

OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from USEM Rock Springs Well No. 4-1 drilled in NW1/4SE1/4NW1/4  
of sec 15, T 18 N, R 106 W, Sweetwater County, Wyoming

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 <sup>1/</sup>	Water			
OSGR-RS-4-1	34.3-35.3	13916	0.0	3.0	96.8	0.2	Trace	7.3		None	
	35.3-36.3	13917	.0	3.2	96.7	.1	No oil	7.6		None	
	36.3-36.8	13918	.0	3.0	97.0	.0	No oil	7.1		None	
	36.8-37.0	13919	1.2	3.3	95.0	.5	3.0a	7.9		None	
	37.0-38.0	13920	.4	2.3	96.9	.4	1.1a	5.5		None	
	38.0-39.0	13921	.0	1.5	98.2	.3	Trace	3.5		None	
	39.0-39.6	13922	.0	1.5	98.4	.1	Trace	3.6		None	
	39.6-40.6	13923	.1	2.1	97.6	.2	.2a	5.2		None	
	40.6-41.6	13924	.0	3.2	96.4	.4	No oil	7.5		None	
	41.6-42.4	13925	.5	2.9	95.4	1.2	1.3a	7.0		None	
	42.4-42.8	13926	.0	3.3	96.2	.5	No oil	8.0		None	
	42.8-43.9	13927	1.0	2.5	96.1	.4	2.5a	6.0		None	
	43.9-44.0	13928	1.0	1.2	96.1	1.7	2.5a	3.0		None	
	44.0-44.2	13929	6.0	3.6	88.9	1.5	15.7	8.6	0.919	None	
	44.2-45.2	13930	4.3	1.5	92.6	1.6	11.0	3.6	.923	None	
	45.2-46.2	13931	4.8	1.4	92.2	1.6	12.5	3.5	.913	None	
	46.2-47.1	13932	6.0	1.4	91.2	1.4	15.8	3.4	.909	None	
	47.1-47.2	13933	2.4	1.2	95.3	1.1	6.3a	2.8		None	
	47.2-47.6	13934	7.0	2.4	89.1	1.5	18.2	5.8	.921	None	
	47.6-48.6	13935	4.4	1.6	92.9	1.1	11.5	4.0	.913	None	
	48.6-49.6	13936	1.9	1.8	95.3	1.0	5.0a	4.3		None	
	49.6-50.6	13937	4.0	1.2	93.6	1.2	10.4	2.9	.924	None	
	50.6-51.6	13938	4.8	1.4	92.7	1.1	12.4	3.5	.919	None	
	51.6-52.6	13939	2.5	1.4	95.0	1.1	6.4	3.4	.925	None	
	52.6-53.6	13940	3.8	1.4	93.5	1.3	10.0	3.4	.921	None	
	53.6-54.6	13941	4.8	1.3	92.9	1.0	12.4	3.1	.921	None	
	54.6-55.6	13942	4.5	1.1	93.1	1.3	11.6	2.6	.925	None	
	55.6-56.6	13943	3.9	1.5	93.8	.8	10.1	3.6	.918	None	
	56.6-57.6	13944	2.9	1.3	94.8	1.0	7.5	3.1	.922	None	
	57.6-58.6	13945	3.8	1.2	93.7	1.3	9.9	2.9	.925	None	

See footnotes at end of table.

Core samples received January 1966; assays made on air-dried samples

## OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from USBM Rock Springs Well No. 4-1 (con.)

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	Gal per ton					
Laramie	Their	Oil	Water					Oil <sup>1/</sup>	Water		
OSCR-RS-4-1	58.6-59.2	13946	4.3	1.4	92.5	1.8	11.2	3.4	0.923	None	
	59.2-60.2	13947	5.6	2.2	90.7	1.5	14.7	5.3	.911	None	
	60.2-61.0	13948	6.7	2.2	89.3	1.8	17.6	5.3	.909	None	
	61.0-61.5	13949	6.6	1.6	90.0	1.8	17.4	3.8	.908	None	
	61.5-62.4	13950	3.2	1.5	94.0	1.3	8.3	3.6	.915	None	
	62.4-63.3	13951	2.4	.9	95.9	.8	6.4	2.2	.921	None	
	63.3-63.7	13952	1.5	1.0	96.9	.6	3.9a	2.3		None	
	63.7-64.6	13953	1.0	1.0	97.8	.2	2.6a	2.4		None	
	64.6-65.6	13954	.8	1.6	97.3	.3	2.2a	3.7		None	
	65.6-65.8	13955	1.0	1.4	97.5	.1	2.7a	3.2		None	
	65.8-66.0	13956	1.1	1.9	96.8	.2	2.7a	4.6		None	
	66.0-67.0	13957	1.1	1.5	96.7	.7	2.8a	3.6		None	
	67.0-67.3	13958	2.4	1.5	95.4	.7	6.4	3.6	.921	None	
	67.3-68.3	13959	11.4	1.8	84.4	2.4	29.7	4.3	.919	None	
	68.3-69.3	13960	12.4	2.2	82.3	3.1	32.2	5.3	.920	Slight	
	69.3-69.9	13961	6.0	1.8	90.1	2.1	15.9	4.3	.910	None	
	69.9-70.9	13962	5.3	1.3	91.3	2.1	13.8	3.2	.919	None	
	70.9-71.9	13963	2.7	1.7	94.3	1.3	7.0	4.0	.926	None	
	71.9-72.3	13964	2.8	1.5	94.4	1.3	7.2	3.6	.928	None	
	72.3-73.3	13965	1.0	1.3	97.0	.7	2.5a	3.2		None	
	73.3-74.3	13966	.7	1.2	97.2	.9	1.8a	2.9		None	
	74.3-75.0	13967	.9	1.4	97.0	.7	2.2a	3.4		None	
	75.0-75.3	13968	1.2	1.7	96.5	.6	3.1a	4.1		None	
	75.3-75.9	13969	.9	1.6	97.0	.5	2.4a	3.8		None	
	75.9-76.9	13970	4.5	1.9	92.0	1.6	11.6	4.6	.922	None	
	76.9-77.2	13971	6.3	1.5	90.8	1.4	16.5	3.6	.917	None	
	77.2-77.9	13972	4.5	1.4	92.8	1.3	11.8	3.4	.921	None	
	77.9-78.9	13973	6.8	2.0	89.2	2.0	17.8	4.8	.919	None	
	78.9-79.9	13974	7.4	1.7	89.1	1.8	19.3	4.1	.921	None	
	79.9-80.6	13975	8.1	1.7	88.3	1.9	21.2	4.1	.919	None	

See footnotes at end of table.

Core samples received January 1966; assays made on air-dried samples

## OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from USBM Rock Springs Well No. 4-1 (con.)

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 <sup>1/</sup>	Water
OSCR-RS-4-1	80.6- 81.0	13976	6.4	2.0	89.9	1.7	16.7	4.8	0.923	None
	81.0- 81.5	13977	1.8	1.9	95.5	.8	4.8a	4.6		None
	81.5- 82.5	13978	.4	2.0	96.7	.9	1.0a	4.8		None
	82.5- 83.3	13979	.5	1.8	97.4	.3	1.3a	4.3		None
	83.3- 84.1	13980	.4	1.1	98.1	.4	1.0a	2.6		None
	84.1- 84.8	13981	.4	2.1	97.2	.3	.9a	5.0		None
	84.8- 85.8	13982	.1	2.8	96.4	.7	.1a	6.7		None
	85.8- 86.8	13983	.2	3.0	96.5	.3	.5a	7.2		None
	86.8- 87.3	13984	.3	2.9	96.7	.1	.7a	7.0		None
	87.3- 88.3	13985	.5	2.5	96.7	.3	1.3a	6.0		None
	88.3- 89.3	13986	.4	1.3	98.1	.2	1.2a	3.1		None
	89.3- 89.7	13987	1.8	2.1	95.4	.7	4.6a	5.0		None
	89.7- 90.3	13988	5.5	2.2	90.7	1.6	14.4	5.3	.924	None
	90.3- 90.6	13989	7.5	2.2	88.6	1.7	19.3	5.3	.926	None
	90.6- 91.6	13990	7.7	2.6	87.5	2.2	19.9	6.2	.923	None
	91.6- 92.6	13991	8.9	2.3	86.9	1.9	23.2	5.5	.918	None
	92.6- 93.5	13992	5.3	2.4	91.0	1.3	13.7	5.8	.925	None
	93.5- 94.5	13993	.5	1.0	98.2	.3	1.4a	2.4		None
	94.5- 95.0	13994	.1	1.5	98.1	.3	.3a	3.5		None
	95.0- 95.5	13997	.1	1.5	97.2	1.2	.3a	3.6		None
	95.5- 96.5	13998	.0	1.7	97.6	.7	Trace	4.1		None
	96.5- 96.9	13999	.1	1.7	97.5	.7	.2a	4.1		None
	96.9- 97.9	14000	.2	1.1	96.8	1.9	.4a	2.6		None
	94.9- 98.5	14001	.7	1.2	97.1	1.0	1.7a	2.9		None
	98.5- 98.8	14002	1.0	1.7	95.9	1.4	2.6a	4.1		None
	98.8- 99.6	14003	2.2	1.8	94.6	1.4	5.6	4.3	.919	None
	99.6- 99.8	14004	8.1	2.1	87.4	2.4	21.0	5.0	.922	None
	99.8-100.1	14005	6.7	2.0	89.0	2.3	17.6	4.8	.915	None
	100.1-101.0	14006	6.6	2.6	88.8	2.0	17.3	6.2	.909	None
	101.0-101.2	14007	9.3	2.0	86.8	1.9	24.3	4.8	.915	None

See footnotes at end of table.

Core samples received January 1966; assays made on air-dried samples

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Samples from USBM Rock Springs Well No. 4-1 (con.)

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 <sup>1/</sup>	Water			
OSCR-RS-4-1	101.2-102.2	14008	12.3	2.4	82.9	2.4	31.8	5.8	0.928	None	
	102.2-103.0	14009	13.0	2.2	82.1	2.7	33.4	5.3	.931	None	
	103.0-103.3	14010	9.5	2.3	86.0	2.2	24.5	5.5	.924	None	
	103.3-103.9	14011	10.8	2.1	84.9	2.2	27.9	5.0	.930	None	
	103.9-104.5	14012	13.5	2.4	79.4	4.7	34.8	5.9	.930	None	
	104.5-105.5	14013	11.0	2.2	84.9	1.9	28.9	5.3	.915	None	
	105.5-105.7	14014	13.4	2.2	82.2	2.2	35.0	5.3	.920	None	
	105.7-106.1	14015	7.8	2.7	87.3	2.2	20.4	6.5	.917	None	
	106.1-107.1	14016	7.6	1.7	88.7	2.0	19.7	4.1	.922	None	
	107.1-108.1	14017	6.5	2.2	89.7	1.6	17.1	5.3	.919	None	
	108.1-108.5	14018	7.6	1.5	88.9	2.0	20.0	3.6	.917	None	
	108.5-109.6	14023	4.1	1.2	93.2	1.5	10.8	2.9	.901	None	
	109.6-110.6	14024	6.5	1.2	89.5	2.8	16.8a	2.9		None	
	110.6-111.6	14025	6.2	1.4	90.9	1.5	16.4	3.4	.903	None	
	111.6-112.6	14026	4.5	2.4	91.6	1.5	11.9	5.8	.905	None	
	112.6-113.6	14027	7.3	2.6	88.5	1.6	19.3	6.2	.911	None	
	113.6-114.6	14028	8.3	2.6	86.9	2.2	21.4	6.2	.925	None	
	114.6-114.9	14029	7.3	3.0	87.5	2.2	18.8	7.2	.928	None	
	114.9-115.6	14030	6.3	2.9	89.1	1.7	16.2	7.0	.929	None	
	115.6-116.6	14031	7.8	2.8	86.5	2.9	20.1	6.7	.932	None	
	116.6-117.6	14032	5.1	2.5	89.6	2.8	12.8	6.0	.946	None	
	117.7-118.7	14033	5.4	2.4	89.1	3.1	13.6	5.8	.946	None	
	118.7-119.0	14034	.7	5.8	89.5	4.0	1.9a	13.9		None	
	119.0-119.3	14035	6.9	2.1	88.3	2.7	17.6	5.0	.943	None	
	119.3-120.3	14036	9.6	2.2	81.1	7.1	24.8	5.3	.925	None	
	120.3-120.6	14037	10.1	2.3	83.9	3.7	26.1	5.5	.930	None	
	120.6-121.6	14038	8.4	1.8	86.2	3.6	21.6	4.3	.937	None	
	121.6-122.0	14039	11.3	2.5	82.6	3.6	29.1	6.0	.927	None	
	122.0-123.0	14040	7.6	2.6	87.8	2.0	19.3	6.4	.945	None	
	123.0-124.0	14041	7.6	2.8	87.1	2.5	19.2	6.7	.952	None	

See footnotes at end of table.

Core samples received January 1966; assays made on air-dried samples

## OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from USBM Rock Springs Well No. 4-1 (con.)

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	Water	coke	
OSCR-RS-4-1	124.0-125.0	14042	6.0	3.0	89.4	1.6	15.0	7.2	0.954	None
	125.0-126.0	14043	8.2	2.8	86.1	2.9	21.1	6.7	.933	None
	126.0-126.2	14044	3.1	4.7	90.8	1.4	7.8	11.2	.941	None
	126.2-126.8	14045	12.3	1.9	82.5	3.3	32.1	4.6	.918	None

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

Core samples received January 1966; assays made on air-dried samples

Laramie Petroleum Research Center, Laramie, Wyoming, Illustration No. SBR-4336P Sheet No. 5 of 5 sheets June 23, 1966