

OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from Miami Oil Producers Incorporated's Massacre Hills No. 1 Well drilled in the
NWL/4NW1/4 (603 feet S/N, 806 feet E/W) of sec 36, T 17 N, R 108 W, Sweetwater County, Wyoming

Surface elevation 6,881 feet

Sample number	Run No.	Yield of product				Specific gravity of oil at 60°/60° F	Properties of spent shale		Remarks	
		Weight percent		Gal per ton			Tendency to			
Laramie	Their	Oil	Water	Spent shale	Gas + loss	Oil ^{1/}	Water	coke		
SBR73-13811	142-150					No oil				
SBR73-13812-3	150-170					b				
SBR73-13814	170-180					Trace				
SBR73-13815	180-190	89659	2.4	2.8	92.7	2.1	6.4	6.7	0.907	None
SBR73-13816	190-200	89660	3.1	2.9	92.0	2.0	8.3	7.0	.911	None
SBR73-13817	200-210	89661	2.1	2.5	93.6	1.8	5.4	6.0	.915	None
SBR73-13818	210-220	89662	3.6	2.0	92.2	2.2	10.1	4.8	.860	None
SBR73-13819	570-580	89663	.9	1.9	96.0	1.2	2.4a	4.6		None
SBR73-13820	580-590	89664	.9	1.9	96.0	1.2	2.4a	4.6		None
SBR73-13821	590-600	89665	1.7	1.9	94.7	1.7	4.4a	4.7		None
SBR73-13822	600-610	89666	2.7	1.6	93.9	1.8	6.9	4.0	.925	None
SBR73-13823	610-620	89667	3.1	2.2	92.6	2.1	8.1	5.3	.912	None
SBR73-13824	620-630	89668	2.8	2.3	93.0	1.9	7.4	5.5	.919	None
SBR73-13825	630-640	89669	3.2	2.4	92.3	2.1	8.4	5.6	.911	None
SBR73-13826	640-650	89670	4.0	2.2	91.8	2.0	10.4	5.4	.914	None
SBR73-13827	650-660	89671	4.3	2.2	91.3	2.2	11.2	5.3	.911	None
SBR73-13828	660-670	89672	5.2	2.0	90.6	2.2	13.7	4.8	.909	None
SBR73-13829	670-680	89673	4.5	2.5	90.6	2.4	11.9	6.0	.912	None
SBR73-13830	680-690	89674	3.7	2.7	91.5	2.1	9.7	6.4	.923	None
SBR73-13831	690-700	89675	3.7	6.0	86.4	3.9	9.4	14.4	.930	None
SBR73-13832	700-710	89676	4.2	7.5	83.3	5.0	10.7	18.0	.928	None
SBR73-13833	710-720	89677	6.5	3.0	87.5	3.0	16.9	7.2	.924	None
SBR73-13834	720-730	89678	5.7	2.5	89.4	2.4	14.6	6.0	.931	None
SBR73-13835	730-740	89679	4.9	2.6	90.2	2.3	12.6	6.2	.930	None
SBR73-13836	740-750	89680	4.7	1.5	91.6	2.2	12.3	3.6	.923	None
SBR73-13837	750-760	89681	4.0	1.6	92.8	1.6	10.4	3.8	.917	None
SBR73-13838	760-770	89682	3.5	3.0	90.1	3.4	9.0	7.2	.929	None
SBR73-13839	770-780	89683	4.3	2.0	91.9	1.8	11.3	4.8	.913	None
SBR73-13840	780-790	89684	2.6	1.5	94.8	1.1	6.6	3.6	.922	None
SBR73-13841	790-800	89685	3.0	1.6	94.1	1.3	8.0	3.8	.915	None

See footnote at end of table.

Drill cutting samples received August 9, 1973; assays made on air-dried samples

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Surface elevation 6,881 feet

Sample number		Run No.	Yield of product				Specific gravity of oil at 60°/60° F	Properties of spent shale		Remarks
			Weight percent		Gal per ton			Tendency to		
Laramie	Their		Oil	Water	Spent shale	Gas + loss	Oil ¹ / _{Water}	coke		
SBR73-13842	800- 810	89686	1.6	1.6	96.1	0.7	4.1a	3.8	None	
SBR73-13843	810- 820	89687	2.9	1.2	94.2	1.7	7.5	3.0	0.920	None
SBR73-13844	820- 830	89688	2.7	1.4	94.5	1.4	7.0	3.4	.924	None
SBR73-13845	830- 840	89689	3.3	1.6	93.8	1.3	8.6	3.8	.916	None
SBR73-13846	840- 850	89690	3.6	1.8	99.2	1.4	9.5	4.3	.915	None
SBR73-13847	850- 860	89691	3.5	1.5	93.5	1.5	9.0	3.6	.916	None
SBR73-13848	860- 870	89692	3.6	1.3	93.8	1.3	9.5	3.1	.912	None
SBR73-13849	980- 990	89693	1.2	1.0	97.1	.7	3.0a	2.4		None
SBR73-13850	990-1000	89694	1.2	.9	97.3	.6	3.2a	2.2		None
SBR73-13851	1000-1010	89695	1.9	.7	96.4	1.0	4.8a	1.8		None
SBR73-13852	1010-1020	89696	1.9	.9	95.9	1.3	5.0a	2.0		None
SBR73-13853	1020-1030	89697	2.3	2.0	94.4	1.3	6.1	4.8	.922	None
SBR73-13854	1030-1040	89698	2.2	1.7	94.7	1.4	5.8	4.0	.924	None
SBR73-13855	1040-1050	89699	1.9	1.2	95.6	1.3	4.9a	2.9		None
SBR73-13856	1050-1060	89700	2.5	1.7	94.6	1.2	6.5	4.2	.914	None
SBR73-13857	1060-1070	89701	2.8	1.5	94.3	1.4	7.3	3.7	.917	None
SBR73-13858	1070-1080	89702	2.3	.8	95.8	1.1	6.1	1.9	.914	None
SBR73-13859	1080-1090	89703	1.9	.6	95.9	1.6	4.9a	1.6		None
SBR73-13860	1090-1100	89704	1.1	1.2	97.0	.7	2.8a	2.9		None
SBR73-13861	1100-1110	89705	1.9	1.1	96.1	.9	4.9a	2.8		None
SBR73-13862	1110-1120	89706	1.9	1.0	96.4	.7	4.9a	2.4		None
SBR73-13863	1730-1740	89707	1.9	1.7	95.2	1.2	4.9a	4.1		None
SBR73-13864	1740-1750	89708	2.4	1.5	95.2	.9	6.5	3.6	.896	None
SBR73-13865	1750-1760	89709	4.9	1.2	92.0	1.9	13.2	2.8	.897	None
SBR73-13866	1760-1770	89710	4.2	.9	93.4	1.5	11.1	2.3	.900	None
SBR73-13867	1770-1780	89711	5.3	.9	92.3	1.5	14.2	2.2	.895	None
SBR73-13868	1780-1790	89712	4.6	1.0	92.8	1.6	12.2	2.4	.893	None
SBR73-13869	1790-1800	89713	2.2	1.1	95.4	1.3	5.8	2.8	.909	None
SBR73-13870	1800-1810	89714	3.5	1.0	94.0	1.5	9.3	2.4	.908	None
SBR73-13872	1820-1830	89715	5.5	.8	91.7	2.0	14.5	2.0	.912	None

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Surface elevation 6,881 feet

Sample number		Run No.	Yield of product				Specific gravity of oil at 60°/60° F	Properties of spent shale		Remarks
			Weight percent		Gal per ton			Tendency to		
Laramie	Their		Oil	Water	Spent shale	Gas + loss	Oil ¹ / _{Water}		coke	
SBR73-13873	1830-1840	89716	5.4	1.0	91.9	1.7	14.3	2.3	0.912	None
SBR73-13874	1840-1850	89717	5.7	1.2	91.5	1.6	14.9	2.9	.910	None
SBR73-13875	1850-1860	89718	5.6	1.0	91.7	1.7	14.7	2.3	.915	None
SBR73-13876	1860-1870	89719	5.7	1.4	91.0	1.9	15.0	3.4	.911	None
SBR73-13877	1870-1880	89720	5.6	.7	91.2	2.5	14.5	1.8	.916	None
SBR73-13878	1880-1890	89721	5.4	1.2	91.7	1.7	14.2	3.0	.910	None
SBR73-13879	1890-1900	89722	6.1	.9	91.2	1.8	16.1	2.2	.910	None
SBR73-13880	1910-1920	89723	5.6	1.7	90.9	1.8	14.9	4.1	.907	None
SBR73-13881	1920-1930	89724	7.7	1.9	88.1	2.3	20.4	4.6	.903	None
SBR73-13882	1930-1940	89725	6.6	2.3	88.8	2.3	17.5	5.6	.901	None
SBR73-13883	1940-1950	89726	4.7	2.2	91.3	1.8	12.5	5.3	.897	None
SBR73-13884	1950-1960	89727	4.8	2.4	90.8	2.0	12.7	5.8	.895	None
SBR73-13885	1960-1970	89728	5.5	2.2	90.1	2.2	14.7	5.3	.894	None
SBR73-13886	1970-1980	89729	4.0	2.2	91.7	2.1	10.8	5.3	.897	None
SBR73-13887	1980-1990	89730	4.5	2.1	91.7	1.7	12.1	5.0	.890	None
SBR73-13888	1990-2000	89731	4.0	1.8	92.3	1.9	10.7	4.3	.898	None
SBR73-13889	2010-2020	89732 ^a	2.0	1.7	94.6	1.7	5.3a	4.1		None
SBR73-13890	2020-2030	89732 ^b	2.0	1.6	95.2	1.2	5.1a	3.8		None
SBR73-13891	2040-2050	89733 ^a	1.6	7.2	89.0	2.2	4.1a	17.3		None
SBR73-13892	2050-2060	89733 ^b	.9	6.6	91.0	1.5	2.3a	15.8		None
SBR73-13893	2060-2070	89734 ^a	1.8	7.0	88.1	3.1	4.8a	16.8		None
SBR73-13894	2070-2080	89734 ^b	1.3	6.0	89.9	2.8	3.3a	14.4		None
SBR73-13895	2080-2090	89735	2.1	3.0	93.6	1.3	5.4	7.2	.929	None
SBR73-13896	2090-2100	89736	2.7	4.0	92.0	1.3	6.7	9.6	.932	None
SBR73-13897	2100-2110	89737	4.1	4.4	89.7	1.8	10.6	10.5	.928	None
SBR73-13898	2110-2120	89738	2.0	4.0	92.9	1.1	5.2	9.6	.911	None
SBR73-13900-4	2130-2180						c			
SBR73-13905	2180-2190						b			
SBR73-13906-8	2190-2220						Trace			
SBR73-13909	2220-2230						c			

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Surface elevation 6,881 feet

Sample number		Run No.	Yield of product				Specific gravity of oil at 60°/60° F	Properties of spent shale		Remarks
			Weight percent		Spent shale	Gas + loss		Gal per ton		
Laramie	Their		Oil	Water					Oil ¹ /	Water
SBR73-13910-1	2230-2250						b			
SBR73-13912-5	2260-2300						b			
SBR73-13916-7	2300-2320						Trace			
SBR73-13918	2320-2330						b			
SBR73-13919-20	2330-2350						Trace			
SBR73-13921	2350-2360						No oil			
SBR73-13922	2360-2370						Trace			
SBR73-13923-6	2370-2410						No oil			
SBR73-13927	2410-2420	89739	1.0	2.0	96.3	0.7	2.5a	4.8	0.907	None
SBR73-13928	2420-2430	89740	2.8	1.9	94.1	1.2	7.5	4.6		None
SBR73-13929	2430-2440	89741	1.8	1.5	95.4	1.3	4.8a	3.7		None
SBR73-13930	2440-2450	89742	1.4	1.7	96.0	.9	3.6a	4.1		None
SBR73-13931-2	2450-2470						c			
SBR73-13933-5	2470-2500						b			
SBR73-13936	2500-2510						No oil			
SBR73-13937	2510-2520	89743	1.1	2.3	95.5	1.1	2.8a	5.6		None
SBR73-13938	2520-2530	89744	9.8	5.0	79.0	6.2	26.2	12.0	.897	None
SBR73-13939	2530-2540	89745	.2	2.7	96.1	1.0	.5a	6.5		None
SBR73-13940-5	2540-2600						b			
SBR73-13946-52	2600-2670						c			
SBR73-13953-5	2670-2700						b			
SBR73-13956	2700-2710						Trace			
SBR73-13957-62	2710-2770						No oil			
SBR73-13963-5	2780-2810						No oil			
SBR73-13966-7	2810-2830						Trace			
SBR73-13968	2830-2840						No oil			
SBR73-13969	2840-2850						Trace			
SBR73-13970-9	2850-2950						No oil			
SBR73-13980	2960-2970						No oil			
SBR73-13981	2970-2980						Trace			

See footnote at end of table.

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Samples from Miami Oil Producers Incorporated's Massacre Hills No. 1 Well (con.)

Surface elevation 6,881 feet

Sample number		Run No.	Yield of product				Specific gravity of oil at 60°/60° F	Properties of spent shale Tendency to coke	Remarks
			Weight percent		Spent shale	Gas + loss			
Laramie	Their		Oil	Water					Oil
SBR73-13982-14043	2980-3600						No oil		

1/ "a"--indicates specific gravity estimated as 0.92. Oil yields were estimated by a rapid test-tube method: "No oil," "Trace," "b"--less than 1 gal oil/ton, "c"--1 to 3 gal oil/ton.

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Laramie Energy Research Center, Laramie, Wyoming, Illustration No. SBR-4589P, Sheet No. 5 of 5 sheets December 21, 1973