.6	-	-	336	0.20	8.38	67
9	709.75	19.3	45.3	-	-	680	0.70	9.08	476
10	710.77	19.4	41.4	-	-	624	1.05	10.13	655
11A	711.87	19.3	47.9	-	-	718	0.63	10.76	453
12	713.53	21.6	39.7	-	-	666	2.00	12.76	1,330
13	714.77	23.8	41.0	-	-	757	0.50	13.26	379
14	715.64	21.2	42.7	-	-	703	0.70	13.96	492
15	716.56	23.0	39.0	-	-	697	0.67	14.63	467
16	717.96	23.9	40.0	-	-	742	1.37	16.00	1,018
17	719.07	22.4	38.7	-	-	673	0.95	16.95	640
18	720.46	22.3	34.7	-	-	601	0.82	17.77	493
19	721.67	21.5	33.9	-	-	566	1.10	18.87	624
20	722.83	20.7	27.6	-	-	444	1.60	20.37	666
21	724.23	21.6	44.8	-	-	751	1.23	21.60	925
Total							-	- - - -	12,071

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SUMMARY OF SATURATION TESTS

TABLE IV

Company <u>The M. F. A. Oil Company</u>				Lease <u>Reinhardt & Burghart</u>		Line Well No. <u>B01</u>
Depth Interval, Feet	Feet of Core Analyzed	Average Percent Porosity	Average Percent Oil Saturation	Average Percent Water Saturation	Average Oil Content Bbls./A. Ft.	Total Oil Content Bbls./Acre
697.70 - 706.50	8.38	18.48	28.84	-	413	3,453
709.55 - 714.50	4.38	20.39	42.21	-	665	2,914
714.70 - 724.93	8.84	22.14	37.38	-	645	5,704
698.00 - 724.00	20.37	20.34	34.69	-	593	12,071

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RESULTS OF LABORATORY FLOODING TESTS

TABLE V

Company The M. F. A. Oil Company Lease Reinhardt & Burghart Line No. B-1

Sample No.	Depth, Feet	Effective Porosity Percent	Original Oil Saturation		Oil Recovery		Residual Saturation			Volume of Water Recovered cc*	Effective Permeability, Millidarcys **	Initial Fluid Production Pressure Lbs./Sq. In.
			Percent	Bbls./A. Ft.	Percent	Bbls./A. Ft.	% Oil	% Water	Bbls./A. Ft.			
1	697.76	18.0	29.3	410	5.1	71	24.2	56.6	339	8	0.250	30
2	698.93	17.8	27.2	376	0.0	0	27.2	56.7	376	18	0.622	35
3	700.37	17.8	29.0	401	0.0	0	29.0	60.0	401	4	0.125	40
4	701.67	17.2	29.3	391	2.0	27	27.3	64.9	364	7	0.173	35
5	702.86	20.0	29.4	457	2.7	42	26.7	60.5	415	25	1.46	25
6	704.07	18.6	31.0	438	2.3	23	28.7	60.5	415	8	0.390	35
7	705.23	20.0	27.0	420	2.2	34	24.8	60.0	386	3	0.382	35
8	706.43	16.9	25.6	336	0.0	0	25.6	56.5	336	0	Imp.	50
9	709.75	19.3	45.3	680	20.9	314	24.4	58.5	366	46	0.900	10
10	710.77	19.4	41.4	624	13.0	196	28.4	60.0	428	46	1.72	15
11A	711.87	19.3	47.9	718	22.7	370	23.2	63.5	348	111	4.00	5
12	713.53	21.6	39.7	666	13.1	220	26.6	66.6	446	132	6.00	5
13	714.77	23.8	41.0	757	4.4	81	26.6	53.4	676	122	29.00	5
14	715.64	21.2	42.7	703	17.9	295	24.8	62.8	408	108	11.50	5
15	716.56	23.0	39.0	697	15.6	279	23.4	62.3	418	86	14.00	5
16	717.96	23.9	40.0	742	11.2	208	28.8	60.6	534	126	24.00	5
17	719.07	22.4	38.7	673	15.7	273	23.0	61.8	400	210	32.00	5
18	720.46	22.3	34.7	601	2.3	40	32.4	55.3	561	25	25.00	5
19	721.67	21.5	33.9	566	4.8	80	29.1	61.8	486	161	32.00	5
20	722.83	20.7	27.6	444	1.3	21	26.3	60.8	423	169	13.20	5
21	724.23	21.6	44.8	751	7.4	124	37.4	52.6	627	149	2.90	15

Notes: cc - cubic centimeter.

*Volume of water recovered at the time of maximum oil recovery.

**Determined by passing water through sample which still contains residual oil.

"A" sample was taken from the core after it was received in the laboratory.

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SUMMARY OF LABORATORY FLOODING TESTS

TABLE VI

Company	The M. F. A. Oil Company			Lease	Reinhardt & Burghart	Line	B-1
						Well No.	
Depth Interval, Feet	697.70-706.30	709.55-774.50	714.70-724.93	698.00-724.00			
Feet of Core Analyzed	5.95	4.38	8.84	17.94			
Average Percent Porosity	18.79	20.43	22.14	20.71			
Average Percent Original Oil Saturation	29.20	42.17	37.37	35.58			
Average Percent Oil Recovery	2.59	15.98	8.34	8.40			
Average Percent Residual Oil Saturation	26.61	26.19	29.03	27.18			
Average Percent Residual Water Saturation	61.01	63.24	59.10	61.18			
Average Percent Total Residual Fluid Saturation	87.62	89.43	88.13	88.36			
Average Original Oil Content, Bbls./A. Ft.	423.	666.	645.	574.			
Average Oil Recovery, Bbls./A. Ft.	35.	251.	145.	137.			
Average Residual Oil Content, Bbls./A. Ft.	388.	415.	500.	437.			
Total Original Oil Content, Bbls./Acre	2,517.	2,917.	5,700.	10,314.			
Total Oil Recovery, Bbls./Acre	209.	1,099.	1,284.	2,456.			
Total Residual Oil Content, Bbls./Acre	2,308.	1,818.	4,416.	7,858.			
Average Effective Permeability, Millidarcys	0.508	3.87	19.72	10.67			
Average Initial Fluid Production Pressure, p.s.i.	32.0	8.8	6.1	13.9			

NOTE: Only those samples which recovered oil were used in calculating the above averages.