

OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from Mintech Corporation and Marathon Oil Company's Grandy No. 1 Well drilled in ^{SW} SW1/4SE1/4 105 feet North and 320 feet East of corner S1/4 of sec 15, T 25 N, R 106 W, Sweetwater County, Wyoming

Collar elevation 6,615 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		Gal per ton						
Laramie	Their	Oil	Water	Spent shale	Gas + loss	Oil ¹ / _{Water}				
SBR71-7022	300-305	60623	0.0	3.9	93.7	2.4	No oil	9.3	None	
SBR71-7023	305-310	60624	.0	4.1	94.5	1.4	No oil	9.7	None	
SBR71-7024	310-315	60625	.0	3.9	94.4	1.7	No oil	9.3	None	
SBR71-7025	315-320	60626	.0	3.9	95.3	.8	No oil	9.3	None	
SBR71-7026	320-325	60627	.0	4.3	94.5	1.2	No oil	10.3	None	
SBR71-7027	325-330	60628	.0	4.0	95.2	.8	No oil	9.6	None	
SBR71-7028	330-335	60629	.0	2.4	92.6	5.0	No oil	5.7	None	
SBR71-7029	335-340	60630	.8	4.5	92.4	2.3	2.2a	10.7	None	
SBR71-7030	340-345	60631	.3	3.1	94.5	2.1	.8a	7.3	None	
SBR71-7031	345-350	60632	.5	3.9	93.4	2.2	1.3a	9.3	None	
SBR71-7032	350-355	60633	.7	4.7	92.2	2.4	1.7a	11.4	None	
SBR71-7033	355-360	60634	1.2	3.1	93.6	2.1	3.2a	7.5	None	
SBR71-7034	360-365	60635	1.3	3.7	93.0	2.0	3.4a	8.9	None	
SBR71-7035	365-370	60636	1.3	4.3	92.1	2.3	3.3a	10.3	None	
SBR71-7036	370-375	60637	1.7	4.0	92.8	1.5	4.5a	9.6	None	
SBR71-7037	375-380	60638	.0	4.2	94.7	1.1	Trace	10.0	None	
SBR71-7038	380-385	60639	.4	3.5	94.3	1.8	1.1a	8.5	None	
SBR71-7039	385-390	60640	1.6	3.5	93.2	1.7	4.2a	8.4	None	
SBR71-7040	390-395	60641	.8	3.2	93.9	2.1	2.2a	7.6	None	
SBR71-7041	395-400	60642	1.7	2.4	93.6	2.3	4.4a	5.7	None	
SBR71-7042	400-405	60643	3.0	3.2	92.1	1.7	7.8a	7.6	None	
SBR71-7043	405-410	60644	3.4	3.1	91.8	1.7	8.9	7.4	0.910	None
SBR71-7044	410-415	60645	5.9	1.5	89.7	2.9	15.4	3.6	.925	None
SBR71-7045	415-420	60646	6.7	1.6	89.5	2.2	17.3	3.9	.920	None
SBR71-7046	420-425	60647	5.6	2.2	88.8	3.4	14.6	5.3	.918	None
SBR71-7047	425-430	60648	4.1	1.4	92.8	1.7	10.6	3.4	.919	None
SBR71-7048	430-435	60649	9.0	2.2	86.1	2.7	23.5	5.2	.915	None
SBR71-7049	435-440	60650	3.2	1.6	93.9	1.3	8.2	3.8	.921	None
SBR71-7050	440-445	60651	2.8	1.8	94.0	1.4	7.3a	4.4		None
SBR71-7051	445-450	60652	4.4	1.9	92.3	1.4	11.5	4.6	.914	None

See footnote at end of table.

Drill cutting samples received August 4, 1971; Assays made on air-dried samples

OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from Mintech Corporation and Marathon Oil Company's Grandy No. 1 Well (con.)

Collar elevation 6,615 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			
SBR71-7052	450-455	60653	7.5	1.2	98.3	3.0	19.6	2.8	0.912	None	
SBR71-7053	455-460	60654	6.6	2.2	89.1	2.1	17.2	5.4	.913	None	
SBR71-7054	460-465	60655	9.1	1.5	86.5	2.9	23.8	3.6	.915	None	
SBR71-7055	465-470	60656	5.3	1.7	91.2	1.8	13.8	4.0	.915	None	
SBR71-7056	470-475	60657	5.7	1.2	90.2	2.9	14.9	3.0	.910	None	
SBR71-7057	475-480	60658	4.9	1.2	91.8	2.1	12.9	2.9	.909	None	
SBR71-7058	480-485	60659	7.4	1.1	88.5	3.0	19.4	2.7	.916	None	
SBR71-7059	485-490	60660	3.8	1.1	93.2	1.9	10.0	2.7	.917	None	
SBR71-7060	490-495	60661	6.9	1.4	89.5	2.2	18.0	3.4	.909	None	
SBR71-7061	495-500	60662	7.4	1.3	88.6	2.7	19.4	3.1	.915	None	
SBR71-7062	500-505	60663	4.3	1.3	92.8	1.6	11.1	3.2	.914	None	
SBR71-7063	505-510	60664	4.4	1.4	92.5	1.7	11.5	3.3	.916	None	
SBR71-7064	510-515	60665	.8	1.8	96.0	1.4	2.0a	4.3		None	
SBR71-7065	515-520	60666	6.1	1.3	90.4	2.2	15.9	3.1	.917	None	
SBR71-7066	520-525	60667	4.2	2.0	92.4	1.4	11.0	4.7	.916	None	
SBR71-7067	525-530	60668	4.6	1.9	91.8	1.7	12.2	4.5	.910	None	
SBR71-7068	530-535	60669	2.8	2.3	93.8	1.1	7.3a	5.6		None	
SBR71-7069	535-540	60670	2.2	1.2	94.3	2.3	5.8a	2.9		None	
SBR71-7070	540-545	60671	2.3	1.1	95.0	1.6	6.0	2.6	.916	None	
SBR71-7071	545-550	60672	2.0	1.5	95.4	1.1	5.2a	3.6		None	
SBR71-7072	550-555	60673	2.3	1.7	93.5	2.5	6.0a	4.0		None	
SBR71-7073	555-560	60674	2.7	2.0	93.7	1.6	7.0	4.7	.916	None	
SBR71-7074	560-565	60675	1.4	1.3	95.8	1.5	3.8a	3.1		None	
SBR71-7075	565-570	60676	1.7	1.8	94.5	2.0	4.3a	4.4		None	
SBR71-7076	570-575	60677	1.0	1.1	95.8	2.1	2.5a	2.6		None	
SBR71-7077	575-580	60678	.5	1.3	95.4	2.8	1.4a	3.1		None	
SBR71-7078	580-585	60679	2.1	1.8	94.7	1.4	5.6a	4.2		None	
SBR71-7079	585-590	60680	3.1	1.9	93.3	1.7	8.0	4.5	.916	None	
SBR71-7080	590-595	60681	.5	1.9	96.3	1.3	1.2a	4.6		None	
SBR71-7081	595-600	60682	1.1	1.8	96.4	.7	2.9a	4.4		None	

See footnote at end of table.

Drill cutting samples received August 4, 1971; Assays made on air-dried samples

OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from Mintech Corporation and Marathon Oil Company's Grandy No. 1 Well (con.)

Collar elevation 6,615 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			Gal per ton					
Laramie	Their		Oil	Water	Spent shale	Gas + loss	Oil ¹ /	Water			
SBR71-7082	600-605	60683	2.9	1.6	94.2	1.3	7.5	3.8	0.921	None	
SBR71-7083	605-610	60684	1.7	1.6	96.0	.7	4.4a	3.9		None	
SBR71-7084	610-615	60685	.6	2.2	96.6	.6	1.6a	5.2		None	
SBR71-7085	615-620	60686	3.2	1.7	93.9	1.2	8.3	4.1	.916	None	
SBR71-7086	620-625	60687	1.9	1.5	95.6	1.0	5.0a	3.6		None	
SBR71-7087	625-630	60688	2.3	1.6	95.2	.9	5.9a	3.7		None	
SBR71-7088	630-635	60689	3.3	1.7	93.6	1.4	8.7	4.1	.918	None	
SBR71-7089	635-640	60690	1.7	1.5	96.1	.7	4.5a	3.6		None	
SBR71-7090	640-645	60691	.2	1.4	97.8	.6	.6a	3.4		None	
SBR71-7091	645-650	60692	2.8	2.1	94.0	1.1	7.3	5.1	.911	None	
SBR71-7092	650-655	60693	1.6	1.1	96.4	.9	4.1a	2.8		None	
SBR71-7093	655-660	60694	.3	.9	98.5	.3	.7a	2.2		None	
SBR71-7094	660-665	60695	.0	1.0	98.7	.3	No oil	2.4		None	
SBR71-7095	665-670	60696	.0	1.6	98.2	.2	No oil	3.9		None	
SBR71-7096	670-675	60697	.0	1.8	97.9	.3	No oil	4.4		None	
SBR71-7097	675-680	60698	.0	2.1	97.6	.3	No oil	5.0		None	
SBR71-7098	680-685	60699	.0	2.4	97.4	.2	No oil	5.8		None	
SBR71-7099	685-690	60700	.3	2.6	97.0	.1	.6a	6.1		None	
SBR71-7100	690-695	60701	1.1	1.3	96.2	1.4	2.7a	3.1		None	
SBR71-7101	695-700	60702	2.1	2.1	94.6	1.2	5.6a	5.0		None	
SBR71-7102	700-705	60703	1.3	1.4	96.8	.5	3.5a	3.3		None	
SBR71-7103	705-710	60704	.9	2.1	96.2	.8	2.4a	5.0		None	
SBR71-7104	710-715	60705	.2	2.2	97.2	.4	.6a	5.3		None	
SBR71-7105	715-720	60706	.0	2.1	97.7	.2	No oil	5.1		None	
SBR71-7106	720-725	60707	.0	1.7	97.8	.5	No oil	4.2		None	
SBR71-7107	725-730	60708	.0	1.9	97.5	.6	No oil	4.6		None	
SBR71-7108	730-735	60709	.0	2.1	97.7	.2	No oil	5.1		None	
SBR71-7109	735-740	60710	.0	2.1	97.7	.2	No oil	5.1		None	
SBR71-7110	740-745	60711	.0	1.9	97.8	.3	No oil	4.5		None	
SBR71-7111	745-750	60712	.0	1.5	98.4	.1	No oil	3.5		None	

See footnote at end of table.

Drill cutting samples received August 4, 1971; Assays made on air-dried samples

OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from Mintech Corporation and Marathon Oil Company's Grandy No. 1 Well (con.)

Collar elevation 6,615 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
SBR71-7112	750-755	60713	0.0	1.2	98.0	0.8	No oil	2.8	None	
SBR71-7113	755-760	60714	.0	1.2	98.2	.6	No oil	2.9	None	
SBR71-7114	760-765	60715	.0	2.0	97.8	.2	No oil	4.9	None	
SBR71-7115	765-770	60716	.0	2.2	97.7	.1	No oil	5.2	None	
SBR71-7116	770-775	60717	.0	1.1	98.6	.3	No oil	2.7	None	
SBR71-7117	775-780	60718	.0	1.4	97.8	.8	No oil	3.4	None	
SBR71-7118	780-785	60719	.0	1.2	97.8	1.0	No oil	2.9	None	
SBR71-7119	785-790	60720	.0	.7	98.0	1.3	No oil	1.7	None	
SBR71-7120	790-795	60721	.0	1.0	97.5	1.5	No oil	2.3	None	
SBR71-7121	795-800	60722	.0	1.2	96.3	2.5	No oil	2.8	None	
SBR71-7122	800-805	60723	.0	1.1	97.2	1.7	No oil	2.7	None	
SBR71-7123	805-810	60724	.0	1.0	97.9	1.1	No oil	2.3	None	
SBR71-7124	810-815	60725	.0	1.1	97.8	1.1	No oil	2.6	None	
SBR71-7125	815-820	60726	.0	.8	97.7	1.5	No oil	2.0	None	
SBR71-7126	820-825	60727	.0	1.4	97.0	1.6	No oil	3.4	None	
SBR71-7127	825-830	60728	.0	1.9	97.3	.8	No oil	4.5	None	
SBR71-7128	830-835	60729	.0	1.6	97.1	1.3	No oil	3.9	None	
SBR71-7129	835-840	60730	.0	1.2	98.7	.1	No oil	2.9	None	
SBR71-7130	840-845	60731	.0	1.4	98.5	.1	No oil	3.3	None	
SBR71-7131	845-850	60732	.0	1.6	98.3	.1	No oil	3.8	None	
SBR71-7132	850-855	60733	.0	1.7	98.2	.1	No oil	4.0	None	
SBR71-7133	855-860	60734	.0	1.5	98.4	.1	No oil	3.6	None	
SBR71-7134	860-865	60735	.0	1.8	98.1	.1	No oil	4.2	None	
SBR71-7135	865-870	60736	.0	1.9	97.7	.4	No oil	4.6	None	
SBR71-7136	870-875	60737	.0	1.0	98.3	.7	No oil	2.5	None	
SBR71-7137	875-880	60738	.0	1.6	98.2	.2	No oil	3.8	None	
SBR71-7138	880-885	60739	.0	1.4	97.8	.8	No oil	3.3	None	
SBR71-7139	885-890	60740	.0	1.9	98.1	.0	No oil	4.5	None	
SBR71-7140	890-895	60742	.0	1.3	97.4	1.3	No oil	3.0	None	
SBR71-7141	895-900	60743	.0	1.1	97.6	1.3	No oil	2.8	None	

Drill cutting samples received August 4, 1971; Assays made on air-dried samples

OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from Mintech Corporation and Marathon Oil Company's Grandy No. 1 Well (con.)

Collar elevation 6,615 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			Gal per ton					
Laramie	Their		Oil	Water	Spent shale	Gas + loss	Oil ^{1/}	Water			
SBR71-7142	900- 905	60744	0.0	1.4	97.9	0.7	No oil	3.3		None	
SBR71-7143	905- 910	60745	.0	1.7	98.0	.3	No oil	4.0		None	
SBR71-7144	910- 915	60746	.0	1.6	97.6	.8	No oil	4.0		None	
SBR71-7145	915- 920	60747	.0	1.7	97.8	.5	No oil	4.1		None	
SBR71-7146	920- 925	60748	.0	1.7	97.8	.5	No oil	3.9		None	
SBR71-7147	925- 930	60749	.0	.5	98.2	1.3	No oil	1.2		None	
SBR71-7148	930- 935	60750	.0	.5	98.2	1.3	No oil	1.3		None	
SBR71-7149	935- 940	60751	.0	1.1	97.9	1.0	No oil	2.6		None	
SBR71-7150	940- 945	60752	.0	1.3	98.2	.5	No oil	3.1		None	
SBR71-7151	945- 950	60753	.0	.5	97.6	1.9	No oil	1.1		None	
SBR71-7152	950- 955	60754	.0	1.4	98.4	.2	No oil	3.4		None	
SBR71-7153	955- 960	60755	.0	1.5	98.3	.2	No oil	3.7		None	
SBR71-7154	960- 965	60756	.0	1.0	98.8	.2	No oil	2.3		None	
SBR71-7155	965- 970	60757	.0	1.6	98.3	.1	No oil	3.9		None	
SBR71-7156	970- 975	60758	.0	1.6	98.4	.0	No oil	3.7		None	
SBR71-7157	975- 980	60759	.0	.9	99.0	.1	No oil	2.2		None	
SBR71-7158	980- 985	60760	.0	.7	99.3	.0	No oil	1.6		None	
SBR71-7159	985- 990	60761	.0	1.2	98.3	.5	No oil	2.9		None	
SBR71-7160	990- 995	60762	.0	1.0	98.4	.6	No oil	2.4		None	
SBR71-7161	995-1000	60763	.0	1.6	98.3	.1	No oil	3.9		None	

^{1/} "a"--indicates specific gravity estimated as 0.92.

Drill cutting samples received August 4, 1971; Assays made on air-dried samples