

OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from U.S. Bureau of Mines' Wyoming Corehole No. 4 drilled in the NE1/4NW1/4 (329 feet S/N, 1,920 feet E/W) of sec 33, T 24 N, R 107 W, Sweetwater County, Wyoming

Surface elevation 6,501 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 coke		
Laramie	Their		Oil	Water	Spent shale	Gas + loss	Oil <sup>1/</sup>	Water		
SBR73-599-619	100.0-280.0						2/No oil			230-240 missing
SBR73-620	280.0-285.0	78971	0.3	2.0	96.8	0.9	.8a	4.8		None
SBR73-621	285.0-290.0	78972	.9	2.7	95.7	.7	2.3a	6.5		None
SBR73-622	290.0-295.0	78973	.6	1.0	94.9	3.5	1.6a	2.4		None
SBR73-623	295.0-300.0	78974	1.7	2.6	94.4	1.3	4.4a	6.2		None
SBR73-624	300.0-310.0	78975	1.8	3.2	94.1	.9	4.7a	7.7		None
SBR73-625	310.0-315.0	78976	1.2	2.9	95.0	.9	3.1a	7.0		None
SBR73-626	315.0-320.0	78977	1.2	2.8	95.0	1.0	3.1a	6.7		None
SBR73-627	320.0-325.0	78978	1.6	2.7	94.7	1.0	4.2a	6.5		None
SBR73-628	325.0-326.0	78979	4.2	2.7	91.5	1.6	10.9	6.5	0.921	None
SBR73-629	326.0-327.0	78980	3.3	2.6	92.7	1.4	8.7	6.2	.909	None
SBR73-630	327.0-328.0	78981	3.9	2.2	92.6	1.3	10.3	5.3	.909	None
SBR73-631	328.0-329.4	78982	3.4	2.4	92.8	1.4	9.0	5.8	.909	None
SBR73-632	329.4-330.4	78983	4.4	2.3	91.7	1.6	11.5	5.5	.918	None
SBR73-633	330.4-331.4	78984	3.7	2.0	93.1	1.2	9.7	4.8	.917	None
SBR73-634	331.4-332.5	78985	5.8	1.6	91.0	1.6	15.4	3.8	.905	None
SBR73-635	332.5-333.8	78986	6.9	1.8	89.5	1.8	18.6	4.3	.891	None
SBR73-636	334.9-336.2	78987	6.6	2.0	89.3	2.1	17.2	4.8	.917	None
SBR73-637	336.2-337.3	78988	5.0	2.1	91.2	1.7	13.1	5.0	.913	None
SBR73-638	337.3-338.3	78989	5.5	2.3	90.1	2.1	14.5	5.5	.910	None
SBR73-639	338.3-339.5	78990	7.9	2.2	87.3	2.6	21.0	5.3	.901	None
SBR73-640	339.9-341.0	78991	7.9	1.3	88.8	2.0	20.9	3.1	.904	None
SBR73-641	341.0-341.7	78992	4.4	2.2	91.6	1.8	11.7	5.3	.898	None
SBR73-642	341.7-343.1	78993	6.5	1.3	90.7	1.5	17.3	3.1	.899	None
SBR73-643	343.1-344.1	79358	6.8	1.6	89.0	2.6	17.9	3.8	.908	None
SBR73-644	344.1-345.1	79359	8.0	2.0	87.2	2.8	21.0	4.8	.911	None
SBR73-2307	345.1-346.2	79360	10.3	3.1	83.1	3.5	26.8	7.4	.920	None
SBR73-2308	346.2-347.2	79361	9.6	3.0	84.0	3.4	25.1	7.2	.916	None
SBR73-2309	347.2-348.2	79362	11.7	3.2	81.5	3.6	30.7	7.7	.913	None
SBR73-2310	348.2-349.2	79363	6.2	1.6	90.6	1.6	16.3	3.8	.910	None

See footnotes at end of table.

Drill cutting and core samples received June 9, 1972; Assays made on air-dried samples

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Samples from U.S. Bureau of Mines' Wyoming Corehole No. 4 (con.)

Surface elevation 6,501 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 <sup>1/</sup>	Water	coke	
SBR73-2311	349.2-350.2	79364	6.5	2.3	88.8	2.4	17.1	5.5	0.911	None
SBR73-2312	350.7-351.7	79365	10.8	2.0	84.1	3.1	28.3	4.8	.913	None
SBR73-2313	351.7-352.9	79366	12.8	2.2	81.9	3.1	33.5	5.3	.915	None
SBR73-2314	352.9-354.0	79367	10.3	2.4	84.1	3.2	27.0	5.8	.914	None
SBR73-2315	354.0-355.0	79368	3.0	3.0	92.3	1.7	7.9	7.2	.906	None
SBR73-2316	355.0-356.0	79369	3.0	2.2	93.5	1.3	7.9	5.3	.910	None
SBR73-2317	356.0-357.0	79370	4.6	1.4	92.5	1.5	12.1	3.4	.914	None
SBR73-2318	357.0-358.0	79371	3.2	1.3	94.4	1.1	8.4	3.1	.915	None
SBR73-2319	358.0-359.0	79372	1.9	1.9	95.4	.8	4.9a	4.6		None
SBR73-2320	361.4-362.7	79373	1.8	2.6	94.6	1.0	4.7a	6.2		None
SBR73-2321	362.7-364.1	79374	3.4	1.2	94.1	1.3	8.9	2.9	.914	None
SBR73-2322	364.1-365.4	79375	5.5	1.8	90.4	2.3	14.4	4.3	.914	None
SBR73-2323	365.4-366.8	79376	4.6	1.5	91.7	2.2	12.1	3.6	.910	None
SBR73-2324	366.8-367.8	79377	6.5	2.1	89.1	2.3	17.2	5.0	.906	None
SBR73-2325	367.8-368.8	79378	7.2	1.6	88.8	2.4	19.3	3.8	.895	None
SBR73-2326	368.8-369.8	79379	8.1	1.5	87.4	3.0	21.5	3.6	.902	None
SBR73-2327	369.8-371.1	79380	8.9	1.6	85.8	3.7	23.5	3.8	.907	None
SBR73-2328	371.1-372.0	79381	4.1	1.4	93.0	1.5	10.8	3.4	.907	None
SBR73-2329	372.0-373.6	79382	10.2	2.2	84.3	3.3	26.9	5.3	.908	None
SBR73-2330	373.6-374.7	79383	11.8	2.2	82.8	3.2	31.1	5.3	.910	None
SBR73-2331	374.7-375.7	79384	7.8	.9	86.6	4.7	20.6	2.2	.908	None
SBR73-2332	375.7-377.0	79385	5.7	1.8	90.2	2.3	15.1	4.3	.905	None
SBR73-2333	377.0-377.7	79386	3.4	1.5	93.7	1.4	9.0	3.6	.910	None
SBR73-2334	378.3-379.6	79387	1.9	1.1	95.8	1.2	5.0	2.6	.917	None
SBR73-2335	379.6-380.6	79388	10.1	1.9	85.5	2.5	26.5	4.6	.914	None
SBR73-2336	380.6-382.0	79389	12.8	1.7	81.8	3.7	33.6	4.1	.912	None
SBR73-2337	382.0-383.1	79390	10.6	1.4	84.4	3.6	27.8	3.4	.915	None
SBR73-2338	383.1-384.4	79391	9.0	1.7	86.4	2.9	23.6	4.1	.912	None
SBR73-2339	384.4-385.5	79392	7.1	1.6	88.6	2.7	18.7	3.8	.911	None
SBR73-2340	385.5-386.5	79393	5.5	1.0	92.0	1.5	14.7	2.4	.898	None

See footnotes at end of table.

Drill cutting and core samples received June 9, 1972; Assays made on air-dried samples

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Surface elevation 6,501 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 <sup>1/</sup>	Water	coke			
SBR73-2341	386.5-387.5	79394	7.9	1.1	88.8	2.2	21.0	2.6	0.902	None	
SBR73-2342	387.5-388.3	79395	7.3	1.4	89.1	2.2	19.4	3.4	.900	None	
SBR73-2343	388.3-389.4	79396	9.5	1.3	86.7	2.5	25.2	3.1	.905	None	
SBR73-2344	389.4-390.6	79397	5.8	1.2	91.0	2.0	15.3	2.9	.908	None	
SBR73-2345	390.6-391.6	79398	4.2	.7	93.8	1.3	11.2	1.7	.901	None	
SBR73-2346	391.6-392.5	79399	9.1	1.3	87.2	2.4	24.2	3.1	.902	None	
SBR73-2347	392.5-393.4	79400	15.1	1.8	79.9	3.2	40.1	4.3	.902	None	
SBR73-2348	393.4-393.9	79401	9.0	1.3	87.2	2.5	23.9	3.1	.903	None	
SBR73-2349	393.9-395.3	79402	3.9	.6	94.3	1.2	10.3	1.4	.904	None	
SBR73-2350	395.3-396.6	79403	3.8	.5	94.4	1.3	10.0	1.2	.909	None	
SBR73-2351	396.6-397.8	79404	17.9	1.8	76.1	4.2	47.3	4.3	.907	Moderate	
SBR73-2352	397.8-398.2	79405	7.2	.6	90.6	1.6	19.2	1.4	.896	None	
SBR73-2353	398.2-399.0	79406	14.0	1.3	81.2	3.5	37.2	3.1	.903	Moderate	
SBR73-2354	399.0-400.0	79408	9.4	1.4	85.9	3.3	24.9	3.4	.905	None	
SBR73-2355	400.0-401.5	79409	4.3	1.1	92.9	1.7	11.3	2.6	.912	None	
SBR73-2356	401.5-403.0	79410	7.6	1.1	88.8	2.5	20.0	2.6	.912	None	
SBR73-2357	403.0-404.0	79411	4.1	.9	93.3	1.7	10.8	2.2	.906	None	
SBR73-2358	404.0-405.0	79420	2.6	.4	95.9	1.1	6.9	1.0	.907	None	
SBR73-2359	405.0-406.0	79421	2.3	.2	96.7	.8	6.0a	.5		None	
SBR73-2360	406.0-406.8	79422	15.5	1.7	79.0	3.8	41.3	4.1	.900	None	
SBR73-2361	406.8-407.6	79423	9.2	1.1	87.1	2.6	24.6	2.6	.897	None	
SBR73-2362	407.6-408.8	79424	4.4	.5	93.7	1.4	11.8	1.2	.895	None	
SBR73-2363	408.8-409.5	79425	12.8	1.5	82.6	3.1	33.8	3.6	.906	None	
SBR73-2364	409.5-410.3	79426	14.8	1.8	80.1	3.3	39.2	4.3	.905	None	
SBR73-2365	410.3-411.3	79427	14.2	1.7	80.3	3.8	37.8	4.1	.899	None	
SBR73-2366	411.3-411.7	79428	10.8	.6	86.9	1.7	29.4	1.4	.880	None	Layered tuff
SBR73-2367	411.7-412.6	79429	13.4	1.6	81.6	3.4	35.8	3.8	.898	None	
SBR73-2368	412.6-414.2	79430	7.4	1.0	89.5	2.1	19.6	2.4	.906	None	
SBR73-2369	414.2-416.0	79431	2.1	.5	96.5	.9	5.5	1.2	.910	None	
SBR73-2370	416.0-416.6	79432	4.6	.4	93.8	1.2	12.1	1.0	.910	None	

See footnotes at end of table.

Drill cutting and core samples received June 9, 1972; Assays made on air-dried samples

## OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from U.S. Bureau of Mines' Wyoming Corehole No. 4 (con.)

Surface elevation 6,501 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 <sup>1/</sup>	Water	coke	
SBR73-2371	416.6-417.7	79433	11.8	1.2	83.7	3.3	31.1	2.9	None	
SBR73-2372	417.7-419.3	79434	9.4	1.4	86.7	2.5	24.8	3.4	None	
SBR73-2373	419.3-421.0	79435	2.2	.6	96.2	1.0	5.8	1.4	None	
SBR73-2374	421.0-422.0	79436	18.2	2.0	75.9	3.9	48.2	4.8	Slight	
SBR73-2375	422.0-422.7	79437	15.4	1.6	78.7	4.3	40.7	3.8	None	
SBR73-2376	422.7-423.2	79438	12.8	1.3	83.1	2.8	33.6	3.1	None	
SBR73-2377	423.2-424.6	79439	2.7	.6	95.5	1.2	7.1	1.4	None	
SBR73-2378	424.6-425.7	79440	2.3	.4	96.3	1.0	6.0	1.0	None	
SBR73-2379	425.7-426.8	79441	.3	.8	98.3	.6	.8a	1.9	None	
SBR73-2380	426.8-427.9	79442	18.3	1.8	76.0	3.9	48.5	4.3	None	
SBR73-2381	427.9-429.0	79443	24.4	2.3	67.4	5.9	64.5	5.5	Moderate	
SBR73-2382	429.0-429.6	79444	16.7	1.6	76.3	5.4	44.3	3.8	Slight	
SBR73-2383	429.6-430.9	79445	8.6	1.0	87.3	3.1	22.4	2.4	None	
SBR73-2384	430.9-431.9	79446	1.4	.4	97.3	.9	3.6a	1.0	None	
SBR73-2385	431.9-432.9	79447	10.0	1.4	84.8	3.8	26.3	3.4	None	
SBR73-2386	432.9-434.4	79448	11.7	1.6	83.4	3.3	30.8	3.8	None	
SBR73-2387	434.4-435.4	79449	10.4	1.2	85.2	3.2	27.4	2.9	None	
SBR73-2388	435.4-435.9	79450	5.2	.7	92.4	1.7	13.6	1.7	None	
SBR73-2389	435.9-437.2	79451	1.4	.3	97.3	1.0	3.6a	.7	None	
SBR73-2390	437.2-438.2	79452	16.6	1.5	77.6	4.3	44.0	3.6	Slight	
SBR73-2391	438.2-439.3	79453	19.7	1.7	73.7	4.9	52.3	4.1	Slight	
SBR73-2392	439.3-440.3	79454	8.8	.8	87.5	2.9	23.1	1.9	None	
SBR73-2393	440.3-441.2	79455	2.0	.5	96.8	.7	5.3	1.2	None	
SBR73-2394	441.3-442.1	79456	7.1	.9	89.6	2.4	18.7	2.2	None	
SBR73-2395	442.1-443.0	79457	11.0	1.2	84.5	3.3	29.2	2.9	None	
SBR73-2396	443.0-444.8	79458	2.2	.8	95.7	1.3	5.8	1.9	None	
SBR73-2397	444.8-446.0	79459	6.0	1.0	91.0	2.0	15.6	2.4	None	
SBR73-2398	446.0-446.5	79460	.4	.7	98.6	.3	1.0a	1.7	None	Main tuff

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

2/ Oil yields of samples from 100 to 280 feet estimated by rapid test-tube method.

Drill cutting and core samples received June 9, 1972; Assays made on air-dried samples