

## OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from Gulf Mineral Resources Company's Bonanza No. 8 Located 850 feet  
N/S and 1,850 feet E/W of sec 18, T 12 S, R 25 E, S.L.M., Uintah County, Utah

Surface elevation 6,340 feet

USDA-1006

| Sample number |       | Run No. | Yield fo product |       |             |            | Gal per ton<br>1/ |     | Specific gravity<br>of oil at<br>60°/60° F | Properties of                      |  | Remarks |
|---------------|-------|---------|------------------|-------|-------------|------------|-------------------|-----|--|------------------------------------|--|---------|
|               |       |         | Weight percent   |       | Spent shale | Gas + loss |                   |     |  | spent shale<br>Tendency to<br>coke |  |         |
| Laramie       | Their |         | Oil              | Water |             |            |                   |     | Oil  | Water                              |  |         |
| SBR73-6017    | 36-37 | 82365   | 3.0              | 1.6   | 94.6        | 0.8        | 7.7               | 3.8 | 0.925                                      | None                               |  |         |
| SBR73-6018    | 37-38 | 82366   | 1.8              | 2.0   | 95.0        | 1.2        | 4.8a              | 4.8 |  | None                               |  |         |
| SBR73-6019    | 38-39 | 82367   | 3.8              | 1.5   | 93.7        | 1.0        | 9.9               | 3.6 | .922                                       | None                               |  |         |
| SBR73-6020    | 39-40 | 82368   | 3.4              | 2.0   | 93.6        | 1.0        | 8.8               | 4.8 | .925                                       | None                               |  |         |
| SBR73-6021    | 40-41 | 82369   | 2.2              | 2.5   | 94.7        | .6         | 5.6               | 6.0 | .925                                       | None                               |  |         |
| SBR73-6022    | 41-42 | 82370   | 2.8              | 1.8   | 94.4        | 1.0        | 7.3               | 4.3 | .925                                       | None                               |  |         |
| SBR73-6023    | 42-43 | 82371   | 2.1              | 2.0   | 95.2        | .7         | 5.5               | 4.8 | .924                                       | None                               |  |         |
| SBR73-6024    | 43-44 | 82372   | 4.4              | 1.5   | 92.6        | 1.5        | 11.6              | 3.6 | .920                                       | None                               |  |         |
| SBR73-6025    | 44-45 | 82373   | 3.6              | 1.4   | 93.9        | 1.1        | 9.3               | 3.4 | .933                                       | None                               |  |         |
| SBR73-6026    | 45-46 | 82374   | 3.2              | 1.5   | 94.6        | .7         | 8.5               | 3.6 | .918                                       | None                               |  |         |
| SBR73-6027    | 46-47 | 82375   | 11.3             | 2.0   | 84.4        | 2.3        | 29.3              | 4.8 | .925                                       | None                               |  |         |
| SBR73-6028    | 47-48 | 82376   | 4.2              | 1.6   | 93.0        | 1.2        | 10.9              | 3.8 | .932                                       | None                               |  |         |
| SBR73-6029    | 48-49 | 82377   | 5.1              | 2.0   | 91.6        | 1.3        | 13.3              | 4.8 | .930                                       | None                               |  |         |
| SBR73-6030    | 49-50 | 82378   | 5.3              | 1.8   | 91.5        | 1.4        | 13.8              | 4.3 | .925                                       | None                               |  |         |
| SBR73-6031    | 50-51 | 82379   | 9.4              | 2.2   | 86.0        | 2.4        | 24.3              | 5.3 | .922                                       | None                               |  |         |
| SBR73-6032    | 51-52 | 82380   | 4.5              | 1.3   | 92.5        | 1.7        | 11.8              | 3.1 | .921                                       | None                               |  |         |
| SBR73-6033    | 52-53 | 82381   | 11.2             | 2.5   | 83.7        | 2.6        | 29.6              | 6.0 | .910                                       | None                               |  |         |
| SBR73-6034    | 53-54 | 82382   | 2.6              | 1.8   | 94.4        | 1.2        | 6.7               | 4.3 | .925                                       | None                               |  |         |
| SBR73-6035    | 54-55 | 82383   | 1.4              | 2.3   | 95.4        | .9         | 3.8a              | 5.5 |  | None                               |  |         |
| SBR73-6036    | 55-56 | 82384   | 1.2              | 1.8   | 96.1        | .9         | 3.2a              | 4.3 |  | None                               |  |         |
| SBR73-6037    | 56-57 | 82385   | 1.2              | 2.0   | 96.0        | .8         | 3.1a              | 4.8 |  | None                               |  |         |
| SBR73-6038    | 57-58 | 82386   | 2.2              | 2.4   | 94.5        | .9         | 5.7               | 5.8 | .929                                       | None                               |  |         |
| SBR73-6039    | 58-59 | 82387   | 1.1              | 2.0   | 96.0        | .9         | 3.0a              | 4.8 |  | None                               |  |         |
| SBR73-6040    | 59-60 | 82388   | 1.0              | 1.8   | 95.9        | 1.3        | 2.7a              | 4.2 |  | None                               |  |         |
| SBR73-6041    | 60-61 | 82389   | .6               | 1.5   | 96.5        | 1.4        | 1.6a              | 3.6 |  | None                               |  |         |
| SBR73-6042    | 61-62 | 82390   | .6               | 1.4   | 97.4        | .6         | 1.7a              | 3.4 |  | None                               |  |         |
| SBR73-6043    | 62-63 | 82391   | 1.7              | 1.7   | 95.3        | 1.3        | 4.5a              | 4.1 |  | None                               |  |         |
| SBR73-6044    | 63-64 | 82392   | 5.9              | 2.2   | 90.3        | 1.6        | 15.6              | 5.3 | .911                                       | None                               |  |         |
| SBR73-6045    | 64-65 | 82393   | 4.3              | 2.0   | 91.8        | 1.9        | 11.3              | 4.8 | .916                                       | None                               |  |         |
| SBR73-6046    | 65-66 | 82394   | 10.7             | 2.3   | 84.5        | 2.5        | 28.2              | 5.5 | .909                                       | None                               |  |         |

See footnote at end of table.

Core samples received May 5, 1972; Assays made on air-dried samples

## OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from Gulf Mineral Resources Company's Bonanza No. 8 (Continued)

Surface elevation 6,340 feet

| Sample number |           | Run No. | Yield of product |       |             |            | Gal per ton |     | Specific gravity of oil at 60°/60° F | Properties of spent shale |          | Remarks |
|---------------|-----------|---------|------------------|-------|-------------|------------|-------------|-----|--------------------------------------|---------------------------|----------|---------|
|               |           |         | Weight percent   |       | Spent shale | Gas + loss | 1/          |     |                                      | Tendency to               | coke     |         |
| Laramie       | Their     |         | Oil              | Water |             |            |             |     | Oil                                  |                           |          | Water   |
| SBR73-6047    | 66 -67    | 82395   | 4.9              | 2.2   | 91.4        | 1.5        | 12.7        | 5.3 | 0.915                                |                           | None     |         |
| SBR73-6048    | 67 -68    | 82396   | 4.3              | 1.1   | 92.4        | 2.2        | 11.2        | 2.6 | .921                                 |                           | None     |         |
| SBR73-6049    | 68 -69    | 82397   | 4.4              | 1.9   | 91.5        | 2.2        | 11.4        | 4.6 | .923                                 |                           | None     |         |
| SBR73-6050    | 69 -70    | 82398   | 7.3              | 1.7   | 89.4        | 1.6        | 18.8        | 4.1 | .924                                 |                           | None     |         |
| SBR73-6051    | 70 -71    | 82399   | 9.4              | 1.7   | 87.0        | 1.9        | 24.6        | 4.1 | .919                                 |                           | None     |         |
| SBR73-6052    | 71 -72    | 82400   | 12.4             | 1.6   | 82.6        | 3.4        | 32.9        | 4.0 | .903                                 |                           | None     |         |
| SBR73-6053    | 72 -73    | 82401   | 14.8             | 2.0   | 79.9        | 3.3        | 39.2        | 4.8 | .906                                 |                           | None     |         |
| SBR73-6054    | 73 -74    | 82402   | 7.0              | 1.0   | 89.1        | 2.9        | 18.6        | 2.4 | .908                                 |                           | None     |         |
| SBR73-6055    | 74 -75    | 82403   | 6.2              | 1.5   | 90.5        | 1.8        | 16.2        | 3.6 | .917                                 |                           | None     |         |
| SBR73-6056    | 75.0-75.8 | 82404   | 3.8              | 1.0   | 93.9        | 1.3        | 10.0        | 2.4 | .922                                 |                           | None     |         |
| SBR73-6057    | 76.3-77.0 | 82405   | 5.4              | 1.2   | 91.7        | 1.7        | 14.0        | 2.9 | .923                                 |                           | None     |         |
| SBR73-6058    | 77 -78    | 82408   | 7.5              | 1.2   | 88.8        | 2.5        | 19.6        | 2.9 | .914                                 |                           | None     |         |
| SBR73-6059    | 78 -79    | 82409   | 4.0              | .8    | 93.8        | 1.4        | 10.3        | 2.0 | .921                                 |                           | None     |         |
| SBR73-6060    | 79 -80    | 82410   | 4.9              | 1.2   | 92.6        | 1.3        | 12.8        | 2.9 | .914                                 |                           | None     |         |
| SBR73-6061    | 80 -81    | 82411   | 4.1              | 2.6   | 92.3        | 1.0        | 10.7        | 6.2 | .915                                 |                           | None     |         |
| SBR73-6062    | 81 -82    | 82412   | 3.5              | 1.2   | 94.1        | 1.2        | 9.2         | 2.9 | .919                                 |                           | None     |         |
| SBR73-6063    | 82 -83    | 82413   | 3.7              | .8    | 94.4        | 1.1        | 9.7         | 1.8 | .915                                 |                           | None     |         |
| SBR73-6064    | 83 -84    | 82414   | 4.6              | .6    | 93.3        | 1.5        | 12.1        | 1.4 | .913                                 |                           | None     |         |
| SBR73-6065    | 84 -85    | 82415   | 15.9             | 1.8   | 79.2        | 3.1        | 41.4        | 4.3 | .918                                 |                           | None     |         |
| SBR73-6066    | 85 -86    | 82416   | 7.5              | .7    | 90.0        | 1.8        | 19.8        | 1.7 | .906                                 |                           | None     |         |
| SBR73-6067    | 86 -87    | 82417   | 6.9              | .9    | 90.7        | 1.5        | 18.2        | 2.0 | .911                                 |                           | None     |         |
| SBR73-6068    | 87 -88    | 82418   | 9.3              | 1.1   | 87.4        | 2.2        | 24.5        | 2.6 | .910                                 |                           | None     |         |
| SBR73-6069    | 88 -89    | 82419   | 15.6             | 1.3   | 80.3        | 2.8        | 41.2        | 3.1 | .909                                 |                           | None     |         |
| SBR73-6070    | 89 -90    | 82420   | 16.7             | 1.3   | 75.7        | 6.3        | 43.7        | 3.1 | .915                                 |                           | Moderate |         |
| SBR73-6071    | 90 -91    | 82421   | 23.2             | 1.8   | 69.9        | 5.1        | 61.5        | 4.3 | .905                                 |                           | Moderate |         |
| SBR73-6072    | 91 -92    | 82422   | 30.6             | 3.1   | 60.0        | 6.3        | 81.3        | 7.4 | .902                                 |                           | Heavy    |         |
| SBR73-6073    | 92 -93    | 82423   | 24.2             | 2.5   | 68.2        | 5.1        | 64.4        | 6.0 | .902                                 |                           | Heavy    |         |
| SBR73-6074    | 93 -94    | 82424   | 16.1             | 1.4   | 79.5        | 3.0        | 42.7        | 3.4 | .905                                 |                           | None     |         |
| SBR73-6075    | 94.0-94.6 | 82425   | 20.7             | 2.0   | 73.7        | 3.6        | 54.0        | 4.8 | .917                                 |                           | None     |         |
| SBR73-6076    | 94.6-95.3 | 82426   | 8.3              | 1.2   | 88.6        | 1.9        | 21.4        | 2.9 | .926                                 |                           | None     |         |

See footnote at end of table.

Core samples received May 5, 1972; Assays made on air-dried samples

by Research Center, Laramie, Wyoming, Illustration No. SBR-4538P Sheet 2 of 6 sheets

June 13, 1973

# OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from Gulf Mineral Resources Company's Bonanza No. 8 (Continued)

Surface elevation 6,340 feet

| Sample number | Run        | No.     | Yield of product |       |             |      |             | Specific gravity of oil at 60°/60° F | Properties of spent shale<br>Tendency to coke | Remarks |
|---------------|------------|---------|------------------|-------|-------------|------|-------------|--------------------------------------|---|---------|
|               |            |         | Weight percent   |       | Gas +       |      | Gal per ton |                                      |   |         |
| Laramie       | Their      | 553-962 | Oil              | Water | Spent shale | loss | Oil         | Water                                |   |         |
| SBR73-6077    | 96.2- 97.0 | 82427   | 7.1              | 0.7   | 90.4        | 1.8  | 18.4        | 1.8                                  | 0.923   | None    |
| SBR73-6078    | 97 - 98    | 82428   | 16.7             | 1.3   | 78.9        | 3.1  | 43.7        | 3.1                                  | .914  | Slight  |
| SBR73-6079    | 98 - 99    | 82429   | 5.2              | .6    | 92.9        | 1.3  | 13.6        | 1.4                                  | .917  | None    |
| SBR73-6080    | 99 -100    | 82430   | 14.4             | 1.0   | 81.8        | 2.8  | 37.7        | 2.4                                  | .915  | None    |
| SBR73-6081    | 100 -101   | 82431   | 16.8             | 1.8   | 78.6        | 2.8  | 44.6        | 4.3                                  | .903  | None    |
| SBR73-6082    | 101 -102   | 82432   | 11.7             | 1.5   | 84.5        | 2.3  | 31.1        | 3.6                                  | .903  | None    |
| SBR73-6083    | 102 -103   | 82433   | 9.4              | 1.2   | 87.6        | 1.8  | 25.2        | 2.9                                  | .897  | None    |
| SBR73-6084    | 103 -104   | 82434   | 9.7              | 1.0   | 87.4        | 1.9  | 25.6        | 2.4                                  | .911  | None    |
| SBR73-6085    | 104 -105   | 82435   | 5.0              | .9    | 92.6        | 1.5  | 13.0        | 2.2                                  | .921  | None    |
| SBR73-6086    | 105 -106   | 82436   | 6.8              | 1.1   | 90.1        | 2.0  | 17.7        | 2.6                                  | .920  | None    |
| SBR73-6087    | 106 -107   | 82437   | 16.7             | 2.0   | 78.0        | 3.3  | 43.2        | 4.8                                  | .927  | None    |
| SBR73-6088    | 107 -108   | 82438   | 3.9              | 1.0   | 93.4        | 1.7  | 10.2        | 2.4                                  | .924  | None    |
| SBR73-6089    | 108 -109   | 82439   | 7.6              | .6    | 90.0        | 1.8  | 19.8        | 4.0                                  | .918  | None    |
| SBR73-6090    | 109 -110   | 82440   | 14.3             | 1.3   | 82.0        | 2.4  | 37.6        | 3.1                                  | .915  | None    |
| SBR73-6091    | 110 -111   | 82441   | 8.4              | 1.0   | 88.9        | 1.7  | 22.2        | 2.4                                  | .905  | None    |
| SBR73-6092    | 111 -112   | 82442   | 8.8              | .5    | 88.8        | 1.9  | 23.3        | 1.2                                  | .905  | None    |
| SBR73-6093    | 112 -113   | 82443   | 11.1             | .7    | 85.7        | 2.5  | 29.4        | 1.9                                  | .903  | None    |
| SBR73-6094    | 113 -114   | 82444   | 5.7              | .5    | 92.0        | 1.7  | 15.0        | 1.3                                  | .917  | None    |
| SBR73-6095    | 114 -115   | 82445   | 3.9              | .4    | 94.3        | 1.4  | 9.9         | 1.0                                  | .931  | None    |
| SBR73-6096    | 115 -116   | 82446   | 4.5              | .3    | 93.3        | 1.9  | 11.6        | .7                                   | .924  | None    |
| SBR73-6097    | 116 -117   | 82447   | 7.5              | .8    | 89.9        | 1.8  | 19.4        | 1.9                                  | .926  | None    |
| SBR73-6098    | 117 -118   | 82448   | 3.1              | .6    | 95.2        | 1.1  | 8.0         | 1.4                                  | .922  | None    |
| SBR73-6099    | 118 -119   | 82449   | 1.7              | .3    | 97.0        | 1.0  | 4.5a        | .7                                   |   | None    |
| SBR73-6100    | 119 -120   | 82450   | 1.9              | .3    | 96.7        | 1.1  | 4.8a        | .8                                   |   | None    |
| SBR73-6101    | 120 -121   | 82451   | 4.1              | 1.8   | 93.0        | 1.1  | 10.6        | 4.3                                  | .922  | None    |
| SBR73-6102    | 121 -122   | 82452   | 7.1              | 1.2   | 90.0        | 1.7  | 18.4        | 2.9                                  | .926  | None    |
| SBR73-6103    | 122 -123   | 82453   | 4.1              | .7    | 94.0        | 1.2  | 10.5        | 1.8                                  | .924  | None    |
| SBR73-6104    | 123 -124   | 82454   | 4.4              | .7    | 93.6        | 1.3  | 11.5        | 1.7                                  | .918  | None    |
| SBR73-6105    | 124 -125   | 82455   | 5.6              | .4    | 92.4        | 1.6  | 14.5        | 1.0                                  | .925  | None    |
| SBR73-6106    | 125 -126   | 82456   | 1.0              | .6    | 97.8        | .6   | 2.6a        | 1.4                                  |   | None    |

See footnote at end of table.

Core samples received May 5, 1972; Assays made on air-dried samples

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June 13, 1973

## OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from Gulf Mineral Resources Company's Bonanza No. 8 (Continued)

Surface elevation 6,340 feet

| Sample number |                                  |  | Run No. | Yield of product |     |             |            | Gal per ton<br>1/<br>Oil      Water |     | Specific gravity of oil at 60°/60° F | Properties of spent shale<br>Tendency to coke | Remarks |
|---------------|----------------------------------|--|---------|------------------|-----|-------------|------------|-------------------------------------|-----|--------------------------------------|---|---------|
|               |                                  |  |         | Weight percent   |     | Spent shale | Gas + loss |                                     |     |                                      |   |         |
| Laramie       | Their                            |  | Oil     | Water            |     |             |            |                                     |     |                                      |   |         |
| SBR73-6107    | 126 -127                         |  | 82457   | 3.8              | 1.0 | 94.2        | 1.0        | 9.9                                 | 2.4 | 0.928                                | None  |         |
| SBR73-6108    | 127 -128                         |  | 82458   | 3.4              | 3.5 | 91.9        | 1.2        | 8.6                                 | 8.4 | .939                                 | None  |         |
| SBR73-6109    | 128 -129                         |  | 82459   | 2.8              | 2.8 | 93.2        | 1.2        | 7.1                                 | 6.7 | .937                                 | None  |         |
| SBR73-6110    | 129 -130                         |  | 82460   | 1.5              | .5  | 97.4        | .6         | 4.0a                                | 1.2 |                                      | None  |         |
| SBR73-6111    | 130 -131                         |  | 82461   | 1.8              | .5  | 96.9        | .8         | 4.8a                                | 1.2 |                                      | None  |         |
| SBR73-6112    | 131 -132                         |  | 82462   | 1.9              | .3  | 97.0        | .8         | 4.8a                                | .7  |                                      | None  |         |
| SBR73-6113    | 132 -133                         |  | 82463   | 1.0              | .8  | 97.7        | .5         | 2.7a                                | 1.8 |                                      | None  |         |
| SBR73-6114    | 133 -134                         |  | 82464   | 1.0              | .3  | 98.4        | .3         | 2.5a                                | .7  |                                      | None  |         |
| SBR73-6115    | 134 -135                         |  | 82465   | 3.6              | .2  | 95.8        | .4         | 9.2                                 | .6  | .925                                 | None  |         |
| SBR73-6116    | 135.0-135.9                      |  | 82466   | .4               | .8  | 98.2        | .6         | 1.0a                                | 1.9 |                                      | None  |         |
| SBR73-6117    | 136.2-137 <sup>135.2-136.2</sup> |  | 82467   | .9               | .7  | 97.7        | .7         | 2.4a                                | 1.7 |                                      | None  |         |
| SBR73-6118    | 137 -138                         |  | 82468   | 1.0              | 1.0 | 96.8        | 1.2        | 2.7a                                | 2.4 |                                      | None  |         |
| SBR73-6119    | 138 -139                         |  | 82469   | 5.7              | .8  | 92.1        | 1.4        | 14.7                                | 2.0 | .923                                 | None  |         |
| SBR73-6120    | 139 -140                         |  | 82470   | 2.6              | 1.0 | 95.4        | 1.0        | 6.9                                 | 2.4 | .904                                 | None  |         |
| SBR73-6121    | 140 -141                         |  | 82471   | 4.7              | .7  | 92.7        | 1.9        | 12.4                                | 1.7 | .913                                 | None  |         |
| SBR73-6122    | 141 -142                         |  | 82472   | 5.0              | .8  | 93.2        | 1.0        | 13.3                                | 1.9 | .908                                 | None  |         |
| SBR73-6123    | 142 -143                         |  | 82473   | 2.6              | .6  | 96.0        | .8         | 7.0                                 | 1.4 | .902                                 | None  |         |
| SBR73-6124    | 143 -144                         |  | 82474   | 4.0              | .8  | 94.0        | 1.2        | 10.4                                | 1.9 | .914                                 | None  |         |
| SBR73-6125    | 144 -145                         |  | 82475   | 3.4              | .6  | 95.1        | .9         | 8.8                                 | 1.6 | .917                                 | None  |         |
| SBR73-6126    | 145 -146                         |  | 82476   | 2.0              | .3  | 96.2        | 1.5        | 5.2a                                | .8  |                                      | None  |         |
| SBR73-6127    | 146 -147                         |  | 82477   | 2.2              | .7  | 96.2        | .9         | 5.9                                 | 1.6 | .912                                 | None  |         |
| SBR73-6128    | 147 -148                         |  | 82478   | 3.0              | .9  | 94.9        | 1.2        | 7.8                                 | 2.2 | .923                                 | None  |         |
| SBR73-6129    | 148 -149                         |  | 82479   | 2.0              | 1.5 | 95.5        | 1.0        | 2.0a                                | 3.6 |                                      | None  |         |
| SBR73-6130    | 149 -150                         |  | 82480   | 1.8              | 3.0 | 94.0        | 1.2        | 4.8a                                | 7.2 |                                      | None  |         |
| 6131          | 150 -151                         |  | 82481   | 1.8              | 1.0 | 96.2        | 1.0        | 4.8a                                | 2.4 |                                      | None  |         |
| 6132          | 151 -152                         |  | 82482   | 1.3              | 2.0 | 95.6        | 1.1        | 3.5a                                | 4.8 |                                      | None  |         |
| 6133          | 152 -153                         |  | 82483   | 5.3              | .6  | 92.6        | 1.5        | 14.1                                | 1.4 | .904                                 | None  |         |
| 6134          | 153 -154                         |  | 82484   | 5.4              | 2.0 | 91.0        | 1.6        | 14.2                                | 4.8 | .905                                 | None  |         |
| 6135          | 154 -155                         |  | 82485   | 3.1              | 1.8 | 93.9        | 1.2        | 8.2                                 | 4.3 | .910                                 | None  |         |
| 6136          | 155 -156                         |  | 82486   | 2.6              | 1.2 | 95.1        | 1.1        | 6.6                                 | 2.9 | .923                                 | None  |         |

Note at end of table.

Core samples received May 5, 1972; Assays made on air-dried samples

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June 13, 1973

## OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from Gulf Mineral Resources Company's Bonanza No. 8 (Continued)

Surface elevation 6,340 feet

| Sample number |               | Run No. | Yield of product |       |             |            | Gal per ton |     | Specific gravity of oil at 60°/60° F | Properties of spent shale<br>Tendency to |  | Remarks |
|---------------|---------------|---------|------------------|-------|-------------|------------|-------------|-----|--------------------------------------|--|--|---------|
|               |               |         | Weight percent   |       | Spent shale | Gas + loss |             |     |                                      |  |  |         |
| Laramie       | Their 156-159 |         | Oil              | Water |             |            |             |     | Oil 1/23                             | Water                                    |  | coke    |
| SBR73-6137    | 159-160       | 82487   | 7.7              | 0.2   | 90.7        | 1.4        | 20.0        | 0.4 | 0.925                                | None                                     |  |         |
| SBR73-6138    | 160-161       | 82488   | 2.2              | .2    | 97.0        | .6         | 5.7         | .4  | .930                                 | None                                     |  |         |
| SBR73-6139    | 161-162       | 82489   | 2.9              | .2    | 96.0        | .9         | 7.5         | .5  | .927                                 | None                                     |  |         |
| SBR73-6140    | 162-163       | 82490   | 2.8              | .1    | 95.2        | 1.9        | 7.2         | .3  | .930                                 | None                                     |  |         |
| SBR73-6141    | 163-164       | 82491   | 0                | .5    | 98.0        | 1.5        | No oil      | 1.2 |                                      | None                                     |  |         |
| SBR73-6142    | 164-165       | 82492   | 0                | 1.0   | 97.3        | 1.7        | No oil      | 2.4 |                                      | None                                     |  |         |
| SBR73-6143    | 165-166       | 82493   | 0                | 1.4   | 97.1        | 1.5        | No oil      | 3.4 |                                      | None                                     |  |         |
| SBR73-6144    | 166-167       | 82494   | 0                | 1.1   | 96.8        | 2.1        | No oil      | 2.7 |                                      | None                                     |  |         |
| SBR73-6145    | 167-168       | 82495   | 4.3              | .3    | 93.5        | 1.9        | 11.2        | .6  | .932                                 | None                                     |  |         |
| SBR73-6146    | 168-169       | 82496   | 4.2              | .2    | 93.3        | 2.3        | 10.9        | .4  | .936                                 | None                                     |  |         |
| SBR73-6147    | 169-170       | 82497   | 1.8              | .1    | 96.0        | 2.1        | 4.8a        | .1  |                                      | None                                     |  |         |
| SBR73-6148    | 170-171       | 82498   | .8               | .2    | 96.9        | 2.1        | 2.1a        | .5  |                                      | None                                     |  |         |
| SBR73-6149    | 171-172       | 82499   | 1.2              | .5    | 96.5        | 1.8        | 3.1a        | 1.2 |                                      | None                                     |  |         |
| SBR73-6150    | 172-173       | 82500   | 1.8              | .2    | 96.2        | 1.8        | 4.6a        | .6  |                                      | None                                     |  |         |
| SBR73-6151    | 173-174       | 82501   | .5               | .7    | 97.2        | 1.6        | 1.4a        | 1.7 |                                      | None                                     |  |         |
| SBR73-6152    | 174-175       | 82502   | 0                | 1.4   | 98.1        | .5         | No oil      | 3.3 |                                      | None                                     |  |         |
| SBR73-6153    | 175-176       | 82503   | 0                | 1.2   | 98.4        | .4         | Trace       | 2.9 |                                      | None                                     |  |         |
| SBR73-6154    | 176-177       | 82504   | 2.1              | .6    | 96.4        | .9         | 5.9         | 1.4 | .934                                 | None                                     |  |         |
| SBR73-6155    | 177-178       | 82505   | 5.1              | .1    | 94.1        | .7         | 13.0        | .2  | .935                                 | None                                     |  |         |
| SBR73-6156    | 178-179       | 82506   | 4.4              | .4    | 94.4        | .8         | 11.3        | .8  | .933                                 | None                                     |  |         |
| SBR73-6157    | 179-180       | 82507   | 2.8              | .2    | 96.2        | .8         | 7.1         | .6  | .938                                 | None                                     |  |         |
| SBR73-6158    | 180-181       | 82508   | 2.5              | .3    | 96.4        | .8         | 6.4         | .7  | .936                                 | None                                     |  |         |
| SBR73-6159    | 181-182       | 82509   | 2.3              | .3    | 96.7        | .7         | 5.9         | .7  | .940                                 | None                                     |  |         |
| SBR73-6160    | 182-183       | 82510   | 2.1              | .3    | 96.8        | .8         | 5.5         | .7  | .937                                 | None                                     |  |         |
| SBR73-6161    | 183-184       | 82511   | 2.4              | .2    | 96.8        | .6         | 6.0         | .5  | .938                                 | None                                     |  |         |
| SBR73-6162    | 184-185       | 82512   | 1.4              | .5    | 97.4        | .7         | 3.7a        | 1.2 |                                      | None                                     |  |         |
| SBR73-6163    | 185-186       | 82513   | .8               | .7    | 98.2        | .3         | 2.0a        | 1.7 |                                      | None                                     |  |         |
| SBR73-6164    | 186-187       | 82514   | 0                | .5    | 98.9        | .6         | No oil      | 1.2 |                                      | None                                     |  |         |
| SBR73-6165    | 187-188       | 82515   | 0                | .0    | 99.2        | .8         | No oil      | .3  |                                      | None                                     |  |         |
| SBR73-6166    | 188-189       | 82516   | 0                | .5    | 98.9        | .6         | No oil      | 1.2 |                                      | None                                     |  |         |

See footnote at end of table.

Core samples received May 5, 1972; Assays made on air-dried samples

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June 13, 1973

# OIL-SHALE ASSAYS BY MODIFIED FISCHER RETORT METHOD

Samples from Gulf Mineral Resources Company's Bonanza No. 8 (Continued)

Surface elevation 6,340 feet

| Sample number |           | Run No. | Yield of product |       |             |            | Specific gravity of oil at 60°/60° F | Properties of spent shale |      | Remarks |
|---------------|-----------|---------|------------------|-------|-------------|------------|--------------------------------------|---------------------------|------|---------|
|               |           |         | Weight percent   |       | Spent shale | Gas + loss |                                      | Gal per ton               |      |         |
| Laramie       | Their     |         | Oil              | Water |             |            |                                      |                           | Oil  |         |
| SBR73-6167    | 189-190   | 82517   | 0                | 0.5   | 98.0        | 1.5        | No oil                               | 1.2                       | coke |         |
| SBR73-6168    | 190-191   | 82518   | 0                | .6    | 97.8        | 1.6        | No oil                               | 1.4                       | None |         |
| SBR73-6169    | 191-192   | 82519   | 0                | .7    | 98.0        | 1.3        | No oil                               | 1.6                       | None |         |
| SBR73-6170    | 192-193   | 82520   | 0                | 1.7   | 97.9        | .4         | No oil                               | 4.0                       | None |         |
| SBR73-6171    | 193-194   | 82521   | 0                | 1.9   | 97.4        | .7         | No oil                               | 4.5                       | None |         |
| SBR73-6172    | 194-195   | 82522   | 0                | 2.0   | 96.9        | 1.1        | No oil                               | 4.9                       | None |         |
| SBR73-6173    | 195-196.2 | 82523   | 0                | 1.1   | 98.5        | .4         | No oil                               | 2.7                       | None |         |

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

Core samples received May 5, 1972; Assays made on air-dried samples

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