

## LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from H. M. Byllesby and Company, Inc., Windy corehole  
drilled 1286.8 feet S. 7° 28' E. of W. 1/4 corner of sec. 24,  
T. 12 S., R. 20 E., Uintah County, Utah

Surface elevation 5503 feet

| From | To   | Description   |
|------|------|---|
| 0    | 10   | Drilled through alluvium.   |
| 10   | 16.7 | Oil shale, light brown, dark brown, and dark gray, poorly defined to well defined bedding. Rare 1/4-inch bands of pyrite. Rare 1/2-inch and less bands of bluish gray and dark brown bitumen impregnated analcite. Vertical fracture occurs between 11.2 feet and 12.4 feet.  |
| 16.7 | 25.0 | Marlstone, tan, light gray, and greenish gray, massive to poorly defined bedding. A 0.7-foot vertical fracture with fracture faces lightly coated with reddish brown bitumen occurs at 23.2 feet.   |
| 25.0 | 25.5 | Siltstone, light gray, calcareous, poorly defined bedding. Vertically fractured.  |
| 25.5 | 29.5 | Limestone, tan, and light brown, massive. Interbedded with marlstone, light brown and greenish gray. Rare 2-inch and less vertical fractures with fracture faces lightly coated with black bitumen.   |
| 29.5 | 37.6 | Marlstone, light gray, light brown, and greenish brown, massive to well defined bedding. Common 2-inch and less bands of light gray and tan limestone. Rare vertical fracture with fracture faces lightly coated with dark brown and black bitumen.   |
| 37.6 | 40.5 | Marlstone, tan and light brown, massive to poorly defined bedding. Contains some low-grade oil shale.   |
| 40.5 | 50.5 | Oil shale, light brown and greenish brown, massive to well defined bedding. Low grade. Breaks with hackly fracture. Two-inch bands of light gray dolomite and analcite occur at 43.9 feet and at 48.9 feet. A 0.4-foot band of dark brown bitumen impregnated analcite occurs at 45.4 feet.   |
| 50.5 | 61.4 | Oil shale, light brown, greenish brown, and reddish brown, poorly defined to well defined bedding. Low to medium grade. Breaks with hackly fracture. Bands 0.3 foot of dark brown bitumen impregnated analcite containing fractures coated with black bitumen occur at 52.0 feet and at 58.0 feet. A 0.1-foot band of same occurs at 57.4 feet. |

Illustration No. SBR-2792F

# LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from H. M. Byllesby and Company, Inc., Windy corehole drilled 1286.8 feet S. 7° 28' E. of W. 1/4 corner of sec. 24, T. 12 S., R. 20 E., Uintah County, Utah (Con.)

Surface elevation 5503 feet

| From  | To    | Description  |
|-------|-------|--|
| 61.4  | 63.0  | Oil shale, light brown and greenish brown, poorly defined bedding. Low grade. A 0.8-foot vertical fracture heavily coated with dark brown sticky bitumen occurs at 61.4 feet.  |
| 63.0  | 71.5  | Marlstone, light gray, greenish gray, and greenish brown, massive to well defined bedding. Contains some low-grade oil shale.  |
| 71.5  | 78.4  | Oil shale, light brown, dark brown, and greenish brown, well defined bedding. Low to medium grade. Breaks with hackly fracture.  |
| 78.4  | 80.2  | Siltstone, light brown and dark brown, calcareous, massive. Becomes sandy in lower part. Extensive vertical fracture with fracture faces heavily coated with black sticky bitumen. Dark brown color due to siltstone being slightly bitumen impregnated. |
| 80.2  | 81.9  | Oil shale, light brown and reddish brown, well defined bedding.  |
| 81.9  | 95.0  | Marlstone, light gray and greenish gray, well defined bedding. Contains some light brown and dark brown oil shales.  |
| 95.0  | 106.8 | Oil shale, light brown, greenish brown, and dark gray, well defined bedding. Low to medium grade.  |
| 106.8 | 109.8 | Marlstone, light brown and blue gray, well defined bedding. Multiple vertical fracture in lower part.  |
| 109.8 | 114.1 | Marlstone, light gray, light brown, and greenish brown, well defined bedding. Common 1/2-inch and less stringers of light gray dolomite.   |
| 114.1 | 114.7 | Siltstone, tan, massive, calcareous.   |
| 114.7 | 117.0 | Oil shale, light brown, massive to well defined bedding. Low grade.  |
| 117.0 | 123.7 | Marlstone, silty in lower part, light gray, light brown, and greenish brown, massive to well defined bedding.  |
| 123.7 | 137.4 | Marlstone, bluish-gray and brownish gray, massive to well defined bedding. Vertical fracture with fracture faces heavily coated with reddish brown and black bitumen occurs between 130.0 feet and 131.6 feet.   |

Illustration No. SBR-2793P

# LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from H. M. Byllesby and Company, Inc., Windy corehole drilled 1286.8 feet S. 7° 28' E. of W. 1/4 corner of sec. 24, T. 12 S., R. 20 E., Uintah County, Utah (Con.)

Surface elevation 5503 feet

| From                       | To    | Description   |
|----------------------------|-------|---|
| 137.4                      | 141.1 | Oil shale, light brown, dark brown, and greenish brown, massive to well defined bedding. Low to medium grade.   |
| 141.1                      | 141.6 | Oil shale, light brown, dark brown and dark gray, well defined bedding. Medium to good grade.   |
| 141.6                      | 144.0 | Oil shale, light brown, dark brown, and greenish brown, well defined bedding. A 0.1-foot bluish gray band containing analcite, calcite, and pyrite occurs at 142.7 feet.  |
| 144.0                      | 145.4 | Oil shale, light gray, light brown, and dark brown, well defined bedding. Low grade.  |
| 145.4                      | 148.0 | Oil shale, light brown, dark brown, and dark gray, well defined bedding. Common bands 0.2-foot and less of dark brown and bluish gray analcite.   |
| 148.0                      | 150.0 | Oil shale, light brown, dark brown, and dark gray, well defined bedding. Common 1-inch and less bands of dark brown analcite. Good grade.   |
| 150.0                      | 155.5 | Marlstone, bluish gray and brownish gray, well defined bedding. Scattered flakes of pyrite. Contains some low grade oil shale.  |
| 155.5                      | 157.1 | Oil shale, light brown and dark brown, massive to well defined bedding.   |
| 157.1                      | 170.8 | Marlstone, light gray, bluish gray and brownish gray, massive to well defined bedding. Contains some low grade oil shale in lower part. A 0.4-foot band of light brown and dark brown analcite containing some calcite and pyrite occurs at 162.4 feet. |
| 170.8                      | 171.8 | Oil shale, light brown and dark brown, well defined bedding.  |
| 171.8                      | 172.8 | Oil shale, dark brown and dark gray, poorly defined to well defined bedding. Rich.  |
| 172.8                      | 177.0 | Oil shale, light brown, dark brown, and greenish brown, massive to well defined bedding. Low to medium grade.   |
| 177.0                      | 183.0 | Oil shale, light brown, dark brown, and dark gray, massive to well defined bedding. Good grade. A horizontal fracture 1/2 inch in length containing clear crystals of searlesite occurs at 180.9 feet.  |
| Illustration No. SBR-2794P |       |   |

# LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from H. M. Byllesby and Company, Inc., Windy corehole drilled 1286.8 feet S. 7° 28' E. of W. 1/4 corner of sec. 24, T. 12 S., R. 20 E., Uintah County, Utah (Con.)

Surface elevation 5503 feet

| From  | To    | Description  |
|-------|-------|--|
| 183.0 | 184.0 | Oil shale, dark gray to black, generally massive with some well defined bedding. Rich.   |
| 184.0 | 186.4 | Oil shale, light brown, dark brown, and dark gray, well defined bedding. Good grade. A 0.2-foot band of light brown analcite occurs at 184.0 feet.           |
| 186.4 | 187.4 | Oil shale, dark brown and dark gray, massive to well defined bedding. Rich.  |
| 187.4 | 191.0 | Oil shale, light brown and dark brown, well defined bedding.   |
| 191.0 | 192.7 | Oil shale, dark brown and dark gray, massive to well defined bedding. Good grade to rich.  |
| 192.7 | 195.5 | Oil shale, light brown and brownish gray, poorly defined bedding. Common thin stringers of pyrite.   |
| 195.5 | 196.1 | Oil shale, light brown, dark brown, and dark gray, well defined bedding. Rich.   |
| 196.1 | 198.8 | Oil shale, light gray, light brown, and dark brown, well defined bedding. Low to medium grade.   |
| 198.8 | 201.1 | Oil shale, light brown, dark brown, and dark gray, massive to well defined bedding. Good grade. A 1-inch band of bluish gray limestone occurs at 200.6 feet. |
| 201.1 | 203.0 | Oil shale, light brown and greenish brown, well defined bedding. Low grade.  |
| 203.0 | 206.9 | Oil shale, tan, light brown, and dark brown, well defined bedding. Contains some light gray barren marlstone in upper part.                                  |
| 206.9 | 213.3 | Oil shale, light brown and dark brown, well defined bedding. Medium to good grade.   |
| 213.3 | 219.6 | Oil shale, light brown, dark brown, and greenish brown, well defined bedding. Contains some light gray barren marlstone.                                     |
| 219.6 | 220.4 | Oil shale, dark brown and dark gray, well defined bedding. Rich.   |
| 220.4 | 221.7 | Oil shale, light brown and greenish brown, well defined bedding. A 0.3-foot vertical fracture with bitumen stained fracture faces occurs at 221.4 feet.      |
| 221.7 | 227.2 | Marlstone, silty, tan, and light gray, massive to well defined bedding. A 0.3-foot band of greenish brown oil shale occurs at 222.7 feet.                    |

Illustration No. SBR-2795P

# LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from H. M. Byllesby and Company, Inc., Windy corehole drilled 1286.8 feet S. 7° 28' E. of W. 1/4 corner of sec. 24, T. 12 S., R. 20 E., Uintah County, Utah (Con.)

Surface elevation 5503 feet

| From  | To    | Description  |
|-------|-------|--|
| 227.2 | 229.3 | Oil shale, tan and light brown, massive to well defined bedding. Mostly low grade. A 0.3-foot band of dark gray, good grade oil shale occurs at 228.3 feet.  |
| 229.3 | 233.0 | Marlstone, silty, bluish gray, massive to poorly defined bedding. A 0.3-foot band of light brown siltstone containing analcite and pyrite occurs at 231.7 feet.  |
| 233.0 | 233.9 | Oil shale, light brown and greenish brown, well defined bedding. Low grade.  |
| 233.9 | 235.0 | Oil shale, dark brown and dark gray, well defined bedding. Good grade.   |
| 235.0 | 239.5 | Marlstone and low grade oil shales, light brown, greenish brown, and bluish gray, well defined bedding.  |
| 239.5 | 240.1 | Oil shale, dark brown and dark gray, well defined bedding. Good grade.   |
| 240.1 | 240.7 | Marlstone, tan and blue gray, well defined bedding.  |
| 240.7 | 241.5 | Analcite, tan and bluish gray, massive. Common contorted stringers of dark brown marlstone in upper part. (Possible lower wavy bed.)   |
| 241.5 | 242.6 | Marlstone, light gray and light brown, poorly defined to well defined bedding. Contains some low-grade oil shale.  |
| 242.6 | 247.2 | Oil shale, light brown, dark brown, and dark gray, massive to well defined bedding. Interbedded with siltstone, tan and light gray. Siltstone contains crystals of analcite and stringers of dark brown oil shale. Dark gray stringers of oil shale appear to have been intruded by light brown massive oil shale between 243.2 feet and 243.7 feet. |
| 247.2 | 248.4 | Sandstone, very fine grained, silty, light brown, slightly cross-bedded, bitumen impregnated. Vertical fracture with faces lightly coated with yellowish brown bitumen occurs between 247.2 feet and 247.9 feet.   |
| 248.4 | 250.1 | Marlstone, tan and light gray, massive to well defined bedding. Contains some low-grade oil shale.   |

Illustration No. SBR-2796P

Laramie Petroleum Research Center, Laramie, Wyoming August 7, 1959

# LITHOLOGIC DESCRIPTION OF SAMPLES SUBMITTED FOR ASSAY

Core samples from H. M. Byllesby and Company, Inc., Windy corehole drilled 1286.8 feet S. 7° 28' E. of W. 1/4 corner of sec. 24, T. 12 S., R. 20 E., Uintah County, Utah (Con.)

Surface elevation 5503 feet

| From  | To    | Description   |
|-------|-------|---|
| 250.1 | 265.2 | Siltstone, light gray, greenish gray, and dark gray, massive. Calcareous in part. Contains rare stringers of oil shale. Beds 0.7 foot and less of very fine grained silty, cross-bedded, bitumen impregnated sandstone occurs in lower part. Rare vertical fracture with fracture faces lightly coated with black sticky bitumen. |
| 265.2 |       | Bottom of core.   |

X-ray identifications made on core

180.9 Searlesite.

Illustration No. SBR-2797P

Laramie Petroleum Research Center, Laramie, Wyoming August 7, 1959