

OIL SHALE ASSAY REPORT

PAGE 1 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1	1817.0 - 1818.0	10.6	.7	4.1	.3	94.9	.7	.919	N
2	1818.0 - 1819.0	10.6	.5	4.1	.2	95.0	.7	.924	N
3	1819.0 - 1820.0	11.2	.7	4.3	.3	94.4	1.0	.926	N
4	1820.0 - 1821.0	8.6	.5	3.3	.2	95.8	.7	.923	N
5	1821.0 - 1822.0	6.8	.7	2.6	.3	96.6	.5	.923	N
6	1822.0 - 1823.0	6.9	.7	2.7	.3	96.5	.6	.915	N
7	1823.0 - 1824.0	6.3	.7	2.5	.3	96.4	.9	.926	N
8	1824.0 - 1825.0	7.3	.7	2.8	.3	96.1	.8	.920	N
9	1825.0 - 1826.0	8.7	.7	3.3	.3	95.8	.6	.920	N
10	1826.0 - 1827.0	8.9	.7	3.4	.3	95.7	.6	.918	N
11	1827.0 - 1828.0	7.9	.7	3.1	.3	96.0	.6	.924	N
12	1828.0 - 1829.0	12.7	1.0	4.9	.4	93.7	1.0	.919	N
13	1829.0 - 1830.2	16.7	.7	6.4	.3	92.1	1.2	.920	N
	1830.2 - 1831.0	> 10.0		CORE LOSS - 0.8'					
14	1831.0 - 1832.0	7.7	.7	3.0	.3	95.8	.9	.925	N
15	1832.0 - 1833.0	7.7	.7	2.9	.3	96.1	.7	.909	N
16	1833.0 - 1834.0	8.6	.5	3.3	.2	95.7	.9	.911	N
17	1834.0 - 1835.0	7.5	.7	2.9	.3	96.1	.8	.915	N
18	1835.0 - 1836.0	7.5	.7	2.9	.3	96.2	.6	.913	N
19	1836.0 - 1837.0	8.9	.5	3.5	.2	95.5	.8	.930	N
20	1837.0 - 1838.1	9.1	.5	3.5	.2	95.6	.7	.923	N
	1838.1 - 1839.0	> 1.5		CORE LOSS - 0.9'					
21	1839.0 - 1840.0	9.7	.5	3.7	.2	95.0	1.1	.927	N
22	1840.0 - 1841.0	11.1	.6	4.3	.3	94.6	.9	.926	N
23	1841.0 - 1842.0	9.8	.7	3.8	.3	95.1	.8	.924	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 2 of 23

R.H. GODDE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
24	1842.0 - 1843.0	10.8	.7	4.2	.3	94.6	1.0	.922	N
25	1843.0 - 1844.0	10.1	.7	3.9	.3	95.0	.8	.926	N
26	1844.0 - 1845.0	9.2	.5	3.5	.2	95.3	1.0	.920	N
27	1845.0 - 1846.0	11.0	.7	4.2	.3	94.5	1.0	.922	N
28	1846.0 - 1847.0	10.7	.7	4.1	.3	94.9	.7	.924	N
29	1847.0 - 1847.9	8.6	.5	3.3	.2	95.8	.7	.919	N
	1847.9 - 1850.0	> 8.0		CORE LOSS - 2.1'					
30	1850.0 - 1851.0	7.9	.5	3.0	.2	96.0	.8	.918	N
31	1851.0 - 1852.0	9.8	.5	3.8	.2	95.3	.7	.932	N
32	1852.0 - 1853.0	8.8	.5	3.4	.2	95.6	.8	.924	N
33	1853.0 - 1854.0	9.1	.5	3.5	.2	95.5	.8	.926	N
	1854.0 - 1868.5	> 10.0		CORE LOSS - 14.5'					
34	1868.5 - 1869.0	24.0	.7	9.2	.3	88.7	1.8	.919	N
35	1869.0 - 1870.0	10.1	.2	3.9	.1	95.0	1.0	.919	N
36	1870.0 - 1871.0	8.1	.5	3.1	.2	95.8	.9	.922	N
37	1871.0 - 1872.0	7.4	.5	2.9	.2	96.1	.8	.928	N
38	1872.0 - 1873.0	7.1	.5	2.7	.2	96.2	.9	.918	N
39	1873.0 - 1874.0	7.6	.7	2.9	.3	95.8	1.0	.915	N
40	1874.0 - 1875.0	7.3	.7	2.8	.3	96.2	.7	.922	N
41	1875.0 - 1876.0	6.9	.7	2.7	.3	96.0	1.1	.919	N
42	1876.0 - 1877.0	8.7	1.0	3.4	.4	95.1	1.2	.922	N
43	1877.0 - 1878.0	9.8	1.0	3.8	.4	94.6	1.2	.930	N
44	1878.0 - 1879.0	10.6	1.4	4.1	.6	94.2	1.1	.929	N
45	1879.0 - 1880.0	9.5	.8	3.7	.4	94.8	1.2	.930	N
46	1880.0 - 1881.0	8.6	.6	3.3	.3	95.3	1.1	.936	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 3 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
47	1881.0 - 1882.0	6.8	.7	2.6	.3	96.6	.5	.915	N
48	1882.0 - 1883.0	7.0	.7	2.7	.3	96.5	.5	.913	N
49	1883.0 - 1884.0	7.0	.7	2.7	.3	96.2	.8	.919	N
50	1884.0 - 1885.0	7.0	.2	2.7	.1	96.4	.8	.923	N
51	1885.0 - 1886.0	6.8	.7	2.6	.3	96.5	.6	.921	N
52	1886.0 - 1887.0	6.7	.2	2.6	.1	96.8	.5	.925	N
53	1887.0 - 1888.0	6.4	.5	2.4	.2	96.5	.9	.919	N
54	1888.0 - 1889.0	7.1	.5	2.7	.2	96.3	.8	.917	N
55	1889.0 - 1890.0	6.0	.7	2.3	.3	96.1	1.3	.927	N
56	1890.0 - 1891.0	6.3	.7	2.4	.3	96.5	.8	.916	N
57	1891.0 - 1892.0	6.6	.5	2.5	.2	96.5	.8	.917	N
58	1892.0 - 1893.0	6.6	.7	2.5	.3	96.5	.7	.916	N
59	1893.0 - 1894.0	6.5	.7	2.5	.3	96.4	.8	.923	N
60	1894.0 - 1895.0	6.6	1.0	2.5	.4	96.4	.7	.913	N
61	1895.0 - 1896.0	7.0	.7	2.7	.3	96.3	.7	.919	N
62	1896.0 - 1897.0	6.7	.7	2.6	.3	96.3	.8	.925	N
63	1897.0 - 1898.0	6.7	1.0	2.6	.4	95.8	1.2	.921	N
64	1898.0 - 1899.0	6.9	1.0	2.7	.4	95.6	1.3	.925	N
65	1899.0 - 1900.0	11.4	1.3	4.4	.6	93.4	1.6	.928	N
66	1900.0 - 1901.2	22.3	1.1	8.6	.5	89.2	1.8	.920	N
	1901.2 - 1903.0	>17.0		CORE LOSS - 1.8'					
67	1903.0 - 1904.0	14.6	.7	5.6	.3	92.9	1.2	.923	N
68	1904.0 - 1905.0	15.3	.7	5.9	.3	92.8	1.1	.915	N
69	1905.0 - 1906.0	17.7	.7	6.8	.3	91.6	1.3	.919	N
70	1906.0 - 1907.0	7.4	.7	2.9	.3	96.3	.5	.924	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 4 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
71	1907.0 - 1907.5	7.3	.7	2.8	.3	96.4	.5	.919	N
✓	1907.5 - 1908.0	> 7.0		CORE LOSS - 0.5'					
72	1908.0 - 1909.0	7.2	.7	2.8	.3	96.4	.5	.918	N
73	1909.0 - 1910.0	6.8	.7	2.6	.3	96.6	.5	.926	N
74	1910.0 - 1911.0	7.2	.7	2.8	.3	95.9	1.1	.917	N
75	1911.0 - 1912.4	6.2	.6	2.4	.3	96.8	.6	.919	N
✓	1912.4 - 1913.0	> 6.2		CORE LOSS - 0.6'					
76	1913.0 - 1914.0	6.3	.7	2.4	.3	96.8	.5	.920	N
77	1914.0 - 1915.0	26.9	1.1	10.3	.5	87.2	2.1	.916	N
78	1915.0 - 1916.0	9.7	.6	3.7	.3	95.5	.5	.923	N
79	1916.0 - 1917.0	8.7	.7	3.4	.3	95.5	.8	.930	N
80	1917.0 - 1918.2	8.0	.7	3.1	.3	95.6	1.0	.924	N
✓	1918.2 - 1922.0	> 8.0		CORE LOSS - 3.8'					
81	1922.0 - 1922.6	7.9	.5	3.0	.2	96.0	.8	.920	N
✓	1922.6 - 1925.0	> 7.9		CORE LOSS - 2.4'					
82	1925.0 - 1926.0	7.9	.7	3.1	.3	95.9	.8	.924	N
83	1926.0 - 1926.9	8.7	.7	3.3	.3	95.5	.9	.922	N
✓	1926.9 - 1935.0	> 8.0		CORE LOSS - 8.1'					
84	1935.0 - 1936.0	6.9	.7	2.7	.3	96.3	.8	.924	N
85	1936.0 - 1937.0	7.3	.7	2.8	.3	96.2	.7	.927	N
86	1937.0 - 1938.0	5.5	.7	2.1	.3	96.8	.8	.923	N
87	1938.0 - 1939.0	5.8	.7	2.2	.3	96.7	.8	.922	N
88	1939.0 - 1940.0	9.2	.6	3.6	.3	95.0	1.2	.932	N
89	1940.0 - 1941.0	9.8	.7	3.8	.3	95.0	.9	.920	N
90	1941.0 - 1942.2	7.6	.5	2.9	.2	96.3	.6	.927	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 5 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
✓ 91	1942.2 - 1943.0	> 7.6		CORE LOSS - 0.8'					
91	1943.0 - 1944.0	10.2	.5	3.9	.2	94.7	1.2	.921	N
92	1944.0 - 1945.0	13.0	.8	5.0	.4	93.3	1.4	.915	N
93	1945.0 - 1946.0	11.3	1.0	4.3	.4	94.3	1.0	.923	N
94	1946.0 - 1947.0	9.1	.7	3.5	.3	95.4	.8	.917	N
95	1947.0 - 1948.0	7.7	1.0	3.0	.4	95.9	.8	.918	N
96	1948.0 - 1949.0	6.8	1.0	2.6	.4	96.3	.7	.919	N
97	1949.0 - 1950.0	11.9	1.0	4.5	.4	94.0	1.1	.913	N
✓ 98	1950.0 - 1951.0	26.5	1.2	10.1	.5	87.0	2.4	.919	N
99	1951.0 - 1952.0	18.2	1.0	7.1	.4	90.9	1.6	.933	N
100	1952.0 - 1953.0	9.0	1.0	3.5	.4	95.4	.7	.926	N
101	1953.0 - 1954.0	7.2	1.0	2.8	.4	96.2	.6	.924	N
102	1954.0 - 1955.0	7.1	1.0	2.8	.4	96.3	.6	.922	N
103	1955.0 - 1956.0	7.5	.7	2.9	.3	96.0	.8	.920	N
104	1956.0 - 1957.0	8.0	.7	3.1	.3	95.9	.7	.914	N
105	1957.0 - 1958.0	8.8	.7	3.4	.3	95.7	.6	.921	N
106	1958.0 - 1959.0	15.5	1.0	6.0	.4	92.5	1.1	.919	N
107	1959.0 - 1960.0	18.3	1.0	7.0	.4	91.1	1.5	.924	N
108	1960.0 - 1961.0	9.9	1.0	3.8	.4	94.9	.9	.925	N
109	1961.0 - 1962.0	8.2	1.0	3.1	.4	95.6	.9	.916	N
110	1962.0 - 1963.0	8.3	1.0	3.2	.4	95.6	.8	.917	N
111	1963.0 - 1964.0	9.0	.7	3.4	.3	95.5	.8	.921	N
112	1964.0 - 1965.0	10.5	.8	4.0	.4	94.8	.8	.920	N
✓ 113	1965.0 - 1966.0	28.0	1.4	10.7	.6	86.6	2.1	.914	S
114	1966.0 - 1967.0	14.2	1.0	5.5	.4	93.0	1.1	.932	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 6 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
115	1967.0 - 1968.0	9.4	1.0	3.6	.4	95.1	.9	.924	N
116	1968.0 - 1969.0	9.5	1.0	3.7	.4	95.3	.7	.921	N
117	1969.0 - 1970.0	9.9	.7	3.8	.3	95.1	.8	.926	N
118	1970.0 - 1971.0	10.5	.7	4.0	.3	94.6	1.1	.924	N
119	1971.0 - 1972.0	11.9	1.0	4.6	.4	94.1	.9	.924	N
120	1972.0 - 1973.0	12.0	.7	4.6	.3	94.3	.8	.925	N
121	1973.0 - 1974.0	12.1	1.1	4.7	.5	94.0	.9	.922	N
122	1974.0 - 1975.0	16.0	1.3	6.1	.6	91.9	1.4	.915	N
123	1975.0 - 1976.0	15.7	1.1	6.1	.5	92.1	1.4	.925	N
124	1976.0 - 1977.0	11.9	.7	4.6	.3	94.2	.9	.920	N
125	1977.0 - 1978.0	14.1	1.0	5.4	.4	92.9	1.3	.926	N
126	1978.0 - 1979.0	14.0	.7	5.4	.3	93.2	1.1	.925	N
127	1979.0 - 1980.0	13.4	.7	5.1	.3	93.3	1.3	.921	N
128	1980.0 - 1981.0	12.0	.7	4.6	.3	94.0	1.1	.923	N
129	1981.0 - 1982.0	11.0	.7	4.2	.3	94.5	1.0	.926	N
130	1982.0 - 1983.0	13.6	.7	5.2	.3	93.2	1.3	.921	N
131	1983.0 - 1984.0	13.9	.7	5.4	.3	93.2	1.2	.924	N
132	1984.0 - 1985.0	12.5	.7	4.8	.3	93.9	1.0	.925	N
133	1985.0 - 1986.0	12.6	.7	4.8	.3	94.0	.9	.915	N
134	1986.0 - 1987.0	13.3	1.0	5.0	.4	93.4	1.2	.907	N
135	1987.0 - 1988.0	14.2	1.0	5.4	.4	93.1	1.1	.909	N
136	1988.0 - 1989.0	15.1	1.2	5.7	.5	92.6	1.2	.902	N
137	1989.0 - 1990.0	13.9	1.0	5.3	.4	93.2	1.2	.906	N
138	1990.0 - 1991.0	13.7	1.2	5.2	.5	93.1	1.2	.910	N
139	1991.0 - 1992.0	12.9	1.0	4.9	.4	93.8	.9	.907	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 7 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
140	1992.0 - 1993.0	12.9	1.0	4.9	.4	93.7	1.0	.910	N
141	1993.0 - 1994.0	14.3	.8	5.5	.4	93.2	1.0	.913	N
142	1994.0 - 1995.0	16.2	1.0	6.1	.4	92.2	1.3	.909	N
143	1995.0 - 1996.0	18.2	1.3	6.9	.6	91.2	1.3	.910	N
144	1996.0 - 1997.0	16.4	1.2	6.2	.5	92.1	1.2	.910	N
145	1997.0 - 1998.0	15.7	1.0	5.9	.4	92.6	1.1	.903	N
146	1998.0 - 1999.0	30.8	1.4	11.7	.6	85.5	2.2	.912	N
147	1999.0 - 2000.0	23.1	1.2	8.8	.5	89.2	1.5	.914	N
148	2000.0 - 2001.0	21.9	1.2	8.3	.5	89.4	1.9	.905	N
149	2001.0 - 2002.0	24.8	1.4	9.4	.6	88.1	2.0	.902	N
150	2002.0 - 2003.0	22.7	1.4	8.6	.6	89.3	1.5	.912	N
151	2003.0 - 2004.0	19.6	1.2	7.4	.5	90.7	1.4	.903	N
152	2004.0 - 2005.0	16.3	1.2	6.2	.5	92.2	1.1	.911	N
153	2005.0 - 2006.0	14.1	1.2	5.4	.5	93.2	.9	.914	N
154	2006.0 - 2007.0	10.9	1.2	4.1	.5	94.7	.7	.909	N
155	2007.0 - 2008.0	10.8	1.2	4.1	.5	94.8	.6	.914	N
156	2008.0 - 2009.0	12.7	1.0	4.8	.4	93.9	.9	.905	N
157	2009.0 - 2010.0	15.4	.7	5.9	.3	91.8	2.0	.916	N
158	2010.0 - 2011.0	11.1	1.2	4.2	.5	94.2	1.1	.914	N
159	2011.0 - 2012.0	9.5	1.0	3.6	.4	95.3	.7	.915	N
160	2012.0 - 2013.0	8.4	.7	3.2	.3	95.7	.8	.914	N
161	2013.0 - 2014.0	10.9	.7	4.2	.3	94.6	.9	.915	N
162	2014.0 - 2015.0	25.3	1.4	9.7	.6	87.9	1.8	.918	N
163	2015.0 - 2016.0	24.1	1.0	9.2	.4	88.2	2.2	.914	N
164	2016.0 - 2017.0	12.3	1.2	4.7	.5	93.9	.9	.910	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 8 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
165	2017.0 - 2018.0	9.7	1.2	3.7	.5	95.0	.8	.912	N
166	2018.0 - 2019.0	9.6	1.4	3.7	.6	94.9	.8	.911	N
167	2019.0 - 2020.0	8.2	1.0	3.1	.4	95.6	.9	.910	N
168	2020.0 - 2021.0	8.9	1.0	3.4	.4	95.4	.8	.921	N
169	2021.0 - 2022.0	14.7	1.0	5.6	.4	92.2	1.8	.908	N
170	2022.0 - 2023.0	12.3	1.2	4.7	.5	93.8	1.0	.908	N
171	2023.0 - 2024.0	8.5	1.2	3.2	.5	95.3	1.0	.910	N
172	2024.0 - 2025.0	5.6	1.2	2.1	.5	96.7	.7	.908	N
173	2025.0 - 2026.0	6.4	1.4	2.4	.6	96.3	.7	.912	N
174	2026.0 - 2027.0	8.9	1.4	3.4	.6	95.2	.8	.917	N
175	2027.0 - 2028.0	9.8	1.0	3.7	.4	95.0	.9	.907	N
176	2028.0 - 2029.0	7.3	1.2	2.8	.5	96.0	.7	.914	N
177	2029.0 - 2030.0	7.2	1.0	2.8	.4	96.0	.8	.917	N
178	2030.0 - 2031.0	11.2	1.2	4.3	.5	94.3	.9	.912	N
179	2031.0 - 2032.0	25.1	1.7	9.5	.7	87.8	2.0	.907	N
180	2032.0 - 2033.0	11.3	1.2	4.3	.5	94.1	1.1	.917	N
181	2033.0 - 2034.0	9.1	1.0	3.5	.4	95.2	1.0	.911	N
182	2034.0 - 2035.0	8.6	1.2	3.3	.5	95.2	1.0	.912	N
183	2035.0 - 2036.0	9.0	1.2	3.4	.5	95.1	1.0	.913	N
184	2036.0 - 2037.0	10.0	1.2	3.8	.5	94.6	1.1	.912	N
185	2037.0 - 2038.0	8.8	1.2	3.3	.5	95.2	1.0	.912	N
186	2038.0 - 2039.0	7.2	1.0	2.8	.4	96.0	.9	.917	N
187	2039.0 - 2040.0	11.0	1.2	4.2	.5	94.2	1.1	.912	N
188	2040.0 - 2041.0	33.3	1.7	12.7	.7	83.6	3.0	.915	N
189	2041.0 - 2042.0	13.6	1.0	5.2	.4	93.2	1.2	.921	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 9 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
190	2042.0 - 2043.0	10.7	1.0	4.1	.4	94.6	.9	.922	N
	2043.0 - 2043.6	79.0		CORE LOSS - 0.6'					
191	2043.6 - 2045.0	7.6	1.2	2.9	.5	95.7	.9	.922	N
192	2045.0 - 2046.0	7.8	1.0	3.0	.4	95.5	1.1	.927	N
193	2046.0 - 2047.0	7.2	1.0	2.8	.4	96.0	.8	.921	N
194	2047.0 - 2048.0	23.9	1.2	9.2	.5	88.1	2.2	.921	N
195	2048.0 - 2049.0	26.5	1.2	10.3	.5	87.2	2.0	.928	N
196	2049.0 - 2050.0	13.8	.7	5.3	.3	93.2	1.2	.918	N
197	2050.0 - 2051.0	9.4	1.0	3.6	.4	95.0	1.0	.913	N
198	2051.0 - 2052.0	9.3	1.2	3.6	.5	94.9	1.0	.920	N
199	2052.0 - 2053.0	10.0	1.2	3.8	.5	94.4	1.3	.911	N
200	2053.0 - 2054.0	12.3	1.2	4.7	.5	93.5	1.3	.911	N
201	2054.0 - 2055.0	15.3	1.2	5.8	.5	92.4	1.3	.906	N
202	2055.0 - 2056.0	34.0	1.2	12.9	.5	84.2	2.4	.911	N
203	2056.0 - 2057.0	33.8	1.0	13.0	.4	84.3	2.4	.918	N
204	2057.0 - 2058.0	11.5	.7	4.4	.3	94.3	1.0	.924	N
205	2058.0 - 2059.0	9.9	.7	3.8	.3	95.0	.9	.913	N
206	2059.0 - 2060.0	9.5	.8	3.6	.4	95.2	.8	.913	N
207	2060.0 - 2061.0	9.0	.7	3.5	.3	95.5	.8	.918	N
208	2061.0 - 2062.0	8.6	.2	3.3	.1	95.2	1.4	.918	N
209	2062.0 - 2063.0	9.5	1.0	3.6	.4	95.2	.8	.909	N
210	2063.0 - 2064.0	12.8	1.0	4.9	.4	93.5	1.2	.917	N
211	2064.0 - 2065.0	15.6	.7	5.9	.3	92.5	1.3	.913	N
212	2065.0 - 2066.0	13.1	.2	5.0	.1	93.4	1.5	.915	N
213	2066.0 - 2067.0	12.0	.2	4.6	.1	94.1	1.2	.918	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 10 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
214	2067.0 - 2068.0	10.6	.7	4.0	.3	95.0	.7	.909	N
215	2068.0 - 2069.0	12.4	1.0	4.7	.4	94.0	.9	.904	N
216	2069.0 - 2070.0	12.5	1.0	4.8	.4	93.6	1.2	.915	N
217	2070.0 - 2071.0	31.7	1.2	12.1	.5	85.0	2.4	.912	N
218	2071.0 - 2072.0	40.6	1.2	15.5	.5	81.3	2.7	.913	N
219	2072.0 - 2073.0	15.7	.7	6.0	.3	92.8	.9	.911	N
220	2073.0 - 2074.0	11.2	.7	4.3	.3	94.5	.9	.909	N
221	2074.0 - 2075.0	11.7	.7	4.5	.3	94.2	1.1	.910	N
222	2075.0 - 2076.0	12.0	1.0	4.5	.4	94.3	.8	.909	N
223	2076.0 - 2077.0	12.0	.7	4.5	.3	94.3	.9	.896	N
224	2077.0 - 2078.0	10.0	.7	3.8	.3	95.2	.8	.902	N
225	2078.0 - 2079.0	11.3	.7	4.3	.3	94.6	.8	.916	N
226	2079.0 - 2080.0	31.2	1.2	11.9	.5	85.4	2.2	.912	N
227	2080.0 - 2081.0	13.8	.7	5.3	.3	93.2	1.3	.912	N
228	2081.0 - 2082.0	10.0	1.0	3.8	.4	94.8	1.0	.918	N
229	2082.0 - 2083.0	13.8	.5	5.2	.2	93.6	1.0	.906	N
230	2083.0 - 2084.0	11.1	.2	4.2	.1	94.8	.9	.907	N
231	2084.0 - 2085.0	11.7	.2	4.5	.1	93.7	1.7	.922	N
232	2085.0 - 2086.0	16.8	.5	6.4	.2	92.3	1.1	.911	N
233	2086.0 - 2087.0	15.5	.5	5.9	.2	92.7	1.2	.919	N
234	2087.0 - 2088.0	13.0	.7	5.0	.3	93.5	1.2	.926	N
235	2088.0 - 2089.0	11.7	.2	4.4	.1	94.7	.8	.912	N
236	2089.0 - 2090.0	10.4	1.0	4.0	.4	95.0	.6	.914	N
237	2090.0 - 2091.0	10.1	.7	3.9	.3	94.9	.9	.917	N
238	2091.0 - 2092.0	10.6	.7	4.0	.3	95.1	.6	.908	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 11 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
239	2092.0 - 2093.0	12.9	.7	4.9	.3	94.0	.8	.910	N
240	2093.0 - 2094.0	18.2	.8	7.0	.4	91.4	1.3	.922	N
241	2094.0 - 2095.0	14.4	.7	5.5	.3	93.3	.9	.910	N
242	2095.0 - 2096.0	13.0	.7	5.0	.3	93.9	.8	.914	N
243	2096.0 - 2097.0	11.8	.7	4.5	.3	94.5	.7	.922	N
244	2097.0 - 2098.0	12.5	.6	4.8	.3	93.9	1.1	.918	N
245	2098.0 - 2099.0	12.1	.5	4.6	.2	94.6	.6	.917	N
246	2099.0 - 2100.0	11.4	.5	4.4	.2	94.7	.7	.927	N
247	2100.0 - 2101.0	14.6	.4	5.6	.2	93.2	1.1	.916	N
248	2101.0 - 2102.0	12.8	.5	4.9	.2	94.2	.7	.920	N
249	2102.0 - 2103.0	13.5	.5	5.2	.2	94.0	.6	.921	N
250	2103.0 - 2104.0	14.3	.2	5.4	.1	93.9	.6	.908	N
251	2104.0 - 2105.0	12.8	.7	4.8	.3	94.2	.7	.908	N
252	2105.0 - 2106.0	16.7	.6	6.3	.3	92.5	.9	.908	N
253	2106.0 - 2107.0	11.6	.5	4.4	.2	94.4	1.0	.915	N
254	2107.0 - 2108.0	13.6	.2	5.2	.1	94.0	.7	.917	N
255	2108.0 - 2109.0	14.4	.5	5.6	.2	93.6	.6	.924	N
256	2109.0 - 2110.0	13.0	.5	5.0	.2	94.1	.7	.916	N
257	2110.0 - 2111.0	12.2	.2	4.6	.1	94.4	.9	.914	N
258	2111.0 - 2112.0	9.9	.7	3.8	.3	94.7	1.2	.922	N
259	2112.0 - 2113.0	18.8	1.0	7.2	.4	90.7	1.8	.913	N
260	2113.0 - 2114.0	16.9	1.0	6.4	.4	91.6	1.6	.913	N
261	2114.0 - 2115.0	12.8	.7	4.9	.3	93.8	1.0	.921	N
262	2115.0 - 2116.0	11.8	.7	4.5	.3	94.3	.9	.908	N
263	2116.0 - 2117.0	14.6	1.0	5.5	.4	93.0	1.1	.902	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 12 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
264	2117.0 - 2118.0	12.1	.7	4.6	.3	94.5	.6	.907	N
265	2118.0 - 2119.0	11.3	.5	4.2	.2	94.7	.9	.903	N
266	2119.0 - 2120.0	10.1	.5	3.8	.2	95.2	.8	.911	N
267	2120.0 - 2121.0	21.0	1.0	8.0	.4	90.0	1.6	.920	N
268	2121.0 - 2122.0	15.1	1.0	5.7	.4	92.7	1.2	.912	N
269	2122.0 - 2123.0	11.7	1.0	4.5	.4	94.3	.8	.917	N
270	2123.0 - 2124.0	10.9	1.0	4.2	.4	94.4	1.0	.924	N
271	2124.0 - 2125.0	10.3	.5	3.9	.2	95.2	.7	.913	N
272	2125.0 - 2126.0	10.1	.7	3.9	.3	95.2	.6	.913	N
273	2126.0 - 2127.0	11.7	.5	4.5	.2	94.7	.6	.917	N
274	2127.0 - 2128.0	21.1	1.0	8.0	.4	89.8	1.8	.912	N
275	2128.0 - 2129.0	13.3	3.8	5.1	1.6	92.6	.7	.915	N
276	2129.0 - 2130.0	15.4	3.1	5.9	1.3	92.1	.7	.916	N
277	2130.0 - 2131.0	13.0	1.9	5.0	.8	93.1	1.1	.917	N
278	2131.0 - 2132.0	13.4	.7	5.1	.3	93.7	.9	.915	N
279	2132.0 - 2133.0	12.9	.5	5.0	.2	94.0	.8	.920	N
280	2133.0 - 2134.0	13.5	.7	5.1	.3	93.7	.9	.911	N
281	2134.0 - 2135.0	14.5	.7	5.6	.3	93.2	1.0	.914	N
282	2135.0 - 2136.0	18.4	1.0	7.1	.4	91.2	1.4	.921	N
283	2136.0 - 2137.0	16.5	1.0	6.3	.4	92.1	1.2	.909	N
284	2137.0 - 2138.0	17.4	.7	6.6	.3	91.8	1.3	.912	N
285	2138.0 - 2139.0	23.9	1.0	9.2	.4	88.7	1.7	.917	N
286	2139.0 - 2140.0	23.3	1.0	8.9	.4	88.9	1.8	.914	N
287	2140.0 - 2141.0	14.4	1.0	5.5	.4	92.9	1.2	.914	N
288	2141.0 - 2142.0	10.6	.7	4.1	.3	94.1	1.5	.921	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 13 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
289	2142.0 - 2143.0	12.0	.7	4.6	.3	94.1	1.0	.914	N
290	2143.0 - 2144.0	10.5	.7	4.0	.3	94.7	1.0	.914	N
291	2144.0 - 2145.0	9.2	.5	3.6	.2	95.5	.8	.922	N
292	2145.0 - 2146.0	9.9	.7	3.8	.3	95.1	.8	.911	N
293	2146.0 - 2147.0	12.8	.7	4.9	.3	93.8	1.0	.918	N
294	2147.0 - 2148.0	13.6	.7	5.2	.3	93.4	1.1	.920	N
295	2148.0 - 2149.0	16.1	.7	6.1	.3	92.3	1.3	.911	N
296	2149.0 - 2150.0	10.2	.7	3.9	.3	94.8	1.0	.916	N
297	2150.0 - 2151.0	6.9	1.0	2.6	.4	96.2	.8	.920	N
298	2151.0 - 2152.0	8.7	1.0	3.3	.4	95.2	1.1	.915	N
299	2152.0 - 2153.0	9.5	.5	3.6	.2	95.0	1.2	.919	N
300	2153.0 - 2154.0	8.3	.7	3.2	.3	95.6	.9	.921	N
301	2154.0 - 2155.0	7.1	.2	2.7	.1	95.8	1.4	.922	N
302	2155.0 - 2156.0	15.8	.7	6.0	.3	92.2	1.5	.913	N
303	2156.0 - 2157.0	17.3	.7	6.6	.3	91.5	1.6	.916	N
304	2157.0 - 2158.0	16.3	.5	6.2	.2	92.2	1.4	.911	N
305	2158.0 - 2159.0	13.9	.7	5.3	.3	93.3	1.1	.913	N
306	2159.0 - 2160.0	11.6	.5	4.4	.2	94.3	1.1	.913	N
307	2160.0 - 2161.0	12.7	.7	4.8	.3	93.8	1.1	.904	N
308	2161.0 - 2162.0	15.0	.5	5.7	.2	93.1	1.1	.904	N
309	2162.0 - 2163.0	41.4	1.2	16.1	.5	80.6	2.8	.929	N
310	2163.0 - 2164.0	31.8	1.0	12.1	.4	85.2	2.3	.914	N
311	2164.0 - 2165.0	23.2	1.0	8.9	.4	88.8	1.9	.916	N
312	2165.0 - 2166.0	14.3	.7	5.5	.3	93.0	1.2	.921	N
313	2166.0 - 2167.0	13.1	.7	5.0	.3	93.6	1.1	.909	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 14 of 23

R.H. GODDE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
314	2167.0 - 2168.0	15.9	.7	6.0	.3	92.5	1.2	.907	N
315	2168.0 - 2169.0	14.3	.7	5.4	.3	92.9	1.4	.915	N
316	2169.0 - 2170.0	15.4	1.0	5.8	.4	92.6	1.2	.908	N
317	2170.0 - 2171.0	15.8	.5	6.0	.2	92.7	1.1	.909	N
318	2171.0 - 2172.0	22.6	.7	8.6	.3	89.5	1.6	.911	N
319	2172.0 - 2173.0	45.6	1.2	17.5	.5	78.2	3.8	.919	N
320	2173.0 - 2174.0	33.7	1.0	12.7	.4	84.2	2.7	.906	N
321	2174.0 - 2175.0	18.0	1.0	6.8	.4	91.3	1.5	.911	N
322	2175.0 - 2176.0	16.0	.7	6.1	.3	92.1	1.6	.904	N
323	2176.0 - 2177.0	18.5	1.2	7.0	.5	90.8	1.7	.903	N
324	2177.0 - 2178.0	22.3	1.2	8.4	.5	89.0	2.1	.903	N
325	2178.0 - 2179.0	41.8	1.2	15.8	.5	80.4	3.3	.909	N
326	2179.0 - 2180.0	20.6	1.0	7.9	.4	89.8	1.9	.914	N
327	2180.0 - 2181.0	9.8	.5	3.8	.2	95.1	1.0	.918	N
328	2181.0 - 2182.0	6.4	.6	2.4	.3	96.5	.8	.910	N
329	2182.0 - 2183.0	6.1	.6	2.3	.3	96.9	.6	.911	N
330	2183.0 - 2184.0	6.7	.7	2.5	.3	96.7	.5	.908	N
331	2184.0 - 2185.0	6.1	.5	2.3	.2	97.0	.5	.897	N
332	2185.0 - 2186.0	10.5	.5	4.0	.2	95.0	.8	.905	N
333	2186.0 - 2187.0	5.2	3.8	2.0	1.6	91.7	4.7	.924	N
334	2187.0 - 2188.0	4.4a	3.6	1.7	1.5	92.6	4.2		N
335	2188.0 - 2189.0	4.7a	1.0	1.8	.4	97.1	.7		N
336	2189.0 - 2190.0	3.0a	1.2	1.2	.5	96.4	2.0		N
337	2190.0 - 2191.0	2.5a	1.4	1.0	.6	95.1	3.3		N
338	2191.0 - 2192.0	4.4a	.5	1.7	.2	96.8	1.3		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 15 of 23

R.H. GODDE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
339	2192.0 - 2193.0	6.3	.5	2.4	.2	96.7	.7	.905	N
340	2193.0 - 2194.0	13.7	1.0	5.2	.4	93.2	1.3	.899	N
341	2194.0 - 2195.0	13.1	.7	4.9	.3	93.7	1.1	.899	N
342	2195.0 - 2196.0	24.9	1.2	9.3	.5	88.2	2.0	.896	S
343	2196.0 - 2197.0	25.2	8.1	9.5	3.4	77.1	10.0	.902	S
344	2197.0 - 2198.0	35.4	1.7	13.4	.7	83.1	2.8	.911	M
345	2198.0 - 2199.0	17.3	1.2	6.5	.5	91.5	1.5	.898	N
346	2199.0 - 2200.0	17.0	1.2	6.4	.5	91.8	1.3	.898	N
347	2200.0 - 2201.0	14.2	.7	5.3	.3	93.1	1.3	.899	N
348	2201.0 - 2202.0	13.9	.7	5.2	.3	93.4	1.1	.894	N
349	2202.0 - 2203.0	20.3	1.0	7.6	.4	90.4	1.6	.899	S
350	2203.0 - 2204.0	25.7	1.0	9.8	.4	87.7	2.1	.914	S
351	2204.0 - 2205.0	32.8	1.7	12.5	.7	84.6	2.2	.914	N
352	2205.0 - 2206.0	23.3	1.6	8.8	.7	89.2	1.3	.907	N
353	2206.0 - 2207.0	29.4	6.0	11.1	2.5	79.1	7.4	.901	N
354	2207.0 - 2208.0	30.9	8.6	11.6	3.6	74.4	10.5	.897	N
355	2208.0 - 2209.0	46.1	1.7	17.5	.7	77.9	3.9	.907	S
356	2209.0 - 2210.0	32.5	1.4	12.1	.6	85.5	1.8	.893	N
357	2210.0 - 2211.0	28.2	1.2	10.4	.5	87.5	1.6	.886	N
358	2211.0 - 2212.0	21.9	1.2	8.2	.5	89.6	1.7	.895	N
359	2212.0 - 2213.0	21.2	1.0	8.0	.4	90.0	1.6	.903	N
360	2213.0 - 2214.0	16.4	1.0	6.1	.4	92.0	1.5	.899	N
361	2214.0 - 2215.0	12.6	.7	4.8	.3	93.9	1.1	.904	N
362	2215.0 - 2216.0	18.6	1.0	7.0	.4	91.3	1.3	.906	N
363	2216.0 - 2217.0	23.8	.8	8.9	.4	89.4	1.3	.896	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 16 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
364	2217.0 - 2218.0	12.5	1.4	4.7	.6	93.8	.9	.904	N
365	2218.0 - 2219.0	13.4	1.2	5.1	.5	93.4	1.0	.909	N
366	2219.0 - 2220.0	9.5	1.9	3.6	.8	94.1	1.5	.912	N
367	2220.0 - 2221.0	10.5	.7	4.0	.3	94.9	.9	.905	N
368	2221.0 - 2222.0	9.7	.7	3.7	.3	95.1	.9	.905	N
369	2222.0 - 2223.0	10.4	.7	3.9	.3	94.8	1.0	.899	N
370	2223.0 - 2224.0	12.2	.7	4.6	.3	94.3	.8	.902	N
371	2224.0 - 2225.0	25.0	1.2	9.6	.5	88.0	1.9	.918	N
372	2225.0 - 2226.0	44.9	1.4	17.3	.6	78.8	3.3	.922	N
373	2226.0 - 2227.0	26.0	1.4	9.9	.6	87.3	2.2	.913	N
374	2227.0 - 2228.0	21.6	1.0	8.1	.4	90.1	1.4	.902	N
375	2228.0 - 2229.0	23.8	.7	8.9	.3	89.5	1.3	.895	N
376	2229.0 - 2230.0	36.6	1.0	13.9	.4	83.2	2.5	.908	N
377	2230.0 - 2231.0	24.7	1.0	9.4	.4	88.9	1.3	.912	N
378	2231.0 - 2232.0	33.3	1.0	12.6	.4	84.7	2.3	.909	N
379	2232.0 - 2233.0	58.7	1.2	22.2	.5	74.0	3.3	.906	S
380	2233.0 - 2234.0	64.5	1.4	24.6	.6	70.6	4.2	.913	S
381	2234.0 - 2235.0	43.7	1.2	16.4	.5	79.7	3.4	.902	S
382	2235.0 - 2236.0	76.7	1.9	28.9	.8	64.8	5.5	.904	H
383	2236.0 - 2237.0	76.8	1.4	29.1	.6	64.9	5.4	.908	H
384	2237.0 - 2238.0	41.3	9.1	15.6	3.8	68.2	12.4	.903	S
385	2238.0 - 2239.0	44.1	5.0	16.7	2.1	73.6	7.6	.908	S
386	2239.0 - 2240.0	41.6	1.7	15.7	.7	80.9	2.7	.908	S
387	2240.0 - 2241.0	56.2	1.0	21.3	.4	74.0	4.3	.908	S
388	2241.0 - 2242.0	49.8	1.2	19.2	.5	76.6	3.7	.924	S

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 17 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
389	2242.0 - 2243.0	25.1	1.9	9.7	.8	87.6	1.9	.923	N
390	2243.0 - 2244.0	22.2	1.4	8.5	.6	88.9	2.0	.922	N
391	2244.0 - 2245.0	18.6	1.9	7.1	.8	90.5	1.6	.917	N
392	2245.0 - 2246.0	25.6	1.4	9.8	.6	87.7	1.9	.914	N
393	2246.0 - 2247.0	48.8	1.0	18.7	.4	77.6	3.3	.918	N
394	2247.0 - 2248.0	61.4	1.2	23.5	.5	71.3	4.7	.918	S
395	2248.0 - 2249.0	30.6	1.9	11.8	.8	84.8	2.6	.922	N
396	2249.0 - 2250.0	20.8	1.7	7.9	.7	90.0	1.4	.915	N
397	2250.0 - 2251.0	17.9	1.9	6.9	.8	90.9	1.4	.917	N
398	2251.0 - 2252.0	17.6	1.9	6.7	.8	91.1	1.4	.918	N
399	2252.0 - 2253.0	19.9	2.4	7.6	1.0	89.7	1.7	.914	N
400	2253.0 - 2254.0	23.5	2.2	8.9	.9	88.5	1.7	.910	N
401	2254.0 - 2255.0	39.1	1.9	14.9	.8	81.8	2.5	.911	N
402	2255.0 - 2256.0	33.9	1.0	12.7	.4	84.5	2.4	.897	N
403	2256.0 - 2257.0	45.2	1.2	17.1	.5	78.9	3.5	.909	N
404	2257.0 - 2258.0	30.9	.8	11.6	.3	85.9	2.3	.896	N
405	2258.0 - 2259.0	25.4	1.0	9.4	.4	88.3	1.9	.886	N
406	2259.0 - 2260.0	36.7	1.0	13.7	.4	83.8	2.1	.894	N
407	2260.0 - 2261.0	26.5	.7	9.8	.3	88.3	1.6	.888	N
408	2261.0 - 2262.0	37.1	1.0	13.9	.4	83.2	2.5	.899	N
409	2262.0 - 2263.0	18.4	1.7	7.0	.7	90.7	1.6	.905	N
410	2263.0 - 2264.0	19.9	1.4	7.6	.6	90.2	1.6	.911	N
411	2264.0 - 2265.0	18.6	1.0	7.0	.4	91.4	1.2	.901	N
412	2265.0 - 2266.0	13.7	.7	5.2	.3	93.5	1.1	.904	N
413	2266.0 - 2267.0	17.2	.7	6.5	.3	92.2	1.1	.901	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 18 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
414	2267.0 - 2268.0	21.8	.7	8.2	.3	90.1	1.4	.899	N
415	2268.0 - 2269.0	24.4	1.7	9.2	.7	87.8	2.3	.902	N
416	2269.0 - 2270.0	17.2	1.4	6.5	.6	91.3	1.6	.910	N
417	2270.0 - 2271.0	12.9	1.0	4.9	.4	93.6	1.2	.902	N
418	2271.0 - 2272.0	14.5	1.2	5.5	.5	92.9	1.1	.903	N
419	2272.0 - 2273.0	16.7	.7	6.3	.3	92.3	1.1	.900	N
420	2273.0 - 2274.0	19.9	.5	7.4	.2	91.3	1.2	.888	N
421	2274.0 - 2275.0	26.8	.5	10.0	.2	88.4	1.4	.890	N
422	2275.0 - 2276.0	37.8	.7	14.2	.3	83.4	2.1	.900	N
423	2276.0 - 2277.0	37.7	.7	14.1	.3	83.5	2.1	.896	N
424	2277.0 - 2278.0	30.4	1.0	11.4	.4	86.0	2.2	.896	N
425	2278.0 - 2279.0	25.8	1.4	9.8	.6	88.0	1.6	.906	N
426	2279.0 - 2280.0	24.5	1.2	9.2	.5	88.4	1.9	.904	N
427	2280.0 - 2281.0	29.9	1.2	11.2	.5	86.5	1.8	.898	N
428	2281.0 - 2282.0	40.2	.7	15.1	.3	82.5	2.2	.897	N
429	2282.0 - 2283.0	31.8	.7	11.9	.3	86.0	1.8	.898	N
430	2283.0 - 2284.0	23.6	.7	8.8	.3	89.1	1.8	.896	N
431	2284.0 - 2285.0	23.3	1.0	8.8	.4	89.0	1.8	.902	N
432	2285.0 - 2286.0	19.0	1.2	7.2	.5	90.8	1.5	.906	N
433	2286.0 - 2287.0	15.9	1.0	6.0	.4	92.7	.9	.906	N
434	2287.0 - 2288.0	12.2	.7	4.7	.3	94.2	.9	.912	N
435	2288.0 - 2289.0	12.1	.7	4.6	.3	94.1	1.0	.909	N
436	2289.0 - 2290.0	20.4	1.0	7.8	.4	90.5	1.3	.911	N
437	2290.0 - 2291.0	24.4	1.0	9.4	.4	88.2	2.0	.922	N
438	2291.0 - 2292.0	12.2	.7	4.6	.3	94.4	.7	.900	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 19 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
439	2292.0 - 2293.0	13.9	.7	5.3	.3	93.5	1.0	.905	N
440	2293.0 - 2294.0	10.8	1.0	4.1	.4	94.6	.9	.907	N
441	2294.0 - 2295.0	5.1a	1.0	1.9	.4	97.1	.6		N
442	2295.0 - 2296.0	8.8	1.0	3.3	.4	95.9	.4	.891	N
443	2296.0 - 2297.0	13.7	1.0	5.1	.4	93.4	1.1	.895	N
444	2297.0 - 2298.0	22.0	.7	8.1	.3	90.0	1.6	.888	N
445	2298.0 - 2299.0	7.0	1.0	2.6	.4	96.3	.7	.886	N
446	2299.0 - 2300.0	8.6	2.4	3.2	1.0	95.0	.8	.898	N
447	2300.0 - 2301.0	8.6	.7	3.2	.3	95.6	.9	.897	N
448	2301.0 - 2302.0	15.2	.2	5.7	.1	92.8	1.4	.905	N
449	2302.0 - 2303.0	36.4	1.2	13.9	.5	83.3	2.3	.919	N
450	2303.0 - 2304.0	15.6	1.0	5.9	.4	92.4	1.3	.909	N
451	2304.0 - 2305.0	10.7	.7	4.1	.3	94.7	1.0	.907	N
452	2305.0 - 2306.0	9.6	.7	3.6	.3	95.1	1.0	.904	N
453	2306.0 - 2307.0	9.3	1.0	3.4	.4	95.3	.9	.889	N
454	2307.0 - 2308.0	14.3	1.0	5.3	.4	93.2	1.1	.894	N
455	2308.0 - 2309.0	28.0	1.2	10.7	.5	86.6	2.2	.914	N
456	2309.0 - 2310.0	42.8	1.2	16.3	.5	80.2	3.0	.913	N
457	2310.0 - 2311.0	15.0	.7	5.7	.3	92.4	1.6	.907	N
458	2311.0 - 2312.0	8.4	.7	3.2	.3	95.8	.7	.906	N
459	2312.0 - 2313.0	8.5	.7	3.2	.3	95.5	1.0	.910	N
460	2313.0 - 2314.0	3.9a	.7	1.5	.3	97.5	.7		N
461	2314.0 - 2315.0	3.2a	1.0	1.2	.4	97.6	.8		N
462	2315.0 - 2316.0	3.8a	1.0	1.5	.4	97.5	.6		N
463	2316.0 - 2317.0	4.4a	1.0	1.7	.4	97.2	.7		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 20 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
464	2317.0 - 2318.0	16.0	1.0	6.1	.4	92.1	1.4	.908	N
465	2318.0 - 2319.0	37.7	1.9	14.5	.8	82.2	2.5	.918	N
466	2319.0 - 2320.0	18.3	3.1	6.9	1.3	90.5	1.3	.903	N
467	2320.0 - 2321.0	18.6	1.4	7.1	.6	90.7	1.6	.911	N
468	2321.0 - 2322.0	14.8	1.4	5.6	.6	92.6	1.2	.905	N
469	2322.0 - 2323.0	19.2	1.4	7.3	.6	90.4	1.7	.905	N
470	2323.0 - 2324.0	8.9	1.2	3.4	.5	95.1	1.0	.910	N
471	2324.0 - 2325.0	9.4	1.0	3.6	.4	95.3	.7	.910	N
472	2325.0 - 2326.0	7.4	1.0	2.8	.4	96.1	.7	.913	N
473	2326.0 - 2327.0	10.7	.7	4.0	.3	95.0	.7	.902	N
474	2327.0 - 2328.0	4.1a	1.0	1.6	.4	97.5	.5		N
475	2328.0 - 2329.0	6.9	1.0	2.6	.4	96.3	.7	.909	N
476	2329.0 - 2330.0	6.0	.7	2.3	.3	96.8	.6	.911	N
477	2330.0 - 2331.0	8.2	.7	3.1	.3	95.8	.8	.915	N
478	2331.0 - 2332.0	5.6	1.2	2.1	.5	96.7	.7	.913	N
479	2332.0 - 2333.0	5.6	.7	2.2	.3	96.7	.9	.923	N
480	2333.0 - 2334.0	6.4	.7	2.4	.3	96.3	1.0	.915	N
481	2334.0 - 2335.0	7.7	1.0	2.9	.4	95.7	1.0	.912	N
482	2335.0 - 2336.0	8.0	.7	3.0	.3	96.0	.7	.907	N
483	2336.0 - 2337.0	7.9	.7	3.0	.3	95.9	.8	.907	N
484	2337.0 - 2338.0	8.5	2.4	3.2	1.0	94.6	1.2	.911	N
485	2338.0 - 2339.0	8.0	2.4	3.1	1.0	95.0	.9	.915	N
486	2339.0 - 2340.0	6.6	2.6	2.5	1.1	95.5	.9	.906	N
487	2340.0 - 2341.0	5.4	1.9	2.1	.8	96.5	.6	.907	N
488	2341.0 - 2342.0	3.7a	1.9	1.4	.8	97.2	.6		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 21 of 23

R.H. GODDE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820876 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
489	2342.0 - 2343.0	2.9a	1.9	1.1	.8	97.4	.7	.906	N
490	2343.0 - 2344.0	3.1a	1.7	1.2	.7	97.4	.7		N
491	2344.0 - 2345.0	3.9a	1.9	1.5	.8	96.9	.8		N
492	2345.0 - 2346.0	5.2a	1.9	2.0	.8	96.0	1.2		N
493	2346.0 - 2347.0	5.9	1.9	2.2	.8	96.6	.4		N
494	2347.0 - 2348.0	4.5a	3.0	1.7	1.3	96.4	.6		N
495	2348.0 - 2349.0	2.2a	3.2	.8	1.4	97.3	.5		N
496	2349.0 - 2350.0	2.7a	2.9	1.1	1.2	97.0	.8		N
497	2350.0 - 2351.0	2.7a	3.1	1.0	1.3	96.8	.9		N
498	2351.0 - 2352.0	2.8a	2.9	1.1	1.2	97.0	.7		N
499	2352.0 - 2353.0	3.7a	2.6	1.4	1.1	96.9	.6		N
500	2353.0 - 2354.0	3.0a	2.2	1.2	.9	97.3	.7		N
501	2354.0 - 2355.0	2.2a	1.9	.8	.8	97.3	1.1		N
502	2355.0 - 2356.0	1.5a	1.9	.6	.8	98.1	.5		N
503	2356.0 - 2357.0	3.5a	1.4	1.3	.6	97.3	.8		N
504	2357.0 - 2358.0	3.7a	3.1	1.4	1.3	96.6	.7		N
505	2358.0 - 2359.0	3.8a	1.8	1.4	.8	97.3	.5		N
506	2359.0 - 2360.0	3.3a	2.2	1.3	.9	97.1	.7		N
507	2360.0 - 2361.0	3.0a	2.4	1.2	1.0	97.3	.6		N
508	2361.0 - 2362.0	3.0a	2.8	1.2	1.2	97.1	.6		N
509	2362.0 - 2363.0	4.1a	3.1	1.6	1.3	96.5	.6		N
510	2363.0 - 2364.0	3.7a	1.2	1.4	.5	97.3	.8		N
511	2364.0 - 2365.0	1.6a	1.0	.6	.4	98.5	.5		N
512	2365.0 - 2366.0	2.4a	1.0	.9	.4	97.9	.8		N
513	2366.0 - 2367.0	2.9a	1.0	1.1	.4	98.0	.5		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 22 of 23

R.H. GODDE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
514	2367.0 - 2368.0	6.4	.7	2.4	.3	96.8	.5	.893	N
515	2368.0 - 2369.0	4.8a	1.0	1.9	.4	97.0	.7		N
516	2369.0 - 2370.0	2.6a	1.2	1.0	.5	97.9	.6		N
517	2370.0 - 2371.0	2.3a	1.7	.9	.7	97.9	.5		N
518	2371.0 - 2372.0	1.2a	1.4	.5	.6	98.5	.5		N
519	2372.0 - 2373.0	1.4a	1.7	.5	.7	98.4	.4		N
520	2373.0 - 2374.0	1.5a	1.7	.6	.7	98.3	.4		N
521	2374.0 - 2375.0	1.7a	2.0	.7	.9	98.0	.5		N
522	2375.0 - 2376.0	1.5a	1.9	.6	.8	98.1	.5		N
523	2376.0 - 2377.0	1.5a	2.0	.6	.9	98.0	.6		N
524	2377.0 - 2378.0	1.7a	1.7	.7	.7	98.2	.4		N
525	2378.0 - 2379.0	1.4a	2.2	.5	.9	98.1	.5		N
526	2379.0 - 2380.0	1.5a	2.4	.6	1.0	97.9	.5		N
527	2380.0 - 2381.0	2.0a	1.7	.8	.7	98.2	.3		N
528	2381.0 - 2382.0	2.8a	1.7	1.1	.7	98.0	.2		N
529	2382.0 - 2383.0	2.0a	2.2	.8	.9	97.8	.6		N
530	2383.0 - 2384.0	1.2a	2.4	.5	1.0	98.0	.5		N
531	2384.0 - 2385.0	2.2a	2.4	.8	1.0	97.8	.4		N
532	2385.0 - 2386.0	2.2a	1.7	.8	.7	98.0	.5		N
533	2386.0 - 2387.0	7.0	1.4	2.7	.6	96.1	.6	.915	N
534	2387.0 - 2388.0	5.6	1.6	2.1	.7	96.6	.6	.903	N
535	2388.0 - 2389.0	2.5a	1.9	1.0	.8	97.7	.5		N
536	2389.0 - 2390.0	24.4	1.4	9.3	.6	88.4	1.8	.907	N
537	2390.0 - 2391.0	20.6	1.4	7.9	.6	89.8	1.8	.914	N
538	2391.0 - 2392.0	24.9	1.2	9.4	.5	88.4	1.7	.906	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 23 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 17 FEB 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW#1

Elevation:

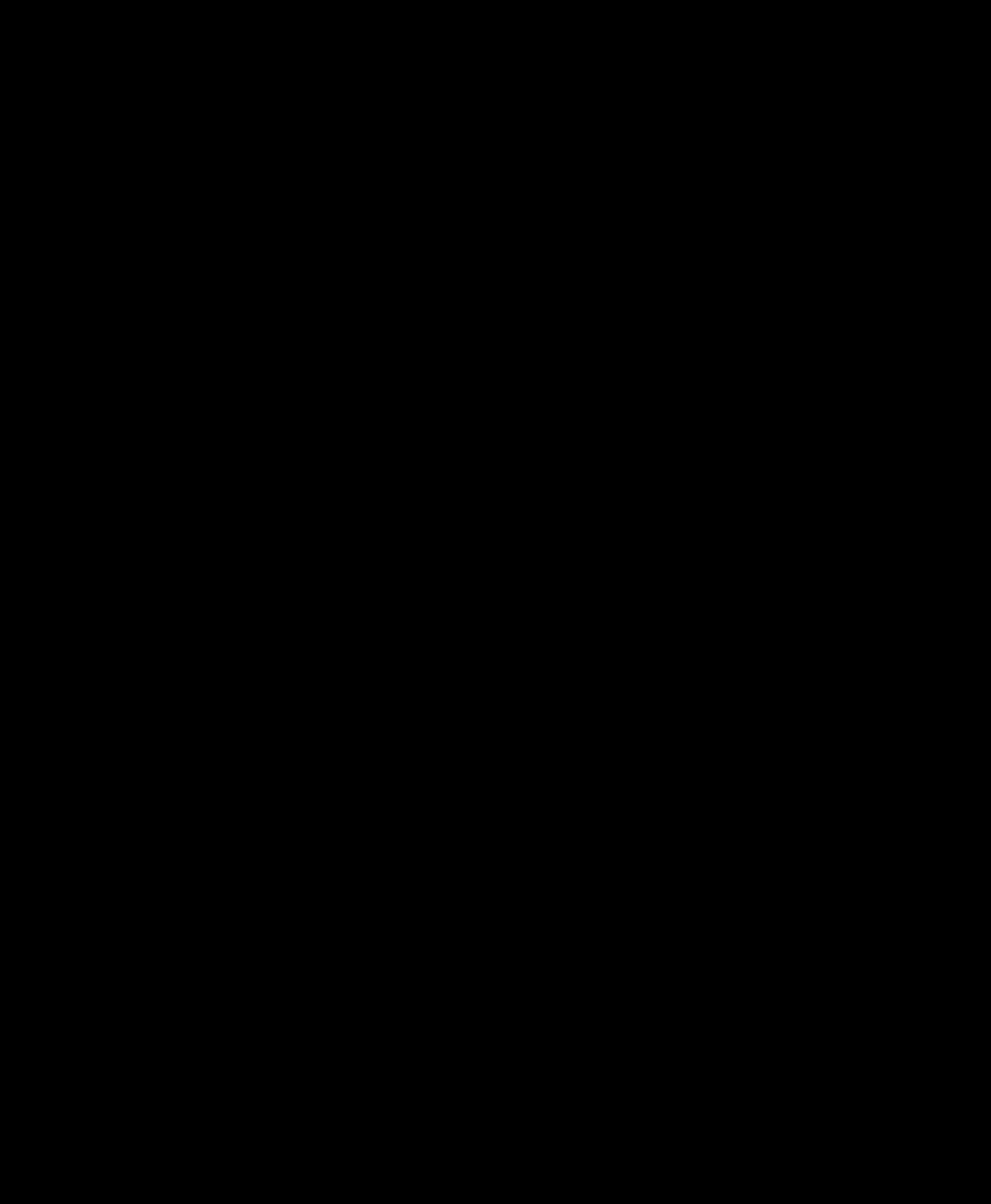
Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
539	2392.0 - 2393.0	41.8	1.4	15.9	.6	80.2	3.4	.908	N
540	2393.0 - 2394.0	16.2	1.0	6.1	.4	92.3	1.2	.900	N
541	2394.0 - 2395.0	12.4	1.2	4.6	.5	93.8	1.1	.897	N
542	2395.0 - 2396.0	10.5	1.0	3.9	.4	94.8	.9	.898	N
543	2396.0 - 2397.0	18.5	1.0	6.9	.4	91.4	1.3	.897	N
544	2397.0 - 2398.0	55.2	1.9	20.7	.8	74.6	3.9	.898	S
545	2398.0 - 2399.0	38.7	1.0	14.4	.4	82.6	2.6	.891	N
546	2399.0 - 2400.0	24.3	1.2	9.0	.5	88.5	2.0	.892	N
547	2400.0 - 2401.0	12.4	2.5	4.6	1.1	93.5	.8	.895	N
548	2401.0 - 2402.0	9.6	1.4	3.6	.6	95.0	.8	.899	N
549	2402.0 - 2403.0	11.0	1.2	4.2	.5	94.2	1.2	.904	N
550	2403.0 - 2404.0	10.2	1.0	3.8	.4	94.8	1.0	.897	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy



OIL SHALE ASSAY REPORT

PAGE 1 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

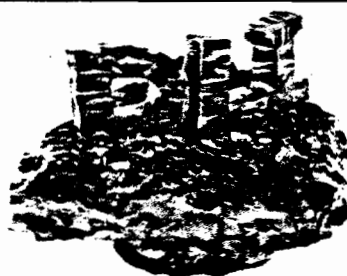
Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
551	2404.0 - 2405.0	16.5	1.7	6.2	.7	91.4	1.7	.901	N
552	2405.0 - 2406.0	12.5	1.0	4.7	.4	93.4	1.5	.900	N
553	2406.0 - 2407.0	8.7	1.0	3.3	.4	94.9	1.5	.900	N
554	2407.0 - 2408.0	7.6	1.0	2.9	.4	96.0	.7	.903	N
555	2408.0 - 2409.0	3.8a	.7	1.5	.3	97.7	.5		N
556	2409.0 - 2410.0	3.8a	.7	1.4	.3	97.7	.6		N
557	2410.0 - 2411.0	5.0a	.8	1.9	.4	97.1	.7		N
558	2411.0 - 2412.0	10.4	1.0	3.9	.4	94.7	1.0	.902	N
559	2412.0 - 2413.0	9.0	.7	3.4	.3	95.0	1.3	.906	N
560	2413.0 - 2414.0	13.8	1.0	5.2	.4	93.2	1.2	.894	N
561	2414.0 - 2415.0	9.4	1.2	3.5	.5	94.9	1.1	.898	N
562	2415.0 - 2416.0	8.4	1.2	3.1	.5	95.3	1.1	.900	N
563	2416.0 - 2417.0	12.2	1.2	4.6	.5	93.5	1.4	.905	N
564	2417.0 - 2418.0	16.6	.7	6.3	.3	91.2	2.2	.914	N
565	2418.0 - 2419.0	30.3	1.2	11.5	.5	84.9	3.1	.908	N
566	2419.0 - 2421.0	9.5	.7	3.6	.3	94.6	1.5	.907	N
567	2421.0 - 2422.0	8.5	1.2	3.2	.5	95.4	.9	.901	N
568	2422.0 - 2423.0	17.6	1.2	6.5	.5	91.4	1.6	.893	N
569	2423.0 - 2424.0	10.7	1.7	4.0	.7	94.0	1.3	.885	N
570	2424.0 - 2425.0	12.4	1.7	4.6	.7	93.3	1.4	.885	N
571	2425.0 - 2426.0	11.1	2.2	4.2	.9	93.6	1.3	.900	N
572	2426.0 - 2427.0	13.1	1.9	4.9	.8	93.0	1.3	.898	N
573	2427.0 - 2428.0	17.0	1.7	6.3	.7	91.3	1.7	.893	N
574	2428.0 - 2429.0	13.0	2.4	4.8	1.0	92.6	1.6	.888	N
575	2429.0 - 2430.0	16.3	2.9	6.1	1.2	90.6	2.1	.894	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920



Dickinson Laboratories, Inc.
COAL ANALYSTS

OIL SHALE ASSAY REPORT

PAGE 2 of 23

R.H. GODDE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD. #1-82

Project: U.S.G.S.

Cone Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
576	2430.0 - 2431.0	19.7	3.7	7.4	1.6	89.1	2.0	.893	N
577	2431.0 - 2432.0	23.4	2.2	8.8	.9	88.3	2.0	.895	N
578	2432.0 - 2433.0	9.7	1.7	3.7	.7	94.5	1.2	.901	N
579	2433.0 - 2434.0	10.5	1.2	3.9	.5	94.5	1.1	.897	N
580	2434.0 - 2435.0	11.4	2.0	4.3	.9	93.5	1.4	.902	N
581	2435.0 - 2436.0	37.7	1.9	14.1	.8	82.4	2.7	.896	N
582	2436.0 - 2437.0	44.5	1.9	16.7	.8	79.3	3.2	.902	S
583	2437.0 - 2438.0	23.7	1.7	8.9	.7	88.7	1.7	.898	N
584	2438.0 - 2439.0	27.1	1.4	10.1	.6	87.0	2.3	.898	N
585	2439.0 - 2440.0	20.0	1.4	7.5	.6	89.9	2.0	.899	N
586	2440.0 - 2441.0	34.1	1.7	13.0	.7	83.6	2.8	.911	N
587	2441.0 - 2442.0	37.5	2.2	14.4	.9	81.8	2.9	.923	N
588	2442.0 - 2443.0	14.8	3.1	5.6	1.3	91.6	1.5	.907	N
589	2443.0 - 2444.0	5.3	1.9	2.0	.8	96.2	1.0	.914	N
590	2444.0 - 2445.0	4.1a	2.9	1.6	1.2	96.7	.5		N
591	2445.0 - 2446.0	6.0	3.4	2.3	1.4	95.7	.6	.913	N
592	2446.0 - 2447.0	4.7a	1.9	1.8	.8	96.6	.8		N
593	2447.0 - 2448.0	7.5	1.6	2.8	.7	95.8	.7	.904	N
594	2448.0 - 2449.0	17.1	2.9	6.6	1.2	90.6	1.6	.922	N
595	2449.0 - 2450.0	20.9	3.1	8.1	1.3	89.0	1.7	.923	N
596	2450.0 - 2451.0	19.2	2.9	7.2	1.2	89.9	1.7	.904	N
597	2451.0 - 2452.0	12.2	3.8	4.5	1.6	92.6	1.3	.891	N
598	2452.0 - 2453.0	14.5	3.6	5.4	1.5	91.8	1.3	.886	N
599	2453.0 - 2454.0	29.7	2.2	11.1	.9	85.8	2.2	.900	N
600	2454.0 - 2455.0	21.5	3.1	8.0	1.3	88.5	2.2	.894	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 3 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
601	2455.0 - 2456.0	9.8	5.5	3.6	2.3	93.0	1.1	.883	N
602	2456.0 - 2457.0	12.8	4.1	4.8	1.7	92.3	1.2	.892	N
603	2457.0 - 2458.0	14.2	1.7	5.3	.7	92.5	1.5	.892	N
604	2458.0 - 2459.0	20.4	1.7	7.7	.7	89.3	2.3	.908	N
605	2459.0 - 2460.0	28.2	2.3	10.9	1.0	85.2	3.0	.924	N
606	2460.0 - 2461.0	37.1	3.1	14.3	1.3	81.3	3.1	.922	N
607	2461.0 - 2462.0	10.4	2.9	3.9	1.2	94.0	.9	.900	N
608	2462.0 - 2463.0	10.6	3.6	4.0	1.5	93.4	1.1	.899	N
609	2463.0 - 2464.0	10.9	2.9	4.1	1.2	93.3	1.4	.903	N
610	2464.0 - 2465.0	4.6a	2.2	1.8	.9	95.5	1.8		N
611	2465.0 - 2466.0	6.3	2.6	2.4	1.1	95.5	1.0	.908	N
612	2466.0 - 2467.0	8.3	3.1	3.2	1.3	94.6	1.0	.908	N
613	2467.0 - 2468.0	12.8	3.6	4.9	1.5	92.4	1.3	.905	N
614	2468.0 - 2469.0	19.6	3.6	7.3	1.5	89.6	1.6	.897	N
615	2469.0 - 2470.0	16.8	4.8	6.3	2.0	90.0	1.7	.897	N
616	2470.0 - 2471.0	16.6	2.5	6.2	1.1	91.7	1.0	.897	N
617	2471.0 - 2472.0	26.7	3.8	10.1	1.6	86.4	1.9	.906	N
618	2472.0 - 2473.0	20.5	3.4	7.7	1.4	89.5	1.4	.896	N
619	2473.0 - 2474.0	8.8	3.1	3.3	1.3	94.6	.8	.905	N
620	2474.0 - 2475.0	7.5	3.4	2.8	1.4	95.1	.7	.908	N
621	2475.0 - 2476.0	3.5a	3.1	1.3	1.3	96.5	.9		N
622	2476.0 - 2477.0	3.0a	4.1	1.2	1.7	96.5	.6		N
623	2477.0 - 2478.0	2.8a	4.7	1.1	2.0	96.3	.7		N
624	2478.0 - 2479.0	2.6a	4.6	1.0	1.9	96.3	.8		N
625	2479.0 - 2480.0	2.4a	4.6	.9	1.9	96.1	1.1		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 4 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
626	2480.0 - 2481.0	2.1a	4.3	.8	1.8	96.7	.7		N
627	2481.0 - 2482.0	3.1a	4.1	1.2	1.7	96.2	.9		N
628	2482.0 - 2483.0	3.8a	2.6	1.5	1.1	96.8	.7		N
629	2483.0 - 2484.0	8.3	3.1	3.1	1.3	94.5	1.1	.910	N
630	2484.0 - 2485.0	2.7a	3.6	1.1	1.5	96.9	.6		N
631	2485.0 - 2486.0	3.2a	3.6	1.2	1.5	96.7	.6		N
632	2486.0 - 2487.0	7.1	3.6	2.7	1.5	94.8	1.0	.914	N
633	2487.0 - 2488.0	8.1	3.6	3.1	1.5	94.6	.8	.914	N
634	2488.0 - 2489.0	19.1	4.3	7.3	1.8	89.4	1.5	.914	N
635	2489.0 - 2490.0	22.4	4.2	8.6	1.8	87.8	1.9	.916	N
636	2490.0 - 2491.0	16.6	3.4	6.3	1.4	91.0	1.3	.914	N
637	2491.0 - 2492.0	9.0	3.1	3.4	1.3	94.6	.7	.910	N
638	2492.0 - 2493.0	12.0	2.2	4.6	.9	92.7	1.8	.918	N
639	2493.0 - 2494.0	7.4	2.6	2.8	1.1	95.3	.8	.909	N
640	2494.0 - 2495.0	21.6	4.3	8.2	1.8	88.4	1.6	.907	N
641	2495.0 - 2496.0	20.2	4.1	7.6	1.7	89.2	1.5	.907	N
642	2496.0 - 2497.0	27.6	4.6	10.5	1.9	85.2	2.4	.911	N
643	2497.0 - 2498.0	24.6	5.0	9.5	2.1	86.5	2.0	.920	N
644	2498.0 - 2499.0	11.9	3.6	4.5	1.5	93.1	.9	.914	N
645	2499.0 - 2500.0	6.5	1.4	2.4	.6	96.3	.7	.898	N
646	2500.0 - 2501.0	3.5a	1.4	1.4	.6	97.5	.5		N
647	2501.0 - 2502.0	.8a	1.2	.3	.5	98.6	.6		N
648	2502.0 - 2503.0	1.8a	1.9	.7	.8	98.0	.5		N
649	2503.0 - 2504.0	1.5a	2.6	.6	1.1	97.6	.7		N
650	2504.0 - 2505.5	2.7a	4.6	1.0	1.9	96.5	.6		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 5 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
	2505.5 - 2506.0	>5.0		CORE LOSS - 0.5'					
651	2506.0 - 2507.0	9.3	4.8	3.5	2.0	93.5	1.0	.905	N
652	2507.0 - 2508.0	7.5	5.3	2.8	2.2	94.0	1.0	.907	N
653	2508.0 - 2509.0	21.8	4.8	8.3	2.0	87.7	2.0	.911	N
654	2509.0 - 2510.0	34.8	3.8	13.1	1.6	82.4	3.0	.898	N
655	2510.0 - 2511.0	22.0	5.5	8.3	2.3	86.9	2.5	.907	N
656	2511.0 - 2512.0	11.5	4.8	4.4	2.0	92.3	1.3	.911	N
657	2512.0 - 2513.0	7.3	3.1	2.7	1.3	95.1	.9	.898	N
658	2513.0 - 2514.0	2.8a	1.9	1.1	.8	97.5	.6		N
659	2514.0 - 2515.0	2.8a	1.9	1.1	.8	97.4	.7		N
660	2515.0 - 2516.0	4.7a	2.2	1.8	.9	96.5	.8		N
661	2516.0 - 2517.0	5.9	1.7	2.2	.7	96.3	.8	.905	N
662	2517.0 - 2518.0	4.4a	1.7	1.7	.7	96.9	.7		N
663	2518.0 - 2519.0	4.2a	1.4	1.6	.6	97.1	.7		N
664	2519.0 - 2520.0	5.1a	1.8	2.0	.8	96.6	.7		N
665	2520.0 - 2521.0	6.9	2.5	2.6	1.1	95.4	1.0	.892	N
666	2521.0 - 2522.0	10.0	4.3	3.7	1.8	92.3	2.2	.889	N
667	2522.0 - 2523.0	8.3	5.0	3.1	2.1	93.2	1.6	.888	N
668	2523.0 - 2524.0	6.2	4.6	2.3	1.9	94.2	1.6	.891	N
669	2524.0 - 2525.0	4.1a	5.5	1.6	2.3	95.4	.7		N
670	2525.0 - 2526.0	5.2a	5.3	2.0	2.2	94.4	1.4		N
671	2526.0 - 2527.0	5.8	5.5	2.2	2.3	93.7	1.8	.903	N
672	2527.0 - 2528.0	5.9	4.4	2.2	1.9	93.9	2.1	.892	N
673	2528.0 - 2529.0	4.8a	4.6	1.9	1.9	94.5	1.8		N
674	2529.0 - 2530.0	5.2a	5.5	2.0	2.3	94.7	1.0		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 6 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
675	2530.0 - 2531.0	3.8a	4.8	1.5	2.0	95.7	.8		N
676	2531.0 - 2532.0	4.6a	4.1	1.8	1.7	95.7	.9		N
677	2532.0 - 2533.0	4.0a	6.5	1.5	2.7	94.9	.9		N
678	2533.0 - 2534.0	5.0a	2.9	1.9	1.2	96.2	.7		N
679	2534.0 - 2535.0	3.6a	3.1	1.4	1.3	96.8	.5		N
680	2535.0 - 2536.0	3.2a	3.6	1.2	1.5	96.5	.8		N
681	2536.0 - 2537.0	3.3a	3.1	1.3	1.3	96.8	.7		N
682	2537.0 - 2538.0	3.9a	2.9	1.5	1.2	96.8	.5		N
683	2538.0 - 2539.0	3.3a	3.1	1.3	1.3	96.9	.5		N
684	2539.0 - 2540.0	3.7a	4.6	1.4	1.9	96.3	.4		N
685	2540.0 - 2541.0	1.8a	3.4	.7	1.4	97.2	.7		N
686	2541.0 - 2542.0	3.3a	4.1	1.3	1.7	96.5	.5		N
687	2542.0 - 2543.0	3.7a	4.3	1.4	1.8	96.1	.7		N
688	2543.0 - 2544.0	2.2a	4.4	.8	1.9	96.8	.5		N
689	2544.0 - 2545.0	4.5a	4.3	1.7	1.8	95.8	.7		N
690	2545.0 - 2546.0	5.1a	4.1	1.9	1.7	95.8	.6		N
691	2546.0 - 2547.0	5.8	4.6	2.2	1.9	95.3	.7	.888	N
692	2547.0 - 2548.0	4.9a	5.5	1.9	2.3	95.1	.7		N
693	2548.0 - 2549.0	4.1a	6.4	1.6	2.7	94.9	.9		N
694	2549.0 - 2550.0	4.6a	6.7	1.8	2.8	94.0	1.4		N
695	2550.0 - 2551.0	3.5a	7.2	1.3	3.0	94.7	1.0		N
696	2551.0 - 2552.0	3.4a	7.2	1.3	3.0	94.8	.9		N
697	2552.0 - 2553.0	5.6	7.2	2.2	3.0	93.5	1.4	.913	N
698	2553.0 - 2554.0	9.6	6.0	3.7	2.5	92.8	1.0	.917	N
699	2554.0 - 2555.0	10.9	2.4	4.1	1.0	93.9	1.0	.907	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 7 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
700	2555.0 - 2556.0	4.0a	2.2	1.6	.9	97.0	.6		N
701	2556.0 - 2557.0	4.6a	2.4	1.8	1.0	96.7	.5		N
702	2557.0 - 2558.0	3.2a	2.4	1.2	1.0	97.4	.4		N
703	2558.0 - 2559.0	2.3a	2.6	.9	1.1	97.3	.7		N
704	2559.0 - 2560.0	1.5a	2.9	.6	1.2	97.8	.4		N
705	2560.0 - 2561.0	1.6a	2.9	.6	1.2	97.7	.5		N
706	2561.0 - 2562.0	2.1a	2.9	.8	1.2	97.4	.6		N
707	2562.0 - 2563.0	2.3a	2.9	.9	1.2	97.4	.5		N
708	2563.0 - 2564.0	21.0	3.6	8.0	1.5	88.7	1.8	.914	N
709	2564.0 - 2565.0	11.7	5.5	4.4	2.3	92.2	1.1	.898	N
710	2565.0 - 2566.0	11.9	5.5	4.4	2.3	91.9	1.4	.885	N
711	2566.0 - 2567.0	12.3	6.0	4.5	2.5	91.9	1.1	.882	N
712	2567.0 - 2568.0	13.7	4.8	5.1	2.0	91.7	1.2	.889	N
713	2568.0 - 2569.0	9.0	3.6	3.4	1.5	93.9	1.2	.907	N
714	2569.0 - 2570.0	7.5	3.8	2.9	1.6	94.6	.9	.908	N
715	2570.0 - 2571.0	9.8	5.0	3.7	2.1	92.9	1.3	.907	N
716	2571.0 - 2572.0	5.4	4.1	2.1	1.7	95.4	.8	.912	N
717	2572.0 - 2573.0	4.0a	4.0	1.5	1.7	95.9	.9		N
718	2573.0 - 2574.0	7.4	4.3	2.8	1.8	94.5	.9	.918	N
719	2574.0 - 2575.0	9.2	4.8	3.5	2.0	93.5	1.0	.914	N
720	2575.0 - 2576.0	5.9	4.3	2.3	1.8	94.9	1.0	.912	N
721	2576.0 - 2577.0	5.8	4.8	2.2	2.0	94.6	1.2	.908	N
722	2577.0 - 2578.0	6.6	4.8	2.5	2.0	94.6	.9	.913	N
723	2578.0 - 2579.0	6.0	5.0	2.3	2.1	94.5	1.1	.917	N
724	2579.0 - 2580.0	5.4	4.8	2.1	2.0	95.1	.8	.918	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 8 of 23

R.H. GODDE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Cone Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
725	2580.0 - 2581.0	9.5	5.0	3.6	2.1	93.0	1.3	.915	N
726	2581.0 - 2582.0	15.7	5.0	6.0	2.1	90.5	1.5	.910	N
727	2582.0 - 2583.0	15.4	3.1	5.9	1.3	91.4	1.5	.908	N
728	2583.0 - 2584.0	23.8	3.2	8.9	1.4	87.9	1.8	.899	N
729	2584.0 - 2585.0	29.1	2.9	10.9	1.2	85.9	2.0	.899	N
730	2585.0 - 2586.0	14.1	2.2	5.3	.9	92.4	1.4	.900	N
731	2586.0 - 2587.0	17.4	5.0	6.5	2.1	90.0	1.4	.897	N
732	2587.0 - 2588.0	17.9	5.5	6.7	2.3	89.7	1.3	.897	N
733	2588.0 - 2589.0	15.0	6.0	5.9	2.5	90.0	1.6	.892	N
734	2589.0 - 2590.0	12.0	6.5	4.8	2.7	91.0	1.5	.895	N
735	2590.0 - 2591.0	14.5	5.5	5.5	2.3	90.3	1.9	.909	N
736	2591.0 - 2592.0	29.1	4.8	11.0	2.0	84.5	2.5	.906	N
737	2592.0 - 2593.0	20.1	5.4	7.6	2.3	88.2	1.9	.909	N
738	2593.0 - 2594.0	10.5	6.0	4.0	2.5	92.6	1.0	.906	N
739	2594.0 - 2595.0	13.6	5.8	5.2	2.4	91.2	1.2	.912	N
740	2595.0 - 2596.0	13.8	5.0	5.3	2.4	90.9	1.4	.916	N
741	2596.0 - 2597.0	10.3	3.1	3.9	1.3	93.9	.9	.907	N
742	2597.0 - 2598.0	1.0a	3.1	.4	1.3	97.8	.5		N
743	2598.0 - 2599.0	3.5a	2.9	1.4	1.2	96.8	.7		N
744	2599.0 - 2600.0	4.3a	2.6	1.7	1.1	96.6	.7		N
745	2600.0 - 2601.0	10.4	2.6	3.9	1.1	93.9	1.1	.897	N
746	2601.0 - 2602.0	7.2	4.1	2.7	1.7	95.0	.6	.893	N
747	2602.0 - 2603.0	8.7	4.1	3.3	1.7	94.4	.7	.893	N
748	2603.0 - 2604.0	8.5	3.8	3.2	1.6	94.4	.8	.890	N
749	2604.0 - 2605.0	8.0	2.2	3.0	.9	95.5	.6	.889	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 9 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
750	2605.0 - 2606.0	6.8	1.4	2.5	.6	96.3	.6	.887	N
751	2606.0 - 2607.0	5.4	2.2	2.0	.9	96.3	.8	.896	N
752	2607.0 - 2608.0	9.9	2.6	3.7	1.1	94.3	.9	.890	N
753	2608.0 - 2609.0	10.3	2.9	3.9	1.2	93.8	1.2	.893	N
754	2609.0 - 2610.0	12.0	2.2	4.5	.9	93.6	1.0	.892	N
755	2610.0 - 2611.0	11.1	2.9	4.1	1.2	93.8	.9	.892	N
756	2611.0 - 2612.0	16.7	2.9	6.2	1.2	90.9	1.7	.897	N
757	2612.0 - 2613.0	12.0	3.8	4.5	1.6	92.7	1.2	.894	N
758	2613.0 - 2614.0	13.4	4.1	5.0	1.7	92.1	1.2	.893	N
759	2614.0 - 2615.0	10.6	4.2	3.9	1.8	93.4	.9	.890	N
760	2615.0 - 2616.0	7.0	2.6	2.6	1.1	95.5	.8	.898	N
761	2616.0 - 2617.0	4.3a	2.5	1.7	1.1	96.3	1.0		N
762	2617.0 - 2618.0	4.5a	1.9	1.7	.8	97.0	.5		N
763	2618.0 - 2619.0	7.9	2.6	2.9	1.1	95.1	.9	.896	N
764	2619.0 - 2620.0	12.4	3.4	4.7	1.4	92.8	1.1	.901	N
765	2620.0 - 2621.0	6.6	3.4	2.5	1.4	95.4	.7	.897	N
766	2621.0 - 2622.0	5.7	2.9	2.1	1.2	95.9	.8	.893	N
767	2622.0 - 2623.0	7.8	3.1	2.9	1.3	94.9	.9	.896	N
768	2623.0 - 2624.0	3.6a	1.7	1.4	.7	97.4	.5		N
769	2624.0 - 2625.0	2.1a	1.7	.8	.7	97.9	.6		N
770	2625.0 - 2626.0	.7a	1.9	.3	.8	98.5	.4		N
771	2626.0 - 2627.0	1.4a	2.2	.6	.9	98.2	.4		N
772	2627.0 - 2628.0	1.5a	2.6	.6	1.1	97.9	.4		N
773	2628.0 - 2629.0	6.5	2.4	2.4	1.0	96.0	.6	.894	N
774	2629.0 - 2630.0	7.2	2.9	2.7	1.2	95.0	1.1	.890	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 10 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Cone Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
775	2630.0 - 2631.0	6.2	2.2	2.3	.9	95.8	1.0	.892	N
776	2631.0 - 2632.0	7.1	3.8	2.6	1.6	95.0	.8	.893	N
777	2632.0 - 2633.0	6.3	3.8	2.3	1.6	95.0	1.1	.884	N
778	2633.0 - 2634.0	7.7	5.5	2.9	2.3	94.0	.8	.899	N
779	2634.0 - 2635.0	2.1a	6.0	.8	2.5	96.1	.6		N
780	2635.0 - 2636.0	1.4a	1.7	.5	.7	98.2	.6		N
781	2636.0 - 2637.0	4.0a	1.7	1.5	.7	97.1	.7		N
782	2637.0 - 2638.0	6.5	1.7	2.4	.7	96.3	.6	.899	N
783	2638.0 - 2639.0	4.8a	1.7	1.9	.7	96.5	1.0		N
784	2639.0 - 2640.0	6.0	3.1	2.2	1.3	95.7	.8	.893	N
785	2640.0 - 2641.0	8.7	2.9	3.3	1.2	94.7	.9	.891	N
786	2641.0 - 2642.0	3.1a	1.4	1.2	.6	97.7	.5		N
787	2642.0 - 2643.0	2.3a	1.4	.9	.6	98.0	.5		N
788	2643.0 - 2644.0	1.8a	1.7	.7	.7	98.1	.5		N
789	2644.0 - 2645.0	.9a	1.4	.3	.6	98.5	.6		N
790	2645.0 - 2646.0	.9a	1.2	.3	.5	98.7	.5		N
791	2646.0 - 2647.0	3.4a	1.4	1.3	.6	97.2	.9		N
792	2647.0 - 2648.0	3.0a	1.4	1.2	.6	97.6	.7		N
793	2648.0 - 2649.0	9.6	1.9	3.6	.8	94.5	1.2	.884	N
794	2649.0 - 2650.0	8.6	3.4	3.2	1.4	94.5	.9	.886	N
795	2650.0 - 2651.0	6.5	3.4	2.4	1.4	95.3	.9	.890	N
796	2651.0 - 2652.0	8.2	4.8	3.1	2.0	94.2	.8	.888	N
797	2652.0 - 2653.0	4.4a	1.9	1.7	.8	97.0	.5		N
798	2653.0 - 2654.0	2.3a	1.6	.9	.7	97.7	.8		N
799	2654.0 - 2655.0	2.0a	1.9	.8	.8	98.1	.3		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 11 of 23

R.H. GODDE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
800	2655.0 - 2656.0	2.0a	1.7	.8	.7	98.0	.5		N
801	2656.0 - 2657.0	1.5a	1.9	.6	.8	97.6	1.0		N
802	2657.0 - 2658.0	3.3a	3.8	1.3	1.6	96.6	.5		N
803	2658.0 - 2659.0	7.3	1.9	2.7	.8	95.8	.7	.892	N
804	2659.0 - 2660.0	5.1a	1.9	1.9	.8	96.7	.6		N
805	2660.0 - 2661.0	7.9	2.9	2.9	1.2	94.3	1.6	.888	N
806	2661.0 - 2662.0	6.5	3.6	2.4	1.5	95.1	1.0	.889	N
807	2662.0 - 2663.0	1.6a	5.0	.6	2.1	96.6	.7		N
808	2663.0 - 2664.0	3.1a	6.2	1.2	2.6	95.1	1.1		N
809	2664.0 - 2665.0	.5a	2.5	.2	1.1	98.1	.7		N
810	2665.0 - 2666.0	.6a	2.4	.2	1.0	98.3	.5		N
811	2666.0 - 2667.0	.8a	2.4	.3	1.0	98.1	.6		N
812	2667.0 - 2668.0	.0t	2.9	.0	1.2	98.1	.7		N
813	2668.0 - 2669.0	.8a	2.6	.3	1.1	98.1	.5		N
814	2669.0 - 2670.0	4.5a	3.6	1.7	1.5	96.0	.8		N
815	2670.0 - 2671.0	11.5	5.8	4.3	2.4	91.9	1.4	.894	N
816	2671.0 - 2672.0	6.6	6.0	2.4	2.5	94.3	.8	.890	N
817	2672.0 - 2673.0	5.2a	5.5	2.0	2.3	94.9	.8		N
818	2673.0 - 2674.0	1.9a	5.8	.7	2.4	96.2	.7		N
819	2674.0 - 2675.0	1.3a	4.8	.5	2.0	96.7	.8		N
820	2675.0 - 2676.0	3.6a	3.1	1.4	1.3	96.6	.7		N
821	2676.0 - 2677.0	4.4a	1.8	1.7	.8	96.5	1.1		N
822	2677.0 - 2678.0	10.6	2.2	4.0	.9	93.9	1.2	.899	N
823	2678.0 - 2679.0	8.4	2.4	3.1	1.0	94.8	1.1	.897	N
824	2679.0 - 2680.0	3.6a	1.9	1.4	.8	97.1	.7		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

t = Trace of Oil

OIL SHALE ASSAY REPORT

PAGE 12 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES: AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
825	2680.0 - 2681.0	1.7a	2.6	.6	1.1	97.8	.5		N
826	2681.0 - 2682.0	3.5a	2.6	1.4	1.1	96.9	.7		N
827	2682.0 - 2683.0	4.4a	3.6	1.7	1.5	96.1	.7		N
828	2683.0 - 2684.0	4.6a	5.8	1.8	2.4	95.2	.6		N
829	2684.0 - 2685.0	3.9a	3.8	1.5	1.6	96.2	.7		N
830	2685.0 - 2686.0	4.4a	6.2	1.7	2.6	95.2	.5		N
831	2686.0 - 2687.0	6.3	4.7	2.4	2.0	95.0	.7	.896	N
832	2687.0 - 2688.0	12.8	4.1	4.8	1.7	92.4	1.1	.894	N
833	2688.0 - 2689.0	23.5	5.3	8.7	2.2	86.7	2.4	.891	N
834	2689.0 - 2690.0	13.8	4.6	5.1	1.9	91.4	1.6	.893	N
835	2690.0 - 2691.0	1.7a	1.2	.7	.5	98.0	.8		N
836	2691.0 - 2692.0	.3a	1.3	.1	.6	98.8	.5		N
837	2692.0 - 2693.0	1.8a	3.1	.7	1.3	97.2	.8		N
838	2693.0 - 2694.0	1.8a	4.3	.7	1.8	96.8	.7		N
839	2694.0 - 2695.0	1.9a	4.9	.7	2.1	96.4	.8		N
840	2695.0 - 2696.0	22.3	5.0	8.3	2.1	87.3	2.3	.893	N
841	2696.0 - 2697.0	28.4	4.1	10.6	1.7	85.2	2.5	.892	N
842	2697.0 - 2698.0	16.7	4.1	6.2	1.7	90.5	1.6	.896	N
843	2698.0 - 2699.0	6.3	1.4	2.4	.6	96.2	.9	.893	N
844	2699.0 - 2700.0	3.2a	1.7	1.2	.7	97.3	.8		N
845	2700.0 - 2701.0	1.7a	1.4	.6	.6	98.0	.8		N
846	2701.0 - 2702.0	.8a	1.6	.3	.7	98.7	.4		N
847	2702.0 - 2703.0	.8a	1.9	.3	.8	98.4	.5		N
848	2703.0 - 2704.0	1.0a	1.9	.4	.8	98.2	.6		N
849	2704.0 - 2705.0	.9a	2.9	.3	1.2	97.9	.6		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 13 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Cone Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
850	2705.0 - 2706.0	3.9a	3.4	1.5	1.4	96.3	.8		N
851	2706.0 - 2707.0	2.0a	4.3	.8	1.8	96.9	.5		N
852	2707.0 - 2708.0	17.6	6.0	6.6	2.5	89.3	1.6	.897	N
853	2708.0 - 2709.0	28.4	5.3	10.7	2.2	84.4	2.7	.900	N
854	2709.0 - 2710.0	13.9	3.8	5.2	1.6	91.6	1.6	.900	N
855	2710.0 - 2711.0	2.9a	3.4	1.1	1.4	96.9	.6		N
856	2711.0 - 2712.0	4.6a	3.4	1.8	1.4	96.3	.6		N
857	2712.0 - 2713.0	3.5a	4.6	1.4	1.9	96.0	.7		N
858	2713.0 - 2714.0	6.4	4.8	2.4	2.0	94.7	.9	.899	N
859	2714.0 - 2715.0	19.9	4.8	7.5	2.0	88.5	2.0	.903	N
860	2715.0 - 2716.0	26.1	4.3	9.9	1.8	85.8	2.6	.904	N
861	2716.0 - 2717.0	19.6	5.8	7.4	2.4	87.8	2.4	.909	N
862	2717.0 - 2718.0	17.5	5.8	6.6	2.4	88.9	2.1	.909	N
863	2718.0 - 2719.0	19.8	4.6	7.5	1.9	88.3	2.3	.907	N
864	2719.0 - 2720.0	11.4	2.6	4.3	1.1	93.4	1.3	.891	N
865	2720.0 - 2721.0	4.8a	2.6	1.8	1.1	96.3	.8		N
866	2721.0 - 2722.0	11.8	4.8	4.4	2.0	91.9	1.7	.904	N
867	2722.0 - 2723.0	11.1	7.9	4.2	3.3	91.2	1.4	.895	N
868	2723.0 - 2724.0	10.1	4.3	3.8	1.8	93.4	1.0	.901	N
869	2724.0 - 2725.0	2.7a	4.8	1.0	2.0	96.2	.8		N
870	2725.0 - 2726.0	2.6a	4.8	1.0	2.0	96.3	.7		N
871	2726.0 - 2727.0	5.4	2.6	2.0	1.1	96.0	.9	.903	N
872	2727.0 - 2728.0	16.4	3.5	6.2	1.5	90.6	1.8	.904	N
873	2728.0 - 2729.0	18.5	3.4	7.0	1.4	89.8	1.8	.902	N
874	2729.0 - 2730.0	15.2	5.6	5.7	2.4	90.2	1.7	.901	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 14 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
875	2730.0 - 2731.0	13.2	3.6	4.9	1.5	91.9	1.7	.893	N
876	2731.0 - 2732.0	13.7	4.8	5.1	2.0	91.0	1.9	.899	N
877	2732.0 - 2733.0	15.8	4.8	5.9	2.0	90.5	1.6	.900	N
878	2733.0 - 2734.0	15.9	4.8	6.0	2.0	90.6	1.4	.902	N
879	2734.0 - 2735.0	16.7	5.5	6.3	2.3	89.9	1.5	.901	N
880	2735.0 - 2736.0	13.1	2.2	4.9	.9	92.7	1.5	.894	N
881	2736.0 - 2737.0	10.6	2.9	3.9	1.2	93.8	1.1	.884	N
882	2737.0 - 2738.0	9.3	1.9	3.5	.8	94.8	.9	.888	N
883	2738.0 - 2739.0	7.3	1.4	2.8	.6	95.9	.8	.900	N
884	2739.0 - 2740.0	10.1	1.7	3.8	.7	94.6	.9	.889	N
885	2740.0 - 2741.0	14.0	2.4	5.2	1.0	92.7	1.1	.892	N
886	2741.0 - 2742.0	12.1	1.2	4.5	.5	94.1	.9	.886	N
887	2742.0 - 2743.0	11.5	1.9	4.3	.8	93.8	1.1	.894	N
888	2743.0 - 2744.0	12.8	2.9	4.8	1.2	92.9	1.1	.900	N
889	2744.0 - 2745.0	8.4	4.3	3.2	1.8	94.0	1.1	.899	N
890	2745.0 - 2746.0	9.4	3.8	3.5	1.6	93.9	1.0	.892	N
891	2746.0 - 2747.0	11.3	4.9	4.2	2.1	92.7	1.0	.894	N
892	2747.0 - 2748.0	13.8	5.0	5.2	2.1	91.4	1.3	.899	N
893	2748.0 - 2749.0	15.2	6.0	5.8	2.5	90.0	1.7	.906	N
894	2749.0 - 2750.0	22.3	5.0	8.4	2.1	86.9	2.6	.900	N
895	2750.0 - 2751.0	24.1	3.5	9.0	1.5	87.5	2.0	.896	N
896	2751.0 - 2752.0	17.8	5.0	6.7	2.1	89.8	1.4	.897	N
897	2752.0 - 2753.0	11.3	1.7	4.2	.7	94.2	.9	.897	N
898	2753.0 - 2754.0	10.5	3.4	4.0	1.4	93.8	.8	.903	N
899	2754.0 - 2755.0	12.4	5.3	4.6	2.2	92.1	1.1	.894	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 15 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
900	2755.0 - 2756.0	11.9	5.8	4.5	2.4	92.0	1.2	.896	N
901	2756.0 - 2757.0	12.1	5.5	4.5	2.3	91.1	2.1	.888	N
902	2757.0 - 2758.0	16.0	4.1	5.9	1.7	91.3	1.1	.891	N
903	2758.0 - 2759.0	15.9	4.8	5.9	2.0	90.9	1.2	.897	N
904	2759.0 - 2760.0	13.1	5.3	4.9	2.2	91.9	1.0	.889	N
905	2760.0 - 2761.0	7.9	1.7	2.9	.7	95.9	.5	.870	N
906	2761.0 - 2762.0	9.7	1.7	3.5	.7	95.3	.5	.872	N
907	2762.0 - 2763.0	13.0	4.3	4.8	1.8	92.4	1.0	.890	N
908	2763.0 - 2764.0	15.8	6.5	5.9	2.7	90.2	1.2	.891	N
909	2764.0 - 2765.0	9.5	1.9	3.5	.8	95.0	.7	.884	N
910	2765.0 - 2766.0	15.8a	2.6	6.1	1.1	91.4	1.4		N
911	2766.0 - 2767.0	30.4	3.8	11.4	1.6	84.7	2.3	.899	N
912	2767.0 - 2768.0	36.7	5.0	13.8	2.1	81.4	2.7	.899	N
913	2768.0 - 2769.0	10.6	2.4	4.0	1.0	94.0	1.0	.893	N
914	2769.0 - 2770.0	4.4a	1.9	1.7	.8	97.0	.5		N
915	2770.0 - 2771.0	5.5	1.9	2.0	.8	96.7	.5	.879	N
916	2771.0 - 2772.0	11.7	3.6	4.3	1.5	93.1	1.1	.887	N
917	2772.0 - 2773.0	15.0	5.3	5.6	2.2	90.9	1.3	.895	N
918	2773.0 - 2774.0	11.4	6.2	4.2	2.6	92.2	1.0	.895	N
919	2774.0 - 2775.0	6.5	5.0	2.4	2.1	94.7	.8	.890	N
920	2775.0 - 2776.0	2.1a	1.3	.8	.6	98.4	.3		N
921	2776.0 - 2777.0	1.6a	1.4	.6	.6	98.5	.3		N
922	2777.0 - 2778.0	1.5a	1.7	.6	.7	98.2	.5		N
923	2778.0 - 2779.0	1.7a	1.9	.7	.8	98.1	.5		N
924	2779.0 - 2780.0	3.9a	1.9	1.5	.8	97.2	.5		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 16 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
925	2780.0 - 2781.0	17.1	3.4	6.5	1.4	90.7	1.5	.902	N
926	2781.0 - 2782.0	20.7	4.1	7.7	1.7	89.4	1.2	.891	N
927	2782.0 - 2783.0	8.8	1.9	3.3	.8	95.2	.8	.889	N
928	2783.0 - 2784.0	3.8a	1.4	1.4	.6	97.4	.6		N
929	2784.0 - 2785.0	8.0	1.4	3.0	.6	95.6	.8	.899	N
930	2785.0 - 2786.0	4.9a	1.2	1.9	.5	97.0	.6		N
931	2786.0 - 2787.0	6.0	1.4	2.2	.6	96.7	.5	.875	N
932	2787.0 - 2788.0	14.0	4.6	5.2	1.9	91.8	1.1	.897	N
933	2788.0 - 2789.0	14.6	4.0	5.5	1.7	91.5	1.4	.892	N
934	2789.0 - 2790.0	7.2	1.4	2.6	.6	96.3	.5	.882	N
935	2790.0 - 2791.0	1.4a	1.4	.5	.6	98.4	.5		N
936	2791.0 - 2792.0	5.1a	1.2	2.0	.5	96.9	.6		N
937	2792.0 - 2793.0	27.8	3.1	10.6	1.3	86.1	2.0	.910	N
938	2793.0 - 2794.0	26.8	5.0	10.1	2.1	85.5	2.3	.907	N
939	2794.0 - 2795.0	19.2	4.8	7.2	2.0	89.2	1.6	.896	N
940	2795.0 - 2796.0	10.7	6.2	4.0	2.6	92.2	1.2	.899	N
941	2796.0 - 2797.0	13.9	3.4	5.2	1.4	92.2	1.2	.898	N
942	2797.0 - 2798.0	4.4a	1.4	1.7	.6	97.1	.6		N
943	2798.0 - 2799.0	5.0a	1.4	1.9	.6	97.0	.5		N
944	2799.0 - 2800.0	13.1	2.0	5.0	.9	93.1	1.1	.905	N
945	2800.0 - 2801.0	17.1	4.1	6.5	1.7	90.3	1.5	.911	N
946	2801.0 - 2802.0	10.5	6.0	4.0	2.5	92.3	1.2	.906	N
947	2802.0 - 2803.0	8.2	4.6	3.1	1.9	94.2	.8	.907	N
948	2803.0 - 2804.0	7.5	4.6	2.8	1.9	94.7	.6	.907	N
949	2804.0 - 2805.0	7.2	4.1	2.7	1.7	94.4	1.2	.912	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 17 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
950	2805.0 - 2806.0	7.1	4.6	2.7	1.9	94.5	.9	.907	N
951	2806.0 - 2807.0	5.4	5.0	2.0	2.1	95.4	.5	.892	N
952	2807.0 - 2808.0	5.8	5.5	2.2	2.3	94.5	1.1	.889	N
953	2808.0 - 2809.0	5.4	6.5	2.0	2.7	94.6	.7	.886	N
954	2809.0 - 2810.0	6.4	4.6	2.4	1.9	95.0	.8	.878	N
955	2810.0 - 2811.0	6.4	5.0	2.4	2.1	94.9	.6	.891	N
956	2811.0 - 2812.0	5.7a	2.4	2.2	1.0	96.3	.5		N
957	2812.0 - 2813.0	7.9	2.6	2.9	1.1	95.3	.7	.879	N
958	2813.0 - 2814.0	8.0	3.4	2.9	1.4	95.1	.6	.880	N
959	2814.0 - 2815.0	5.7	5.0	2.1	2.1	95.2	.6	.887	N
960	2815.0 - 2816.0	5.6	5.0	2.1	2.1	95.2	.6	.888	N
961	2816.0 - 2817.0	3.8a	5.5	1.4	2.3	95.8	.5		N
962	2817.0 - 2818.0	4.0a	5.3	1.5	2.2	95.6	.7		N
963	2818.0 - 2819.0	4.0a	5.5	1.5	2.3	95.7	.5		N
964	2819.0 - 2820.0	2.9a	5.0	1.1	2.1	96.2	.6		N
965	2820.0 - 2821.0	2.9a	5.5	1.1	2.3	95.9	.7		N
966	2821.0 - 2822.0	2.6a	5.8	1.0	2.4	96.0	.6		N
967	2822.0 - 2823.0	2.5a	6.0	1.0	2.5	95.8	.7		N
968	2823.0 - 2824.0	.9a	7.7	.4	3.2	95.7	.8		N
969	2824.0 - 2825.0	2.1a	7.0	.8	2.9	95.5	.8		N
970	2825.0 - 2826.0	3.0a	7.9	1.1	3.3	94.7	.9		N
971	2826.0 - 2827.0	2.7a	8.4	1.0	3.5	94.2	1.3		N
972	2827.0 - 2828.0	1.7a	8.6	.7	3.6	94.7	1.0		N
973	2828.0 - 2829.0	4.0a	8.4	1.6	3.5	93.6	1.4		N
974	2829.0 - 2830.0	2.8a	7.9	1.1	3.3	95.1	.5		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 18 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
975	2830.0 - 2831.0	2.7a	8.4	1.0	3.5	94.7	.8		N
976	2831.0 - 2832.0	2.0a	8.1	.8	3.4	95.0	.8		N
977	2832.0 - 2833.0	2.9a	7.2	1.1	3.0	94.4	1.5		N
978	2833.0 - 2834.0	6.6	5.8	2.5	2.4	94.2	.9	.896	N
979	2834.0 - 2835.0	12.7	6.0	4.8	2.5	91.3	1.4	.905	N
980	2835.0 - 2836.0	9.8	2.6	3.7	1.1	94.1	1.1	.903	N
981	2836.0 - 2837.0	7.6	1.9	2.8	.8	95.6	.8	.897	N
982	2837.0 - 2838.0	20.1	2.6	7.6	1.1	89.7	1.6	.903	N
983	2838.0 - 2839.0	32.9	3.8	12.4	1.6	83.3	2.7	.905	N
984	2839.0 - 2840.0	30.3	4.6	11.5	1.9	83.9	2.7	.911	N
985	2840.0 - 2841.0	25.9	4.8	9.8	2.0	85.9	2.3	.907	N
986	2841.0 - 2842.0	22.1	2.6	8.4	1.1	88.6	1.9	.905	N
987	2842.0 - 2843.0	7.5	2.4	2.8	1.0	95.3	.9	.885	N
988	2843.0 - 2844.0	6.8	2.2	2.5	.9	95.8	.8	.880	N
989	2844.0 - 2845.0	6.1	2.6	2.3	1.1	95.7	.9	.882	N
990	2845.0 - 2846.0	12.2	5.5	4.6	2.3	91.0	2.1	.897	N
991	2846.0 - 2847.0	12.6	5.8	4.7	2.4	91.5	1.4	.897	N
992	2847.0 - 2848.0	25.4	4.3	9.6	1.8	86.1	2.5	.905	N
993	2848.0 - 2849.0	3.9a	2.6	1.5	1.1	96.3	1.1		N
994	2849.0 - 2850.0	.0t	4.8	.0	2.0	97.4	.6		N
995	2850.0 - 2851.0	.3a	6.0	.1	2.5	96.6	.8		N
996	2851.0 - 2852.0	3.0a	5.8	1.2	2.4	95.6	.9		N
997	2852.0 - 2853.0	3.9a	5.3	1.5	2.2	94.9	1.4		N
998	2853.0 - 2854.0	5.1a	4.8	2.0	2.0	95.1	.9		N
999	2854.0 - 2855.0	10.4	5.8	3.9	2.4	92.4	1.3	.897	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

t = Trace of Oil

OIL SHALE ASSAY REPORT

PAGE 19 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1000	2855.0 - 2856.0	11.1	6.2	4.2	2.6	91.9	1.3	.910	N
1001	2856.0 - 2857.0	16.1	4.6	6.1	1.9	90.9	1.1	.903	N
1002	2857.0 - 2858.0	10.3	3.4	3.8	1.4	93.9	.9	.887	N
1003	2858.0 - 2859.0	13.8	3.4	5.1	1.4	92.3	1.2	.888	N
1004	2859.0 - 2860.0	12.7	4.6	4.7	1.9	92.1	1.3	.892	N
1005	2860.0 - 2861.0	10.0	4.6	3.7	1.9	93.4	1.0	.883	N
1006	2861.0 - 2862.0	9.0	3.6	3.4	1.5	94.6	.6	.888	N
1007	2862.0 - 2863.0	5.5	3.4	2.0	1.4	96.1	.5	.884	N
1008	2863.0 - 2864.0	4.3a	3.6	1.7	1.5	96.4	.4		N
1009	2864.0 - 2865.0	12.6	3.4	4.8	1.4	91.7	2.1	.912	N
1010	2865.0 - 2866.0	12.8	6.7	4.8	2.8	91.2	1.2	.902	N
1011	2866.0 - 2867.0	9.0	4.1	3.3	1.7	94.1	.9	.883	N
1012	2867.0 - 2868.0	6.5	4.6	2.4	1.9	95.2	.5	.880	N
1013	2868.0 - 2869.0	5.2a	4.8	2.0	2.0	95.2	.8		N
1014	2869.0 - 2870.0	5.7	5.0	2.1	2.1	94.7	1.1	.881	N
1015	2870.0 - 2871.0	8.4	2.6	3.1	1.1	94.8	1.0	.889	N
1016	2871.0 - 2872.0	9.9	1.7	3.6	.7	94.7	1.0	.882	N
1017	2872.0 - 2873.0	8.1	3.1	3.0	1.3	94.7	1.0	.886	N
1018	2873.0 - 2874.0	12.2	5.5	4.5	2.3	91.5	1.7	.890	N
1019	2874.0 - 2875.0	13.0	3.4	4.8	1.4	92.8	1.0	.882	N
1020	2875.0 - 2876.0	10.4	3.6	3.9	1.5	93.7	1.0	.885	N
1021	2876.0 - 2877.0	14.4	5.3	5.4	2.2	91.3	1.1	.893	N
1022	2877.0 - 2878.0	12.8	1.2	4.7	.5	93.9	1.0	.872	N
1023	2878.0 - 2879.0	7.0	1.0	2.6	.4	95.8	1.3	.878	N
1024	2879.0 - 2880.0	12.3	3.1	4.6	1.3	92.8	1.3	.895	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 20 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1025	2880.0 - 2881.0	18.6	3.8	7.0	1.6	90.0	1.4	.907	N
1026	2881.0 - 2882.0	16.7	2.4	6.2	1.0	91.6	1.2	.891	N
1027	2882.0 - 2883.0	20.6	3.8	7.7	1.6	89.0	1.7	.896	N
1028	2883.0 - 2884.0	14.1	2.4	5.2	1.0	92.8	1.0	.890	N
1029	2884.0 - 2885.0	20.5	4.3	7.7	1.8	88.8	1.7	.902	N
1030	2885.0 - 2886.0	12.0	3.4	4.5	1.4	93.1	1.0	.899	N
1031	2886.0 - 2887.0	9.0	1.2	3.3	.5	95.7	.5	.887	N
1032	2887.0 - 2888.0	12.8	1.7	4.8	.7	93.5	1.0	.893	N
1033	2888.0 - 2889.0	14.9	4.3	5.7	1.8	90.7	1.8	.915	N
1034	2889.0 - 2890.0	29.0	4.3	11.0	1.8	84.6	2.6	.906	N
1035	2890.0 - 2891.0	18.1	4.3	6.9	1.8	89.8	1.5	.908	N
1036	2891.0 - 2892.0	25.4	2.9	9.6	1.2	87.2	2.0	.903	N
1037	2892.0 - 2893.0	21.3	4.6	8.1	1.9	88.0	2.0	.910	N
1038	2893.0 - 2894.0	20.5	3.4	7.7	1.4	89.5	1.4	.903	N
1039	2894.0 - 2895.0	24.2	4.1	9.1	1.7	86.2	3.0	.898	N
1040	2895.0 - 2896.0	15.5	5.5	5.8	2.3	90.6	1.3	.900	N
1041	2896.0 - 2897.0	15.6	3.6	5.9	1.5	91.7	.9	.902	N
1042	2897.0 - 2898.0	12.0	4.1	4.5	1.7	92.8	1.0	.894	N
1043	2898.0 - 2899.0	7.0	6.0	2.6	2.5	93.8	1.1	.891	N
1044	2899.0 - 2900.0	6.1	6.5	2.3	2.7	94.4	.6	.892	N
1045	2900.0 - 2901.0	7.4	6.2	2.8	2.6	93.6	1.0	.893	N
1046	2901.0 - 2902.0	10.0	6.7	3.8	2.8	92.3	1.1	.910	N
1047	2902.0 - 2903.0	17.7	6.0	6.7	2.5	89.2	1.6	.905	N
1048	2903.0 - 2904.0	19.1	4.6	7.2	1.9	89.2	1.7	.905	N
1049	2904.0 - 2905.0	9.6	6.0	3.6	2.5	92.7	1.2	.898	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 21 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1050	2905.0 - 2906.0	8.9	6.7	3.4	2.8	92.6	1.3	.898	N
1051	2906.0 - 2907.0	10.8	3.8	4.1	1.6	93.0	1.3	.908	N
1052	2907.0 - 2908.0	16.3	2.2	6.2	.9	91.8	1.1	.905	N
1053	2908.0 - 2909.0	11.5	6.5	4.2	2.7	91.8	1.3	.886	N
1054	2909.0 - 2910.0	7.8	6.2	2.9	2.6	93.2	1.3	.893	N
1055	2910.0 - 2911.0	6.2	5.0	2.3	2.1	94.8	.8	.887	N
1056	2911.0 - 2912.0	8.0	4.3	3.0	1.8	94.1	1.1	.892	N
1057	2912.0 - 2913.0	1.1a	3.4	.4	1.4	97.7	.5		N
1058	2913.0 - 2914.0	2.8a	5.0	1.1	2.1	96.0	.8		N
1059	2914.0 - 2915.0	4.2a	3.8	1.6	1.6	96.1	.7		N
1060	2915.0 - 2916.0	4.5a	2.6	1.7	1.1	96.7	.5		N
1061	2916.0 - 2917.0	4.7a	3.1	1.8	1.3	96.5	.4		N
1062	2917.0 - 2918.0	5.1a	5.0	1.9	2.1	95.2	.8		N
1063	2918.0 - 2919.0	3.2a	6.1	1.2	2.6	95.6	.6		N
1064	2919.0 - 2920.0	1.3a	5.9	.5	2.5	96.5	.6		N
1065	2920.0 - 2921.0	2.9a	6.5	1.1	2.7	95.4	.8		N
1066	2921.0 - 2922.0	3.2a	6.5	1.2	2.7	95.1	1.0		N
1067	2922.0 - 2923.0	3.9a	6.7	1.5	2.8	95.2	.5		N
1068	2923.0 - 2924.0	5.6	7.0	2.1	2.9	94.3	.7	.910	N
1069	2924.0 - 2925.0	10.5	3.1	4.0	1.3	93.5	1.2	.911	N
1070	2925.0 - 2926.0	3.3a	1.9	1.3	.8	97.5	.5		N
1071	2926.0 - 2927.0	8.4	2.4	3.1	1.0	95.1	.8	.889	N
1072	2927.0 - 2928.0	18.1	4.1	6.8	1.7	90.0	1.5	.899	N
1073	2928.0 - 2929.0	10.5	5.0	3.9	2.1	92.9	1.1	.880	N
1074	2929.0 - 2930.0	11.3	4.6	4.2	1.9	92.7	1.2	.895	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 22 of 23

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1075	2930.0 - 2931.0	7.7	1.7	2.9	.7	95.8	.6	.885	N
1076	2931.0 - 2932.0	10.5	1.9	3.9	.8	94.3	1.0	.889	N
1077	2932.0 - 2933.0	15.1	3.8	5.6	1.6	91.4	1.4	.885	N
1078	2933.0 - 2934.0	13.4	2.9	5.0	1.2	92.6	1.2	.891	N
1079	2934.0 - 2935.0	12.9	2.9	4.8	1.2	92.6	1.4	.901	N
1080	2935.0 - 2936.0	6.5	5.5	2.4	2.3	94.5	.8	.889	N
1081	2936.0 - 2937.0	4.8a	6.0	1.9	2.5	94.8	.8		N
1082	2937.0 - 2938.0	5.6	6.5	2.1	2.7	94.4	.8	.896	N
1083	2938.0 - 2939.0	8.4	3.6	3.2	1.5	94.5	.9	.898	N
1084	2939.0 - 2940.0	6.0	1.2	2.2	.5	96.5	.8	.886	N
1085	2940.0 - 2941.0	11.0	1.4	4.2	.6	94.5	.7	.907	N
1086	2941.0 - 2942.0	9.7	1.7	3.6	.7	95.0	.7	.894	N
1087	2942.0 - 2943.0	11.9	4.6	4.5	1.9	92.3	1.3	.906	N
1088	2943.0 - 2944.0	7.7	5.0	2.9	2.1	94.2	.8	.894	N
1089	2944.0 - 2945.0	5.4	3.8	2.1	1.6	95.6	.7	.907	N
1090	2945.0 - 2946.0	8.6	2.4	3.2	1.0	95.2	.6	.903	N
1091	2946.0 - 2947.0	4.1a	1.9	1.6	.8	97.1	.5		N
1092	2947.0 - 2948.0	1.9a	4.1	.7	1.7	97.1	.5		N
1093	2948.0 - 2949.0	1.3a	5.2	.5	2.2	96.8	.6		N
1094	2949.0 - 2950.0	2.3a	7.0	.9	2.9	95.7	.5		N
1095	2950.0 - 2951.0	1.3a	7.2	.5	3.0	96.0	.5		N
1096	2951.0 - 2952.0	1.6a	6.7	.6	2.8	95.9	.7		N
1097	2952.0 - 2953.0	1.6a	4.8	.6	2.0	96.9	.5		N
1098	2953.0 - 2954.0	.5a	6.2	.2	2.6	96.6	.6		N
1099	2954.0 - 2955.0	1.1a	4.8	.4	2.0	97.4	.2		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 23 of 23

R.H. GODFRE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 19 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 550 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1100	2955.0 - 2956.0	1.4a	5.8	.5	2.4	96.5	.6		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

OIL SHALE ASSAY REPORT

PAGE 1 of 21

F.H. GODDE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1101	2956.0 - 2957.0	1.5a	5.3	.6	2.2	96.7	.5		N
1102	2957.0 - 2958.0	1.6a	5.8	.6	2.4	96.4	.6		N
1103	2958.0 - 2959.0	2.4a	6.0	.9	2.5	96.1	.5		N
1104	2959.0 - 2960.0	3.5a	5.0	1.3	2.1	95.8	.8		N
1105	2960.0 - 2961.0	3.8a	2.2	1.5	.9	97.0	.6		N
1106	2961.0 - 2962.0	4.5a	3.8	1.7	1.6	95.7	1.0		N
1107	2962.0 - 2963.0	3.3a	4.8	1.3	2.0	96.2	.6		N
1108	2963.0 - 2964.0	3.2a	5.5	1.2	2.3	95.9	.6		N
1109	2964.0 - 2965.0	2.6a	4.3	1.0	1.8	96.7	.5		N
1110	2965.0 - 2966.0	2.1a	5.3	.8	2.2	96.3	.7		N
1111	2966.0 - 2967.0	3.1a	5.3	1.2	2.2	96.0	.6		N
1112	2967.0 - 2968.0	3.3a	5.8	1.3	2.4	95.6	.7		N
1113	2968.0 - 2969.0	2.9a	6.5	1.1	2.7	95.5	.7		N
1114	2969.0 - 2970.0	2.6a	6.2	1.0	2.6	95.9	.5		N
1115	2970.0 - 2971.0	2.6a	7.0	1.0	2.9	95.4	.7		N
1116	2971.0 - 2972.0	2.7a	6.0	1.0	2.5	96.2	.3		N
1117	2972.0 - 2973.0	2.6a	4.9	1.0	2.1	96.3	.7		N
1118	2973.0 - 2974.0	2.0a	4.8	.8	2.0	96.6	.6		N
1119	2974.0 - 2975.0	2.4a	4.8	.9	2.0	96.5	.6		N
1120	2975.0 - 2976.0	1.8a	4.6	.7	1.9	97.0	.4		N
1121	2976.0 - 2977.0	2.4a	3.4	.9	1.4	97.2	.5		N
1122	2977.0 - 2978.0	3.0a	3.6	1.2	1.5	96.8	.6		N
1123	2978.0 - 2979.0	3.0a	2.4	1.2	1.0	97.5	.4		N
1124	2979.0 - 2980.0	1.9a	5.3	.7	2.2	96.6	.5		N
1125	2980.0 - 2981.0	1.6a	5.8	.6	2.4	96.6	.4		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920



Dickinson Laboratories, Inc.
COAL ANALYSTS

P.O. BOX 12006 • EL PASO, TEXAS 79912 • 4-5 5th Fl.

OIL SHALE ASSAY REPORT

PAGE 2 of 21

R.H. GOIBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1126	2981.0 - 2982.0	3.3a	4.6	1.3	1.9	96.1	.7		N
1127	2982.0 - 2983.0	7.8	1.4	2.9	.6	95.7	.8	.877	N
1128	2983.0 - 2984.0	8.7	1.4	3.2	.6	95.5	.7	.883	N
1129	2984.0 - 2985.0	8.4	1.9	3.1	.8	95.4	.7	.890	N
1130	2985.0 - 2986.0	14.5	1.9	5.4	.8	92.8	1.0	.891	N
1131	2986.0 - 2987.0	12.7	2.9	4.8	1.2	92.9	1.2	.894	N
1132	2987.0 - 2988.0	7.4	3.1	2.7	1.3	95.1	.9	.885	N
1133	2988.0 - 2989.0	10.7	2.9	4.0	1.2	94.0	.8	.893	N
1134	2989.0 - 2990.0	8.5	1.4	3.2	.6	95.7	.5	.896	N
1135	2990.0 - 2991.0	4.6a	1.0	1.8	.4	96.7	1.1		N
1136	2991.0 - 2992.0	2.8a	1.4	1.1	.6	97.9	.4		N
1137	2992.0 - 2993.0	4.7a	5.0	1.8	2.1	95.3	.8		N
1138	2993.0 - 2994.0	10.0	3.8	3.7	1.6	93.4	1.3	.891	N
1139	2994.0 - 2995.0	6.6	3.1	2.4	1.3	95.3	1.0	.880	N
1140	2995.0 - 2996.0	5.8	3.6	2.1	1.5	95.6	.8	.871	N
1141	2996.0 - 2997.0	3.8a	2.4	1.5	1.0	96.8	.8		N
1142	2997.0 - 2998.0	.4a	1.7	.2	.7	98.6	.6		N
1143	2998.0 - 2999.0	.0t	4.2	.0	1.7	97.6	.7		N
1144	2999.0 - 3000.0	.0t	4.6	.0	1.9	97.8	.3		N
1145	3000.0 - 3001.0	.0t	4.6	.0	1.9	97.7	.4		N
1146	3001.0 - 3002.0	.0t	3.6	.0	1.5	98.2	.3		N
1147	3002.0 - 3003.0	.0t	4.9	.0	2.0	97.7	.3		N
1148	3003.0 - 3004.0	.0t	7.8	.0	3.2	96.5	.3		N
1149	3004.0 - 3005.0	.6a	7.1	.2	3.0	96.4	.4		N
1150	3005.0 - 3006.0	1.5a	5.0	.6	2.1	96.9	.4		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

t = Trace of Oil

OIL SHALE ASSAY REPORT

PAGE 3 of 21

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1151	3006.0 - 3007.0	1.4a	4.8	.5	2.0	96.9	.6		N
1152	3007.0 - 3008.0	.0t	4.5	.0	1.9	97.8	.3		N
1153	3008.0 - 3009.0	.0t	6.9	.0	2.9	96.9	.2		N
1154	3009.0 - 3010.0	.0t	7.6	.0	3.2	96.7	.1		N
1155	3010.0 - 3011.0	.0t	3.1	.0	1.3	98.1	.6		N
1156	3011.0 - 3012.0	.0t	4.4	.0	1.8	97.7	.5		N
1157	3012.0 - 3013.0	.0t	3.5	.0	1.5	98.4	.1		N
1158	3013.0 - 3014.0	.0t	4.7	.0	1.9	97.0	1.1		N
1159	3014.0 - 3015.0	.0t	4.6	.0	1.9	97.9	.2		N
1160	3015.0 - 3016.0	0.0	6.3	0.0	2.6	96.8	.6		N
1161	3016.0 - 3017.0	1.4a	3.5	.5	1.5	97.7	.3		N
1162	3017.0 - 3018.0	1.8a	2.6	.7	1.1	97.7	.5		N
1163	3018.0 - 3019.0	.0t	5.9	.0	2.5	96.8	.7		N
1164	3019.0 - 3020.0	.7a	3.7	.3	1.6	97.6	.6		N
1165	3020.0 - 3021.0	.0t	5.9	.0	2.5	97.2	.3		N
1166	3021.0 - 3022.0	.7a	4.1	.3	1.7	97.5	.5		N
1167	3022.0 - 3023.0	.7a	3.8	.3	1.6	97.9	.3		N
1168	3023.0 - 3024.0	.9a	3.6	.3	1.5	98.0	.2		N
1169	3024.0 - 3025.0	.5a	2.9	.2	1.2	98.2	.4		N
1170	3025.0 - 3026.0	.0t	7.1	.0	3.0	96.2	.9		N
1171	3026.0 - 3027.0	.0t	7.7	.0	3.2	95.9	.9		N
1172	3027.0 - 3028.0	.0t	6.2	.0	2.6	96.9	.5		N
1173	3028.0 - 3029.0	.0t	4.7	.0	2.0	97.4	.6		N
1174	3029.0 - 3030.0	.0t	4.4	.0	1.9	97.8	.4		N
1175	3030.0 - 3031.0	.0t	6.9	.0	2.9	96.6	.5		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

t = Trace of Oil

OIL SHALE ASSAY REPORT

PAGE 4 of 21

R.H.GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1176	3031.0 - 3032.0	.0t	5.7	.0	2.4	97.2	.4		N
1177	3032.0 - 3033.0	.0t	4.8	.0	2.0	97.6	.4		N
1178	3033.0 - 3034.0	0.0	6.6	0.0	2.8	96.7	.5		N
1179	3034.0 - 3035.0	.0t	4.2	.0	1.8	97.8	.5		N
1180	3035.0 - 3036.0	.4a	5.3	.2	2.2	97.0	.6		N
1181	3036.0 - 3037.0	.0t	3.7	.0	1.6	98.1	.3		N
1182	3037.0 - 3038.0	.0t	5.7	.0	2.4	97.2	.4		N
1183	3038.0 - 3039.0	.0t	5.7	.0	2.4	97.3	.3		N
1184	3039.0 - 3040.0	.0t	5.9	.0	2.5	97.0	.5		N
1185	3040.0 - 3041.0	.0t	6.4	.0	2.7	96.6	.7		N
1186	3041.0 - 3042.0	.0t	7.0	.0	2.9	96.4	.7		N
1187	3042.0 - 3043.0	.0t	7.2	.0	3.0	96.4	.6		N
1188	3043.0 - 3044.0	.0t	7.4	.0	3.1	96.2	.7		N
1189	3044.0 - 3045.0	1.5a	6.5	.6	2.7	96.0	.7		N
1190	3045.0 - 3046.0	5.2a	5.9	2.0	2.5	95.0	.6		N
1191	3046.0 - 3047.0	4.0a	2.4	1.5	1.0	96.9	.6		N
1192	3047.0 - 3048.0	.4a	1.2	.2	.5	98.8	.5		N
1193	3048.0 - 3049.0	1.7a	2.4	.7	1.0	97.7	.7		N
1194	3049.0 - 3050.0	2.8a	1.7	1.1	.7	97.9	.3		N
1195	3050.0 - 3051.0	.1a	1.0	.0	.4	99.2	.4		N
1196	3051.0 - 3052.0	1.5a	1.2	.6	.5	98.4	.5		N
1197	3052.0 - 3053.0	5.4	1.0	2.0	.4	97.1	.5	.892	N
1198	3053.0 - 3054.0	5.5	.7	2.0	.3	97.2	.5	.889	N
1199	3054.0 - 3055.0	4.1a	.2	1.6	.1	97.8	.5		N
1200	3055.0 - 3056.0	1.1a	1.7	.4	.7	98.2	.7		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

t = Trace of Oil

OIL SHALE ASSAY REPORT

PAGE 5 of 21

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1201	3056.0 - 3057.0	.8a	4.3	.3	1.8	97.1	.8		N
1202	3057.0 - 3058.0	.7a	5.0	.3	2.1	97.2	.5		N
1203	3058.0 - 3059.0	1.6a	5.0	.6	2.1	96.7	.6		N
1204	3059.0 - 3060.0	3.4a	5.3	1.3	2.2	95.8	.7		N
1205	3060.0 - 3061.0	4.5a	5.3	1.7	2.2	95.4	.7		N
1206	3061.0 - 3062.0	.8a	1.0	.3	.4	99.0	.3		N
1207	3062.0 - 3063.0	.0t	4.9	.0	2.0	97.5	.5		N
1208	3063.0 - 3064.0	.0t	6.0	.0	2.5	97.0	.5		N
1209	3064.0 - 3065.0	0.0	4.1	0.0	1.7	98.0	.3		N
1210	3065.0 - 3066.0	.0t	3.9	.0	1.6	98.0	.4		N
1211	3066.0 - 3067.0	.0t	6.7	.0	2.8	96.9	.3		N
1212	3067.0 - 3068.0	.0t	5.3	.0	2.2	97.3	.5		N
1213	3068.0 - 3069.0	.1a	5.7	.0	2.4	97.1	.5		N
1214	3069.0 - 3070.0	.0t	6.3	.0	2.6	97.0	.4		N
1215	3070.0 - 3071.0	.0t	3.9	.0	1.6	98.0	.4		N
1216	3071.0 - 3072.0	0.0	4.1	0.0	1.7	97.2	1.1		N
1217	3072.0 - 3073.0	0.0	4.9	0.0	2.0	97.6	.4		N
1218	3073.0 - 3074.0	.0t	4.9	.0	2.1	97.6	.4		N
1219	3074.0 - 3075.0	0.0	3.5	0.0	1.5	98.3	.2		N
1220	3075.0 - 3076.0	.0t	4.0	.0	1.7	97.8	.5		N
1221	3076.0 - 3077.0	0.0	4.0	0.0	1.7	98.1	.3		N
1222	3077.0 - 3078.0	.0t	5.4	.0	2.2	97.2	.6		N
1223	3078.0 - 3079.0	.0t	5.7	.0	2.4	97.2	.4		N
1224	3079.0 - 3080.0	0.0	5.4	0.0	2.3	97.2	.6		N
1225	3080.0 - 3081.0	0.0	6.7	0.0	2.8	96.7	.5		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

t = Trace of Oil

OIL SHALE ASSAY REPORT

PAGE 6 of 21

R.H.GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1226	3081.0 - 3082.0	.0t	5.5	.0	2.3	97.3	.4		N
1227	3082.0 - 3083.0	.0t	6.2	.0	2.6	96.8	.6		N
1228	3083.0 - 3084.0	.0t	5.3	.0	2.2	96.9	.9		N
1229	3084.0 - 3085.0	.0t	4.9	.0	2.0	97.7	.3		N
1230	3085.0 - 3086.0	.0t	4.9	.0	2.0	97.7	.3		N
1231	3086.0 - 3087.0	.0t	4.8	.0	2.0	97.6	.4		N
1232	3087.0 - 3088.0	.0t	6.2	.0	2.6	96.8	.6		N
1233	3088.0 - 3089.0	.0t	6.4	.0	2.7	96.9	.5		N
1234	3089.0 - 3090.0	.0t	6.9	.0	2.9	96.5	.6		N
1235	3090.0 - 3091.0	.0t	6.4	.0	2.7	96.9	.4		N
1236	3091.0 - 3092.0	.9a	6.5	.4	2.7	96.2	.8		N
1237	3092.0 - 3093.0	1.9a	6.0	.7	2.5	96.3	.5		N
1238	3093.0 - 3094.0	2.9a	5.8	1.1	2.4	95.9	.6		N
1239	3094.0 - 3095.0	1.7a	6.0	.7	2.5	96.1	.7		N
1240	3095.0 - 3096.0	2.0a	6.5	.8	2.7	96.0	.5		N
1241	3096.0 - 3097.0	2.9a	6.2	1.1	2.6	95.6	.7		N
1242	3097.0 - 3098.0	2.5a	2.6	1.0	1.1	97.4	.5		N
1243	3098.0 - 3099.0	1.6a	1.7	.6	.7	98.1	.6		N
1244	3099.0 - 3100.0	.7a	3.8	.3	1.6	97.7	.4		N
1245	3100.0 - 3101.0	1.1a	4.3	.4	1.8	96.8	1.0		N
1246	3101.0 - 3102.0	1.7a	5.3	.7	2.2	96.4	.8		N
1247	3102.0 - 3103.0	.9a	5.8	.4	2.4	96.6	.6		N
1248	3103.0 - 3104.0	1.8a	5.8	.7	2.4	96.3	.6		N
1249	3104.0 - 3105.0	2.2a	4.8	.8	2.0	96.5	.7		N
1250	3105.0 - 3106.0	3.0a	5.5	1.2	2.3	95.8	.7		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

t = Trace of Oil

OIL SHALE ASSAY REPORT

PAGE 7 of 21

R.H. GODDE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1251	3106.0 - 3107.0	3.7a	4.8	1.4	2.0	95.9	.7	.892	N
1252	3107.0 - 3108.0	7.4	4.3	2.8	1.8	94.6	.9		N
1253	3108.0 - 3109.0	1.5a	1.7	.6	.7	98.3	.4		N
1254	3109.0 - 3110.0	2.0a	1.2	.8	.5	98.3	.5		N
1255	3110.0 - 3111.0	2.3a	3.1	.9	1.3	97.4	.4		N
1256	3111.0 - 3112.0	1.0a	4.3	.4	1.8	97.4	.4		N
1257	3112.0 - 3113.0	1.8a	3.1	.7	1.3	97.6	.4		N
1258	3113.0 - 3114.0	.2a	.5	.1	.2	99.3	.4		N
1259	3114.0 - 3115.0	0.0	.7	0.0	.3	99.2	.5		N
1260	3115.0 - 3116.0	0.0	.9	0.0	.4	99.2	.4		N
1261	3116.0 - 3117.0	0.0	1.0	0.0	.4	99.4	.2		N
1262	3117.0 - 3118.0	0.0	2.0	0.0	.8	98.8	.4		N
1263	3118.0 - 3119.0	0.0	4.7	0.0	2.0	97.6	.4		N
1264	3119.0 - 3120.0	0.0	3.5	0.0	1.4	98.2	.4		N
1265	3120.0 - 3121.0	0.0	6.2	0.0	2.6	97.1	.3		N
1266	3121.0 - 3122.0	.0t	6.4	.0	2.7	97.0	.3		N
1267	3122.0 - 3123.0	.0t	6.2	.0	2.6	97.2	.2		N
1268	3123.0 - 3124.0	.0t	5.2	.0	2.2	97.4	.4		N
1269	3124.0 - 3125.0	.0t	6.3	.0	2.6	97.0	.4		N
1270	3125.0 - 3126.0	.0t	7.0	.0	2.9	96.7	.4		N
1271	3126.0 - 3127.0	.4a	3.4	.2	1.4	98.1	.3		N
1272	3127.0 - 3128.0	.3a	4.8	.1	2.0	97.4	.5		N
1273	3128.0 - 3129.0	3.2a	7.0	1.2	2.9	95.4	.5		N
1274	3129.0 - 3130.0	.0t	1.2	.0	.5	99.1	.4		N
1275	3130.0 - 3131.0	.0t	.9	.0	.4	99.2	.4		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

t = Trace of Oil

OIL SHALE ASSAY REPORT

PAGE 8 of 21

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1276	3131.0 - 3132.0	.4a	.7	.2	.3	99.2	.3		N
1277	3132.0 - 3133.0	.4a	1.0	.2	.4	98.9	.6		N
1278	3133.0 - 3134.0	0.0	.6	0.0	.3	99.3	.4		N
1279	3134.0 - 3135.0	0.0	.7	0.0	.3	99.6	.1		N
1280	3135.0 - 3136.0	0.0	4.0	0.0	1.7	97.9	.4		N
1281	3136.0 - 3137.0	.0t	5.1	.0	2.1	97.6	.3		N
1282	3137.0 - 3138.0	.0t	5.0	.0	2.1	97.5	.4		N
1283	3138.0 - 3139.0	.0t	5.8	.0	2.4	97.2	.4		N
1284	3139.0 - 3140.0	.0t	3.7	.0	1.6	98.1	.4		N
1285	3140.0 - 3141.0	.0t	4.1	.0	1.7	97.9	.4		N
1286	3141.0 - 3142.0	.0t	4.8	.0	2.0	97.4	.6		N
1287	3142.0 - 3143.0	.0t	6.3	.0	2.6	97.1	.3		N
1288	3143.0 - 3144.0	.0t	6.4	.0	2.7	96.8	.5		N
1289	3144.0 - 3145.0	.7a	6.0	.3	2.5	96.8	.4		N
1290	3145.0 - 3146.0	.8a	5.0	.3	2.1	97.2	.4		N
1291	3146.0 - 3147.0	.6a	4.8	.2	2.0	97.5	.3		N
1292	3147.0 - 3148.0	0.0	4.9	0.0	2.0	97.7	.3		N
1293	3148.0 - 3149.0	0.0	2.0	0.0	.8	98.9	.3		N
1294	3149.0 - 3150.0	0.0	2.0	0.0	.8	99.0	.2		N
1295	3150.0 - 3151.0	0.0	4.3	0.0	1.8	98.0	.2		N
1296	3151.0 - 3152.0	.0t	6.1	.0	2.6	97.2	.2		N
1297	3152.0 - 3153.0	0.0	2.7	0.0	1.1	98.7	.2		N
1298	3153.0 - 3154.0	0.0	3.7	0.0	1.6	98.2	.2		N
1299	3154.0 - 3155.0	0.0	4.1	0.0	1.7	98.1	.2		N
1300	3155.0 - 3156.0	.0t	5.2	.0	2.2	97.5	.4		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

t = Trace of Oil

OIL SHALE ASSAY REPORT

PAGE 9 of 21

R.H.GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1301	3156.0 - 3157.0	.0t	3.3	.0	1.4	98.3	.3		N
1302	3157.0 - 3158.0	.0t	4.6	.0	1.9	97.8	.3		N
1303	3158.0 - 3159.0	.0t	4.7	.0	2.0	97.7	.3		N
1304	3159.0 - 3160.0	.0t	2.7	.0	1.1	98.6	.3		N
1305	3160.0 - 3161.0	.0t	2.1	.0	.9	98.9	.2		N
1306	3161.0 - 3162.0	0.0	1.2	0.0	.5	99.2	.3		N
1307	3162.0 - 3163.0	0.0	5.9	0.0	2.5	97.3	.3		N
1308	3163.0 - 3164.0	0.0	4.3	0.0	1.8	97.9	.3		N
1309	3164.0 - 3165.0	.0t	5.2	.0	2.2	97.7	.1		N
1310	3165.0 - 3166.0	0.0	2.3	0.0	1.0	98.7	.3		N
1311	3166.0 - 3167.0	0.0	4.0	0.0	1.7	97.5	.8		N
1312	3167.0 - 3168.0	0.0	3.1	0.0	1.3	98.5	.2		N
1313	3168.0 - 3169.0	.0t	2.9	.0	1.2	98.5	.3		N
1314	3169.0 - 3170.0	0.0	3.4	0.0	1.4	98.3	.3		N
1315	3170.0 - 3171.0	.0t	3.8	.0	1.6	98.2	.2		N
1316	3171.0 - 3172.0	0.0	1.0	0.0	.4	99.3	.3		N
1317	3172.0 - 3173.0	0.0	.8	0.0	.3	99.5	.2		N
1318	3173.0 - 3174.0	0.0	.8	0.0	.3	99.5	.2		N
1319	3174.0 - 3175.0	.0t	3.1	.0	1.3	98.6	.1		N
1320	3175.0 - 3176.0	0.0	2.4	0.0	1.0	98.7	.3		N
1321	3176.0 - 3177.0	0.0	5.9	0.0	2.5	97.1	.5		N
1322	3177.0 - 3178.0	0.0	2.7	0.0	1.1	98.6	.3		N
1323	3178.0 - 3179.0	0.0	1.2	0.0	.5	99.3	.2		N
1324	3179.0 - 3180.0	0.0	.7	0.0	.3	99.5	.2		N
1325	3180.0 - 3181.0	.0t	4.6	.0	1.9	98.0	.1		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

t = Trace of Oil

OIL SHALE ASSAY REPORT

PAGE 10 of 21

R.H.GODDE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1326	3181.0 - 3182.0	0.0	1.1	0.0	.4	99.3	.3		N
1327	3182.0 - 3183.0	0.0	.7	0.0	.3	99.5	.2		N
1328	3183.0 - 3184.0	0.0	1.8	0.0	.8	99.0	.2		N
1329	3184.0 - 3185.0	0.0	.7	0.0	.3	99.5	.2		N
1330	3185.0 - 3186.0	0.0	.6	0.0	.2	99.6	.2		N
1331	3186.0 - 3187.0	0.0	5.2	0.0	2.2	97.6	.2		N
1332	3187.0 - 3188.0	0.0	7.8	0.0	3.3	96.3	.5		N
1333	3188.0 - 3189.0	0.0	5.5	0.0	2.3	97.4	.3		N
1334	3189.0 - 3190.0	.0t	7.4	.0	3.1	96.4	.5		N
1335	3190.0 - 3191.0	0.0	3.9	0.0	1.6	98.2	.2		N
1336	3191.0 - 3192.0	0.0	6.3	0.0	2.6	96.9	.5		N
1337	3192.0 - 3193.0	0.0	6.6	0.0	2.7	96.7	.6		N
1338	3193.0 - 3194.0	.0t	6.0	.0	2.5	96.9	.6		N
1339	3194.0 - 3195.0	.0t	6.9	.0	2.9	96.5	.6		N
1340	3195.0 - 3196.0	.0t	5.9	.0	2.5	97.2	.3		N
1341	3196.0 - 3197.0	.0t	5.5	.0	2.3	97.3	.4		N
1342	3197.0 - 3198.0	.0t	2.3	.0	.9	98.9	.2		N
1343	3198.0 - 3199.0	0.0	3.0	0.0	1.2	98.4	.4		N
1344	3199.0 - 3200.0	0.0	3.1	0.0	1.3	98.4	.3		N
1345	3200.0 - 3201.0	0.0	3.5	0.0	1.5	98.3	.2		N
1346	3201.0 - 3202.0	0.0	4.7	0.0	2.0	97.6	.4		N
1347	3202.0 - 3203.0	0.0	2.7	0.0	1.1	98.4	.5		N
1348	3203.0 - 3204.0	0.0	1.4	0.0	.6	99.3	.1		N
1349	3204.0 - 3205.0	0.0	3.3	0.0	1.4	98.4	.2		N
1350	3205.0 - 3206.0	0.0	3.8	0.0	1.6	98.3	.1		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

t = Trace of Oil

OIL SHALE ASSAY REPORT

PAGE 11 of 21

R.H. GOIBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1351	3206.0 - 3207.0	0.0	3.9	0.0	1.6	98.1	.3		N
1352	3207.0 - 3208.0	0.0	5.2	0.0	2.2	97.3	.5		N
1353	3208.0 - 3209.0	0.0	6.0	0.0	2.5	96.9	.6		N
1354	3209.0 - 3210.0	0.0	6.6	0.0	2.8	97.0	.3		N
1355	3210.0 - 3211.0	.0t	6.5	.0	2.7	97.1	.2		N
1356	3211.0 - 3212.0	.4a	5.5	.2	2.3	97.2	.3		N
1357	3212.0 - 3213.0	0.0	4.1	0.0	1.7	98.1	.2		N
1358	3213.0 - 3214.0	0.0	4.6	0.0	1.9	97.9	.2		N
1359	3214.0 - 3215.0	.0t	5.9	.0	2.5	97.1	.4		N
1360	3215.0 - 3216.0	.0t	6.9	.0	2.9	96.8	.3		N
1361	3216.0 - 3217.0	.0t	5.8	.0	2.4	97.3	.3		N
1362	3217.0 - 3218.0	.0t	6.5	.0	2.7	97.0	.3		N
1363	3218.0 - 3219.0	.0t	4.9	.0	2.1	97.4	.6		N
1364	3219.0 - 3220.0	.0t	5.4	.0	2.3	97.5	.3		N
1365	3220.0 - 3221.0	.0t	6.6	.0	2.8	96.9	.3		N
1366	3221.0 - 3222.0	.0t	6.6	.0	2.8	96.9	.4		N
1367	3222.0 - 3223.0	.8a	5.0	.3	2.1	97.2	.4		N
1368	3223.0 - 3224.0	.5a	4.6	.2	1.9	97.3	.6		N
1369	3224.0 - 3225.0	1.0a	5.0	.4	2.1	96.8	.7		N
1370	3225.0 - 3226.0	1.8a	4.3	.7	1.8	97.0	.5		N
1371	3226.0 - 3227.0	2.5a	4.1	1.0	1.7	96.6	.7		N
1372	3227.0 - 3228.0	3.8a	6.2	1.5	2.6	95.1	.9		N
1373	3228.0 - 3229.0	3.3a	5.5	1.3	2.3	96.0	.4		N
1374	3229.0 - 3230.0	2.0a	5.3	.8	2.2	96.3	.8		N
1375	3230.0 - 3231.0	2.5a	2.2	1.0	.9	97.5	.6		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

t = Trace of Oil

OIL SHALE ASSAY REPORT

PAGE 12 of 21

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1376	3231.0 - 3232.0	7.6	2.6	2.8	1.1	95.4	.7	.891	N
1377	3232.0 - 3233.0	.0t	.8	.0	.4	99.2	.5		N
1378	3233.0 - 3234.0	.0t	1.5	.0	.6	98.6	.8		N
1379	3234.0 - 3235.0	.0t	1.8	.0	.8	98.6	.7		N
1380	3235.0 - 3236.0	.0t	1.8	.0	.8	98.7	.5		N
1381	3236.0 - 3237.0	0.0	1.2	0.0	.5	99.0	.5		N
1382	3237.0 - 3238.0	0.0	1.2	0.0	.5	99.0	.5		N
1383	3238.0 - 3239.0	0.0	1.4	0.0	.6	99.0	.4		N
1384	3239.0 - 3240.0	.0t	5.3	.0	2.2	97.2	.6		N
1385	3240.0 - 3241.0	.0t	4.8	.0	2.0	97.5	.5		N
1386	3241.0 - 3242.0	.0t	4.1	.0	1.7	97.9	.4		N
1387	3242.0 - 3243.0	0.0	3.2	0.0	1.3	98.0	.7		N
1388	3243.0 - 3244.0	0.0	4.5	0.0	1.9	97.5	.6		N
1389	3244.0 - 3245.0	.0t	6.6	.0	2.7	96.4	.9		N
1390	3245.0 - 3246.0	.0t	6.3	.0	2.6	96.9	.5		N
1391	3246.0 - 3247.0	.0t	5.5	.0	2.3	97.1	.6		N
1392	3247.0 - 3248.0	0.0	5.8	0.0	2.4	97.0	.6		N
1393	3248.0 - 3249.0	0.0	5.9	0.0	2.5	96.6	.9		N
1394	3249.0 - 3250.0	0.0	4.9	0.0	2.1	97.2	.7		N
1395	3250.0 - 3251.0	0.0	5.2	0.0	2.2	97.0	.8		N
1396	3251.0 - 3252.0	0.0	5.8	0.0	2.4	96.9	.7		N
1397	3252.0 - 3253.0	.0t	6.5	.0	2.7	96.7	.6		N
1398	3253.0 - 3254.0	.0t	6.8	.0	2.8	96.6	.6		N
1399	3254.0 - 3255.0	0.0	2.8	0.0	1.2	98.3	.5		N
1400	3255.0 - 3256.0	.0t	2.8	.0	1.2	98.4	.4		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

t = Trace of Oil

OIL SHALE ASSAY REPORT

PAGE 13 of 21

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1401	3256.0 - 3257.0	.0t	4.7	.0	2.0	97.7	.3		N
1402	3257.0 - 3258.0	.0t	5.9	.0	2.5	97.0	.5		N
1403	3258.0 - 3259.0	.0t	3.6	.0	1.5	98.1	.4		N
1404	3259.0 - 3260.0	.0t	5.6	.0	2.3	97.3	.4		N
1405	3260.0 - 3261.0	0.0	3.8	0.0	1.6	97.7	.7		N
1406	3261.0 - 3262.0	.0t	3.4	.0	1.4	97.8	.8		N
1407	3262.0 - 3263.0	0.0	1.4	0.0	.6	99.0	.4		N
1408	3263.0 - 3264.0	0.0	4.0	0.0	1.7	97.9	.5		N
1409	3264.0 - 3265.0	0.0	2.3	0.0	1.0	98.4	.6		N
1410	3265.0 - 3266.0	0.0	3.5	0.0	1.5	98.1	.5		N
1411	3266.0 - 3267.0	0.0	1.2	0.0	.5	99.0	.5		N
1412	3267.0 - 3268.0	0.0	.9	0.0	.4	99.2	.4		N
1413	3268.0 - 3269.0	0.0	.9	0.0	.4	99.4	.2		N
1414	3269.0 - 3270.0	0.0	3.1	0.0	1.3	98.5	.2		N
1415	3270.0 - 3271.0	0.0	3.7	0.0	1.5	98.0	.5		N
1416	3271.0 - 3272.0	0.0	4.7	0.0	2.0	96.6	1.5		N
1417	3272.0 - 3273.0	0.0	7.0	0.0	2.9	96.8	.3		N
1418	3273.0 - 3274.0	0.0	5.8	0.0	2.4	97.1	.5		N
1419	3274.0 - 3275.0	0.0	2.1	0.0	.9	98.5	.6		N
1420	3275.0 - 3276.0	0.0	6.7	0.0	2.8	96.9	.3		N
1421	3276.0 - 3277.0	0.0	5.6	0.0	2.3	97.3	.4		N
1422	3277.0 - 3278.0	0.0	4.5	0.0	1.9	97.8	.3		N
1423	3278.0 - 3279.0	0.0	3.0	0.0	1.3	98.1	.6		N
1424	3279.0 - 3280.0	0.0	3.0	0.0	1.3	98.0	.7		N
1425	3280.0 - 3281.0	0.0	6.5	0.0	2.7	96.8	.5		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

t = Trace of Oil

OIL SHALE ASSAY REPORT

PAGE 14 of 21

R.H.GODDE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1426	3281.0 - 3282.0	0.0	2.1	0.0	.9	98.6	.5		N
1427	3282.0 - 3283.0	0.0	4.2	0.0	1.8	97.5	.7		N
1428	3283.0 - 3284.0	0.0	3.6	0.0	1.5	98.0	.5		N
1429	3284.0 - 3285.0	0.0	2.2	0.0	.9	98.6	.5		N
1430	3285.0 - 3286.0	0.0	4.4	0.0	1.8	97.7	.5		N
1431	3286.0 - 3287.0	0.0	4.2	0.0	1.7	98.0	.3		N
1432	3287.0 - 3288.0	0.0	2.7	0.0	1.1	98.5	.4		N
1433	3288.0 - 3289.0	0.0	2.7	0.0	1.1	98.3	.6		N
1434	3289.0 - 3290.0	0.0	2.6	0.0	1.1	98.7	.2		N
1435	3290.0 - 3291.0	0.0	1.8	0.0	.8	98.7	.6		N
1436	3291.0 - 3292.0	0.0	.9	0.0	.4	99.2	.4		N
1437	3292.0 - 3293.0	0.0	.8	0.0	.4	99.4	.3		N
1438	3293.0 - 3294.0	0.0	4.7	0.0	2.0	97.7	.4		N
1439	3294.0 - 3295.0	0.0	6.0	0.0	2.5	96.9	.6		N
1440	3295.0 - 3296.0	0.0	4.0	0.0	1.7	98.1	.2		N
1441	3296.0 - 3297.0	0.0	5.7	0.0	2.4	97.3	.3		N
1442	3297.0 - 3298.0	0.0	5.3	0.0	2.2	97.2	.6		N
1443	3298.0 - 3299.0	0.0	3.5	0.0	1.5	98.3	.2		N
1444	3299.0 - 3300.0	0.0	5.1	0.0	2.1	97.4	.5		N
1445	3300.0 - 3301.0	0.0	4.1	0.0	1.7	97.4	.9		N
1446	3301.0 - 3302.0	0.0	5.7	0.0	2.4	97.0	.6		N
1447	3302.0 - 3303.0	0.0	4.7	0.0	1.9	97.6	.5		N
1448	3303.0 - 3304.0	0.0	5.6	0.0	2.3	97.1	.6		N
1449	3304.0 - 3305.0	0.0	4.7	0.0	2.0	97.3	.7		N
1450	3305.0 - 3306.0	0.0	4.9	0.0	2.0	97.5	.5		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

OIL SHALE ASSAY REPORT

PAGE 15 of 21

R.H.GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1451	3306.0 - 3307.0	0.0	3.9	0.0	1.6	97.8	.6		N
1452	3307.0 - 3308.0	0.0	2.4	0.0	1.0	98.4	.6		N
1453	3308.0 - 3309.0	0.0	2.3	0.0	1.0	98.6	.4		N
1454	3309.0 - 3310.0	0.0	5.3	0.0	2.2	97.1	.7		N
1455	3310.0 - 3311.0	0.0	6.0	0.0	2.5	96.9	.6		N
1456	3311.0 - 3312.0	0.0	5.9	0.0	2.5	96.5	1.0		N
1457	3312.0 - 3313.0	0.0	6.3	0.0	2.6	96.7	.7		N
1458	3313.0 - 3314.0	0.0	6.1	0.0	2.5	96.6	.9		N
1459	3314.0 - 3315.0	.0t	5.7	.0	2.4	97.1	.5		N
1460	3315.0 - 3316.0	.0t	6.1	.0	2.5	96.8	.7		N
1461	3316.0 - 3317.0	.3a	3.8	.1	1.6	98.0	.3		N
1462	3317.0 - 3318.0	.0t	3.8	.0	1.6	97.8	.6		N
1463	3318.0 - 3319.0	.0t	4.1	.0	1.7	97.7	.6		N
1464	3319.0 - 3320.0	0.0	4.7	0.0	2.0	97.5	.5		N
1465	3320.0 - 3321.0	0.0	6.2	0.0	2.6	96.9	.5		N
1466	3321.0 - 3322.0	0.0	7.0	0.0	2.9	96.1	1.0		N
1467	3322.0 - 3323.0	0.0	6.8	0.0	2.8	97.0	.2		N
1468	3323.0 - 3324.0	0.0	7.1	0.0	3.0	96.4	.6		N
1469	3324.0 - 3325.0	0.0	5.1	0.0	2.1	97.1	.8		N
1470	3325.0 - 3326.0	0.0	4.7	0.0	2.0	97.0	1.0		N
1471	3326.0 - 3327.0	0.0	4.5	0.0	1.9	97.1	1.0		N
1472	3327.0 - 3328.0	0.0	5.0	0.0	2.1	97.4	.5		N
1473	3328.0 - 3329.0	0.0	6.3	0.0	2.6	96.8	.6		N
1474	3329.0 - 3330.0	0.0	6.3	0.0	2.6	96.5	.9		N
1475	3330.0 - 3331.0	0.0	7.1	0.0	3.0	96.5	.5		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

t = Trace of Oil

OIL SHALE ASSAY REPORT

PAGE 16 of 21

R.H. GOODE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1476	3331.0 - 3332.0	0.0	6.8	0.0	2.9	96.4	.8		N
1477	3332.0 - 3333.0	1.5a	7.0	.6	2.9	95.9	.6		N
1478	3333.0 - 3334.0	1.9a	7.7	.7	3.2	95.1	1.0		N
1479	3334.0 - 3335.0	4.0a	6.2	1.6	2.6	95.0	.9		N
1480	3335.0 - 3336.0	2.9a	4.3	1.1	1.8	96.5	.6		N
1481	3336.0 - 3337.0	.0t	3.9	.0	1.6	97.8	.6		N
1482	3337.0 - 3338.0	.8a	5.0	.3	2.1	97.1	.5		N
1483	3338.0 - 3339.0	.6a	6.2	.2	2.6	96.7	.5		N
1484	3339.0 - 3340.0	.7a	6.0	.3	2.5	96.6	.6		N
1485	3340.0 - 3341.0	.0t	5.2	.0	2.2	97.4	.4		N
1486	3341.0 - 3342.0	0.0	5.6	0.0	2.3	97.3	.4		N
1487	3342.0 - 3343.0	0.0	6.3	0.0	2.6	96.7	.7		N
1488	3343.0 - 3344.0	.0t	7.1	.0	3.0	96.0	1.0		N
1489	3344.0 - 3345.0	1.4a	6.0	.5	2.5	96.4	.6		N
1490	3345.0 - 3346.0	.3a	5.3	.1	2.2	97.3	.4		N
1491	3346.0 - 3347.0	.6a	5.5	.2	2.3	96.9	.6		N
1492	3347.0 - 3348.0	.6a	6.2	.2	2.6	96.5	.7		N
1493	3348.0 - 3349.0	1.5a	5.5	.6	2.3	96.6	.5		N
1494	3349.0 - 3350.0	2.1a	5.5	.8	2.3	96.4	.5		N
1495	3350.0 - 3351.0	2.6a	5.5	1.0	2.3	96.1	.6		N
1496	3351.0 - 3352.0	3.3a	6.2	1.3	2.6	95.5	.7		N
1497	3352.0 - 3353.0	6.9	4.6	2.6	1.9	94.8	.7	.895	N
1498	3353.0 - 3354.0	9.8	4.3	3.7	1.8	93.4	1.1	.902	N
1499	3354.0 - 3355.0	5.9	6.7	2.2	2.8	94.1	.9	.891	N
1500	3355.0 - 3356.0	6.3	7.2	2.3	3.0	93.6	1.1	.887	N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

t = Trace of Oil

OIL SHALE ASSAY REPORT

PAGE 17 of 21

R.H.GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076--CD #1=82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1501	3356.0 - 3357.0	10.2	4.3	3.8	1.8	93.0	1.4	.899	N
1502	3357.0 - 3358.0	11.8	3.4	4.4	1.4	93.2	1.0	.898	N
1503	3358.0 - 3359.0	14.4	5.5	5.4	2.3	90.5	1.8	.895	N
1504	3359.0 - 3360.0	11.5	3.4	4.3	1.4	93.1	1.3	.887	N
1505	3360.0 - 3361.0	11.3	4.1	4.2	1.7	92.8	1.3	.893	N
1506	3361.0 - 3362.0	16.0	3.4	6.0	1.4	90.9	1.7	.898	N
1507	3362.0 - 3363.0	15.0	2.2	5.6	.9	92.2	1.3	.886	N
1508	3363.0 - 3364.0	15.3	3.4	5.6	1.4	91.3	1.7	.879	N
1509	3364.0 - 3365.0	9.5	6.4	3.5	2.7	92.4	1.5	.880	N
1510	3365.0 - 3366.0	9.5	6.4	3.4	2.7	92.8	1.1	.869	N
1511	3366.0 - 3367.0	13.0	3.8	4.7	1.6	92.2	1.5	.872	N
1512	3367.0 - 3368.0	14.5	4.8	5.3	2.0	91.1	1.6	.880	N
1513	3368.0 - 3369.0	17.3	4.3	6.4	1.8	90.3	1.5	.887	N
1514	3369.0 - 3370.0	7.8	3.4	2.9	1.4	95.0	.7	.879	N
1515	3370.0 - 3371.0	15.3	4.6	5.7	1.9	91.1	1.3	.890	N
1516	3371.0 - 3372.0	14.8	5.0	5.6	2.1	90.7	1.6	.899	N
1517	3372.0 - 3373.0	28.4	3.6	10.7	1.5	85.7	2.1	.902	N
1518	3373.0 - 3374.0	12.7	3.1	4.8	1.3	92.7	1.3	.899	N
1519	3374.0 - 3375.0	6.1	3.1	2.2	1.3	95.6	.9	.880	N
1520	3375.0 - 3376.0	6.5	2.6	2.4	1.1	95.9	.6	.885	N
1521	3376.0 - 3377.0	6.9	2.4	2.6	1.0	95.7	.7	.891	N
1522	3377.0 - 3378.0	1.1a	5.5	.4	2.3	96.6	.7		N
1523	3378.0 - 3379.0	.8a	4.7	.3	2.0	96.7	1.1		N
1524	3379.0 - 3380.0	.6a	4.6	.2	1.9	97.0	.9		N
1525	3380.0 - 3381.0	.0t	6.0	.0	2.5	97.1	.4		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

t = Trace of Oil

OIL SHALE ASSAY REPORT

PAGE 18 of 21

R.H.GODDE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1526	3381.0 - 3382.0	.0t	6.7	.0	2.8	96.7	.5		N
1527	3382.0 - 3383.0	.9a	5.8	.4	2.4	96.8	.5		N
1528	3383.0 - 3384.0	.7a	5.8	.3	2.4	96.8	.5		N
1529	3384.0 - 3385.0	1.2a	4.6	.5	1.9	96.8	.9		N
1530	3385.0 - 3386.0	1.8a	6.2	.7	2.6	96.2	.5		N
1531	3386.0 - 3387.0	1.2a	4.8	.5	2.0	97.0	.6		N
1532	3387.0 - 3388.0	1.2a	5.3	.5	2.2	96.7	.6		N
1533	3388.0 - 3389.0	2.5a	3.6	1.0	1.5	96.5	1.0		N
1534	3389.0 - 3390.0	1.4a	3.1	.6	1.3	97.4	.8		N
1535	3390.0 - 3391.0	.0t	4.4	.0	1.9	97.4	.8		N
1536	3391.0 - 3392.0	.0t	2.6	.0	1.1	98.6	.3		N
1537	3392.0 - 3393.0	.0t	6.2	.0	2.6	96.8	.6		N
1538	3393.0 - 3394.0	.0t	5.6	.0	2.3	97.0	.7		N
1539	3394.0 - 3395.0	.0t	4.5	.0	1.9	97.3	.8		N
1540	3395.0 - 3396.0	0.0	4.9	0.0	2.1	97.5	.4		N
1541	3396.0 - 3397.0	0.0	2.8	0.0	1.2	98.4	.4		N
1542	3397.0 - 3398.0	.0t	5.5	.0	2.3	97.0	.7		N
1543	3398.0 - 3399.0	0.0	3.4	0.0	1.4	97.8	.8		N
1544	3399.0 - 3400.0	0.0	4.1	0.0	1.7	97.4	.9		N
1545	3400.0 - 3401.0	.0t	5.6	.0	2.3	96.7	1.0		N
1546	3401.0 - 3402.0	.0t	5.9	.0	2.5	96.7	.9		N
1547	3402.0 - 3403.0	.0t	6.7	.0	2.8	96.4	.8		N
1548	3403.0 - 3404.0	.0t	5.2	.0	2.2	97.2	.6		N
1549	3404.0 - 3405.0	.0t	4.8	.0	2.0	97.6	.4		N
1550	3405.0 - 3406.0	.0t	5.8	.0	2.4	97.0	.6		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

t = Trace of Oil

OIL SHALE ASSAY REPORT

PAGE 19 of 21

R.H.GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1551	3406.0 - 3407.0	.0t	4.1	.0	1.7	97.9	.4		N
1552	3407.0 - 3408.0	.0t	6.1	.0	2.5	96.6	.9		N
1553	3408.0 - 3409.0	.0t	6.0	.0	2.5	96.5	1.0		N
1554	3409.0 - 3410.0	.0t	7.6	.0	3.2	95.5	1.3		N
1555	3410.0 - 3411.0	.0t	7.0	.0	2.9	96.3	.8		N
1556	3411.0 - 3412.0	.0t	6.6	.0	2.8	96.7	.5		N
1557	3412.0 - 3413.0	1.0a	6.0	.4	2.5	96.6	.5		N
1558	3413.0 - 3414.0	2.8a	6.5	1.1	2.7	95.7	.5		N
1559	3414.0 - 3415.0	3.0a	6.7	1.2	2.8	95.5	.6		N
1560	3415.0 - 3416.0	4.3a	6.2	1.7	2.6	95.2	.5		N
1561	3416.0 - 3417.0	4.1a	5.5	1.6	2.3	95.6	.5		N
1562	3417.0 - 3418.0	4.4a	5.3	1.7	2.2	95.4	.7		N
1563	3418.0 - 3419.0	4.5a	5.0	1.7	2.1	95.5	.7		N
1564	3419.0 - 3420.0	4.8a	5.5	1.9	2.3	95.3	.6		N
1565	3420.0 - 3421.0	9.0	5.5	3.4	2.3	93.4	.9	.891	N
1566	3421.0 - 3422.0	32.7	5.0	12.3	2.1	83.4	2.3	.897	N
1567	3422.0 - 3423.0	12.9	5.0	4.9	2.1	91.6	1.4	.910	N
1568	3423.0 - 3424.0	9.3	6.5	3.5	2.7	92.5	1.3	.917	N
1569	3424.0 - 3425.0	3.1a	1.2	1.2	.5	97.8	.5		N
1570	3425.0 - 3426.0	.0t	.6	.0	.2	99.3	.5		N
1571	3426.0 - 3427.0	.5a	.2	.2	.1	99.4	.3		N
1572	3427.0 - 3428.0	.0t	.5	.0	.2	99.5	.3		N
1573	3428.0 - 3429.0	0.0	.7	0.0	.3	99.5	.2		N
1574	3429.0 - 3430.0	0.0	2.0	0.0	.9	98.8	.4		N
1575	3430.0 - 3431.0	.0t	7.9	.0	3.3	96.3	.4		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

a = Specific gravity estimated @ 0.920

t = Trace of Oil

OIL SHALE-ASSAY REPORT

PAGE 20 of 21

R.H. GODBE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°F	Tend to Coke
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss		
1576	3431.0 - 3432.0	.0t	7.5	.0	3.1	96.7	.2		N
1577	3432.0 - 3433.0	.0t	4.1	.0	1.7	98.0	.3		N
1578	3433.0 - 3434.0	0.0	.9	0.0	.4	99.4	.2		N
1579	3434.0 - 3435.0	0.0	2.2	0.0	.9	98.9	.2		N
1580	3435.0 - 3436.0	.0t	5.0	.0	2.1	97.7	.2		N
1581	3436.0 - 3437.0	.0t	4.9	.0	2.0	97.6	.4		N
1582	3437.0 - 3438.0	.0t	6.1	.0	2.6	96.8	.6		N
1583	3438.0 - 3439.0	0.0	2.2	0.0	.9	98.7	.4		N
1584	3439.0 - 3440.0	0.0	3.4	0.0	1.4	98.2	.4		N
1585	3440.0 - 3441.0	0.0	4.2	0.0	1.8	97.8	.5		N
1586	3441.0 - 3442.0	.0t	1.3	.0	.6	99.2	.3		N
1587	3442.0 - 3443.0	0.0	3.2	0.0	1.3	98.4	.3		N
1588	3443.0 - 3444.0	0.0	3.5	0.0	1.5	98.3	.2		N
1589	3444.0 - 3445.0	0.0	3.0	0.0	1.3	98.4	.4		N
1590	3445.0 - 3446.0	0.0	3.4	0.0	1.4	98.2	.4		N
1591	3446.0 - 3447.0	0.0	3.0	0.0	1.3	98.2	.5		N
1592	3447.0 - 3448.0	0.0	2.8	0.0	1.2	98.6	.3		N
1593	3448.0 - 3449.0	0.0	2.8	0.0	1.2	98.4	.4		N
1594	3449.0 - 3450.0	0.0	2.9	0.0	1.2	98.2	.6		N
1595	3450.0 - 3451.0	0.0	2.9	0.0	1.2	98.3	.5		N
1596	3451.0 - 3452.0	0.0	3.1	0.0	1.3	98.3	.4		N
1597	3452.0 - 3453.0	0.0	2.0	0.0	.8	98.8	.4		N
1598	3453.0 - 3454.0	0.0	2.3	0.0	1.0	98.6	.5		N
1599	3454.0 - 3455.0	.0t	1.7	.0	.7	98.9	.4		N
1600	3455.0 - 3456.0	0.0	1.9	0.0	.8	98.9	.3		N

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

t = Trace of Oil

OIL SHALE ASSAY REPORT

PAGE 21

R.H. GOODE
7562 S. SAULSBURY CT.
LITTLETON, CO 80123

Date: 23 MAR 82

Lab #: 820076 - CD #1-82

Project: U.S.G.S.

Core Hole: CW-1

Elevation:

Location:

Remarks: 504 SAMPLES; AIR-DRIED

Sample Number	Client ID	Gallons/Ton		Weight Percent				Specific Gravity 60°/60°
		Oil	Water	Oil	Water	Spent Shale	Gas+ Loss	
1601	3456.0 - 3457.0	0.0	1.7	0.0	.7	99.1	.2	
1602	3457.0 - 3458.0	0.0	1.7	0.0	.7	99.0	.3	
1603	3458.0 - 3459.0	.0t	1.7	.0	.7	99.0	.3	
1604	3459.0 - 3460.0	0.0	1.6	0.0	.7	99.0	.3	

Coking Tendency of Spent Shale:

N=none S=slight M=moderate H=heavy

t = Trace of Oil