

LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY <sup>1</sup>

Corehole 41-12-P (2-1/4" core), samples from bottom section (656.0 to 740.0 feet), General Petroleum Corporation, drilled S. 7° 48' W. 322.0 feet from N. 1/4 corner of sec. 12, T. 5 S., R. 100 W., Garfield County, Colorado

Surface Elevation 8,587.56 feet

Mahogany Marker 578 feet

From	To	Description
656.0	657.9	Marlstone, light gray. Core very badly broken.
657.9	659.5	Marlstone, dirty-white and buff, well-defined bedding.
659.5	664.3	Marlstone, light gray to buff, well-defined bedding, with common bands 1/8" or less of fine-grained pyrite, numerous scattered grains 1/16" or less of pyrite.
664.3	665.8	Marlstone, dark brown and dark gray, well-defined bedding, few concretions 1/4" or less of analcite.
665.8	667.5	Marlstone, banded, tan, brown, and dark brown, well-defined bedding, with numerous grains 1/64" or less of pyrite.
667.5	673.7	Marlstone, as last above, with bands 1" to 1-1/2" of light gray, fine-grained analcite tuff occurring at 670.2, 670.7, and 672.2 feet.
673.7	677.5	Marlstone, banded, buff and brown, uniform, well-defined bedding. A 2" band of dark gray, fine-grained analcite tuff occurs at 674.9 feet. A 1/2" band of light gray, fine-grained analcite tuff occurs at 676.0 feet.
677.5	679.8	Marlstone, as last above. A 1/2" band of dark gray, analcite tuff occurs at 678.0 feet.
679.8	680.5	Marlstone, dark brown and black. A 1" band of dark gray, analcite tuff occurs at 680.3 feet.
680.5	681.4	Marlstone, banded, brown and dark brown, well-defined bedding, with numerous grains 1/32" or less of pyrite.
681.4	683.0	Marlstone, as last above.
683.0	685.0	Marlstone, banded, dirty-white, tan, and light brown, well-defined bedding.
685.0	685.3	Marlstone, banded, gray and brown, well-defined bedding.
685.3	685.7	Tuff, gray, fine-grained.
685.7	686.2	Marlstone, banded, gray and brown, well-defined bedding.
686.2	689.0	Marlstone, banded, dirty-white, light brown, and brown, with numerous thin stringers of pyrite.
689.0	689.4	Marlstone, banded, brown and dark brown.

*L. B. H. N. Smith*

Illustration No. SBR-2451P

Petroleum and Oil-Shale Experiment Station, Laramie, Wyoming July 29, 1958

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Surface Elevation 8,587.56 feet

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From	To	Description
689.4	690.2	Analcite tuff, dirty-white and buff, very contorted, with thin contorted stringers of tan and black marlstone.
690.2	693.0	Marlstone, brown, dark gray, and black, well-defined bedding.
693.0	696.6	Marlstone, banded, dirty-white, buff, and tan, rare bands 1/16" or less of pyrite.
696.6	700.0	Marlstone, dark brown and black, massive to well-defined bedding. A 3" zone of alternating thin layers of light gray tuff and brown marlstone occurs at 698.2 feet.
700.0	702.8	Marlstone, banded, dirty-white, tan, and brown, with occasional 1" bands of black, well-defined bedding.
702.8	703.5	Marlstone, alternating bands 1/8" or less of black and dirty-white.
703.5	707.5	Marlstone, gray to brown well-defined bedding.
707.5	710.4	Marlstone, gray, dark gray, and black, well-defined bedding.
710.4	718.7	Marlstone, buff, light gray, and purplish-gray, lightly contorted bedding, with numerous thin stringers of gray analcite tuff and pyrite.
718.7	721.0	Marlstone, dark brown and black, massive to well-defined bedding.
721.0	722.1	Marlstone, banded, tan and dark brown, well-defined bedding.
722.1	725.0	Marlstone, dark brown and black, well-defined bedding. A 2" band of dark brown, medium-grained analcite tuff which is impregnated with bitumen occurs at 723.7 feet. A 1/2" band of light gray analcite tuff occurs at 724.8 feet.
725.0	729.2	Marlstone, buff and tan, massive to well-defined bedding.
729.2	730.6	Marlstone, light gray, tan, and light brown, well-defined bedding.
730.6	731.0	Marlstone, dark brown and black, well-defined bedding.
731.0	732.6	Core missing.

Illustration No. SBR-2452P

Petroleum and Oil-Shale Experiment Station, Laramie, Wyoming July 29, 1958

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Surface Elevation 8,587.56 feet Mahogany Marker 578 feet

From	To	Description
732.6	735.6	Marlstone, dark brown, dark gray, and black, well-defined bedding.
735.6	739.0	Marlstone, buff, tan, and light brown, massive to well-defined bedding, numerous thin stringers of pyrite.
739.0	740.0	Marlstone, dark brown and dark gray, well-defined bedding.
740.0		End of box No. 17.

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Illustration No. SBR-2453P

Petroleum and Oil-Shale Experiment Station, Laramie, Wyoming July 29, 1958

LITHOLOGIC DESCRIPTION OF  
GENERAL PETROLEUM CORPORATION'S OIL SHALE COREHOLE 41-12  
Drilled on the Savage "Brush Creek" Property  
Garfield County, Colorado

Location: 319.02 ft S. and 43.70 ft W. of the N $\frac{1}{4}$  Corner, or  
S. 7° 48' W. 322.0 ft from N $\frac{1}{4}$  Corner of  
Section 12, T 5 S, R 100 W, Garfield County, Colorado

Drilled: August, 1957

Elevation (surface) 8,587.56 ft  
MM @ 578 ft TD 740 ft

<u>From</u>	<u>To</u>	<u>Rec Ft</u>	
575.0	578.0	3.0	Marlstone, light brown to brown, laminated, contains several thin lenticular analcite stringers and 0.15 ft thick analcite bed at base.
578.0	579.0	1.0	Marlstone, dark brown, finely laminated, contains prominent 0.25 ft thick analcite bed (mahogany marker ) near middle.
579.0	581.0	2.0	Marlstone, brown to dark brown, laminated.
581.0	582.0	1.0	Blue bed, dark brown to black, laminated, fair to good values.
582.0	588.0	6.0	Marlstone, light grayish brown to brown, laminations are thicker and poorly defined.
588.0	589.0	1.0	Marlstone, as above, however, interbedded with numerous analcite beds (approximately 40%).
589.0	592.0	3.0	Marlstone, light grayish brown to light brown, somewhat laminated.
592.0	593.0	1.0	Blue bed, dark brown to black, fair to good values.
593.0	596.0	3.0	Marlstone, light brown to brown, laminated.
596.0	604.0	8.0	Blue bed, dark brown to black with occasional leaner streaks, generally good value throughout.
604.0	607.0	3.0	Marlstone, light brown to brown, laminated.
607.0	611.0	4.0	Blue bed with interbeds of leaner brown marlstone, laminated, variable values throughout, but overall value good.
611.0	615.0	4.0	Marlstone, light brown to brown, contains occasional thin blue beds, overall value poor to fair.
615.0	622.0	7.0	Marlstone, brown to dark brown, contains occasional light brown streaks, overall value fair.
622.0	625.0	3.0	Marlstone, light brown to brown, highly laminated.

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GENERAL PETROLEUM CORPORATION'S OIL SHALE COREHOLE 41-12

<u>From</u>	<u>To</u>	<u>Rec Ft</u>	
625.0	629.0	4.0	Marlstone, very light brown to occasional brown, somewhat laminated, overall value very poor.
629.0	630.0	1.0	Marlstone, grayish brown to brown, very distinct laminations, contains 0.15 ft thick analcite near base.
630.0	632.0	2.0	Marlstone, light brown to brown, laminated.
632.0	633.0	1.0	Blue bed, dark brown, locally altered giving cork-like appearance.
633.0	635.0	2.0	Marlstone, light brown to brown, laminated, overall coloring is light.
635.0	637.0	2.0	Marlstone, as last above, whitish cast locally, laminations less distinct.
637.0	638.0	1.0	Marlstone, brown, laminated, grades into low-grade blue bed in bottom portion which also contains a prominent 0.55 ft thick analcite bed.
638.0	639.0	1.0	Blue bed, dark brown to black, good value.
639.0	650.0	11.0	Marlstone, tan, light brown, to occasional brown, variable color bands with laminations.
650.0	665.0	15.0	Marlstone, tan to light gray, somewhat laminated to massive, contains occasional analcite partings, core badly broken up locally.
665.0	666.0	1.0	Blue bed, dark brown to black, some laminae show satiny luster, good value.
666.0	672.5	6.5	Marlstone, light gray to light brown, laminated, contains three analcite partings less than 0.1 ft thick in bottom half.
672.5	685.5	13.0	Marlstone, light gray to light brown, as last above, overall color is lighter except for rare dark streaks, contains 0.15 ft thick analcite partings at 675 ft and 680 ft.
685.5	686.0	0.5	Sandstone, tuffaceous, gray, fine to medium-grained, actually 0.35 ft thick, possibly good marker bed.
686.0	689.5	3.5	Marlstone, light gray to light brown, laminated, poor value throughout.

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<u>From</u>	<u>To</u>	<u>Rec Ft</u>	
689.5	690.0	0.5	Sandstone, tuffaceous, buff, contains rare marlstone streaks, mottled, actually 0.7 ft thick, (lower wavy bed?).
690.0	697.0	7.0	Marlstone, light gray to light brown, laminated, overall value very poor.
697.0	700.0	3.0	Marlstone, light brown to brown, laminated, contains several thin analcite beds.
700.0	710.0	10.0	Marlstone, light gray to light brown, laminated, contains occasional dark interbeds especially in lower one-third.
710.0	719.0	9.0	Marlstone, light gray, laminated, contains occasional dark bluish gray laminae.
719.0	725.0	6.0	Marlstone, light gray to light brown, laminated, locally wider color bands, contains several thin irregular analcite stringers in darker portions.
725.0	730.5	5.5	Marlstone, white to light gray, somewhat laminated to massive.
730.5	735.0	4.5	Recovery 3.0 ft. Marlstone, gray, irregular laminations and color bands, locally mottled.
735.0	739.0	4.0	Marlstone, white to light gray, laminated, rare dark bluish gray laminae, very poor value.
739.0	740.0	1.0	Marlstone, light gray to gray, laminated, poor value.

Described by:

*J. H. Brown, Jr.*  
J. H. Brown, Jr.