

Summary of Core Analysis Report  
Murphy NW Federal #1

Routine Analysis (200 psi overburden)

3300 psi Overburden

| Sample<br>Number | Depth<br>(Test) | Full Diameter Core   |                     | Perm (md)<br>Horizontal | Core Plug<br>Perm (md)<br>Horizontal |
|------------------|-----------------|----------------------|---------------------|-------------------------|--------------------------------------|
|                  |                 | Perm (md)<br>Maximum | Perm (md)<br>90 Deg |                         |                                      |
| 1                | 6551-52         | 0.02                 | <0.01               | 0.015                   | <0.001                               |
| 2                | 6552-53         | 0.03                 | 0.03                | -----                   | -----                                |
| 3                | 6553-54         | 0.07                 | 0.04                | -----                   | -----                                |
| 4                | 6554-55         | <0.01                | <0.01               | 0.017                   | <0.001                               |
| 5                | 6555-56         | 0.03                 | <0.01               | -----                   | -----                                |
| 6                | 6556-57         | 0.06                 | 0.06                | -----                   | -----                                |
| 7                | 6557-58         | 0.06                 | 0.03                | -----                   | -----                                |
| 8                | 6558-59         | 0.03                 | <0.01               | -----                   | -----                                |
| 9                | 6559-60         | 0.03                 | 0.03                | -----                   | -----                                |
| 10               | 6560-61         | <0.01                | <0.01               | -----                   | -----                                |
| 11               | 6561-62         | 778.                 | 6.2                 | 0.017                   | <0.001                               |
| 12               | 6562-63         | 1.0                  | 0.23                | 0.586                   | 0.007                                |
| 13               | 6563-64         | 0.07                 | 0.04                | 0.016                   | <0.001                               |
| 14               | 6564-65         | 0.04                 | 0.02                | -----                   | -----                                |
| 15               | 6565-66         | 0.12                 | 0.07                | 0.013                   | <0.001                               |
| 16               | 6566-67         | 0.05                 | 0.03                | -----                   | -----                                |
| 17               | 6567-68         | 0.05                 | 0.03                | 0.137                   | 0.029                                |
| 18               | 6568-69         | 0.04                 | 0.04                | -----                   | -----                                |
| 19               | 6569-70         | 0.02                 | <0.01               | -----                   | -----                                |
| 20               | 6570-71         | <0.01                | <0.01               | -----                   | -----                                |
| 21               | 6571-72         | 0.03                 | <0.01               | -----                   | -----                                |
| 22               | 6572-73         | 0.13                 | <0.01               | 0.014                   | 0.001                                |
| 23               | 6573-74         | 0.02                 | 0.02                | 0.016                   | <0.001                               |
| 24               | 6574-75         | <0.01                | <0.01               | -----                   | -----                                |
| 25               | 6575-76         | 0.03                 | <0.01               | -----                   | -----                                |
| 26               | 6576-77         | <0.01                | <0.01               | -----                   | -----                                |
| 27               | 6577-78         | 0.03                 | 0.03                | -----                   | -----                                |
| 28               | 6578-79         | 0.03                 | <0.01               | -----                   | -----                                |
| 29               | 6579-80         | 0.02                 | 0.02                | 0.019                   | <0.001                               |
| 30               | 6580-81         | <0.01                | <0.01               | 0.032                   | <0.001                               |
| 31               | 6581-82         | 0.02                 | <0.01               | -----                   | -----                                |
| 32               | 6582-83         | 0.02                 | <0.01               | -----                   | -----                                |
| 33               | 6583-84         | 0.02                 | 0.02                | -----                   | -----                                |
| 34               | 6584-85         | 0.07                 | 0.04                | -----                   | -----                                |
| 35               | 6585-86         | 0.40                 | <0.01               | 0.034                   | 0.003                                |
| 36               | 6586-87         | <0.01                | -----               | -----                   | -----                                |
| 37               | 6587-88         | <0.01                | -----               | 0.039                   | 0.005                                |
| 38               | 6588-89         | 2.1                  | <0.01               | 0.037                   | <0.001                               |
| 39               | 6589-90         | 0.05                 | 0.03                | -----                   | -----                                |
| 40               | 6590-91         | 0.02                 | 0.02                | -----                   | -----                                |
| 41               | 6591-92         | 0.05                 | 0.05                | -----                   | -----                                |
| 42               | 6592-93         | 0.06                 | 0.03                | -----                   | -----                                |
| 43               | 6593-94         | 0.03                 | <0.01               | -----                   | -----                                |
| 44               | 6594-95         | 0.07                 | 0.04                | -----                   | -----                                |
| 45               | 6595-96         | 0.04                 | <0.01               | -----                   | -----                                |

6596-98

LOST CORE

Summary of Core Analysis Report  
Murphy NW Federal #1

Routine Analysis (200 psi Overburden)

3300 psi Overburden

| Sample<br>Number | Depth<br>(Test) | Full Diameter Core   |                     | Perm (md)  |  | Core Plug               |
|------------------|-----------------|----------------------|---------------------|------------|--|-------------------------|
|                  |                 | Perm (md)<br>Maximum | Perm (md)<br>90 Deg | Horizontal |  | Perm (md)<br>Horizontal |
| 46               | 6598-99         | 0.08                 | 0.03                | -----      |  | -----                   |
| 47               | 6599-00         | 0.05                 | 0.03                | -----      |  | -----                   |
| 48               | 6600-01         | 0.05                 | 0.03                | -----      |  | -----                   |
| 49               | 6601-02         | 0.08                 | 0.03                | 0.067      |  | 0.021                   |
| 50               | 6602-03         | 0.04                 | 0.04                | 0.082      |  | 0.013                   |
| 51               | 6603-04         | 0.05                 | 0.03                | -----      |  | -----                   |
| 52               | 6604-05         | 0.12                 | 0.03                | -----      |  | -----                   |
| 53               | 6605-06         | 0.23                 | 0.04                | -----      |  | -----                   |
| 54               | 6606-07         | 0.02                 | 0.02                | -----      |  | -----                   |
| 55               | 6607-08         | 0.02                 | <0.01               | -----      |  | -----                   |
| 56               | 6608-09         | <0.01                | <0.01               | -----      |  | -----                   |
| 57               | 6609-10         | 0.03                 | <0.01               | -----      |  | -----                   |
| 58               | 6610-11         | 0.02                 | 0.02                | -----      |  | -----                   |
| 59               | 6611-12         | 0.03                 | 0.03                | -----      |  | -----                   |
| 60               | 6612-13         | 0.50                 | 0.20                | -----      |  | -----                   |
| 61               | 6613-14         | 0.02                 | 0.02                | -----      |  | -----                   |
| 62               | 6614-15         | 0.08                 | 0.04                | -----      |  | -----                   |
| 63               | 6615-16         | 0.64                 | 0.06                | -----      |  | -----                   |
| 64               | 6616-17         | 0.09                 | 0.05                | -----      |  | -----                   |
| 65               | 6617-18         | 0.20                 | 0.03                | -----      |  | -----                   |
| 66               | 6618-19         | <0.01                | -----               | -----      |  | -----                   |
| 67               | 6619-20         | <0.01                | -----               | -----      |  | -----                   |
| 68               | 6620-21         | <0.01                | -----               | -----      |  | -----                   |
| 69               | 6621-22         | 0.40                 | 0.09                | -----      |  | -----                   |
| 70               | 6622-23         | 0.03                 | 0.03                | -----      |  | -----                   |
| 71               | 6623-24         | 0.04                 | <0.01               | -----      |  | -----                   |
| 72               | 6624-25         | 0.05                 | 0.05                | -----      |  | -----                   |
|                  | 6625-61         | LOST CORE            |                     |            |  |                         |