

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

LITHOLOGIC AND GEOPHYSICAL LOGS OF HOLES DRILLED IN THE WASATCH
PLATEAU KNOWN RECOVERABLE COAL RESOURCE AREA,
CARBON, EMERY, AND SEVIER COUNTIES, UTAH

By

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Lithologic and Geophysical Logs of Holes Drilled in the Wasatch
Plateau Known Recoverable Coal Resource Area,
Carbon, Emery, and Sevier Counties, Utah

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INTRODUCTION

Twenty-eight holes for a total footage of 26,999 were rotary drilled in the Wasatch Plateau Known Recoverable Coal Resource Area (KRCRA), for the U.S. Geological Survey in September, October, and November 1976. This drilling was done to obtain information on the thickness, quality, and extent of coal in the Upper Cretaceous Blackhawk Formation and on the lithology of the enclosing rocks. The overall project goal is the evaluation and classification of federally owned resources and lands in the Wasatch Plateau KRCRA.

Four separate and widely spaced areas were drilled (figs. 1-4). Table 1 shows a listing of these areas and the quadrangles involved. The holes were drilled using three truck-mounted rotary drilling rigs, under contract to the U.S. Geological Survey. Drilling mediums used were air, air with injected water, air with foam, and drilling mud with water. The latter was used most frequently. Cuttings were collected over 5-foot intervals, described, and sampled.

All drill holes were logged by geophysical methods except as noted in table 2. The suite of logs run includes spontaneous-potential, resistivity, natural gamma, and density (figs. 9-32).

Lithologic descriptions in this report are based on sample descriptions made in the field by L. F. Blanchard, E. G. Ellis, J. V. Roberts, and T. J. Pike. Where more than one lithology is described, they are listed in order of decreasing abundance; relative abundances of approximately 5 percent are indicated as trace amounts.

In these lithologic descriptions, sandstone refers to a rock in which sand-size quartz grains compositionally predominate over other constituents. Shale refers to a rock displaying fissility and compositionally dominated by the clay-sized fraction; if fissility is not present, the rock is classed as a mudstone. Silty shale means a fissile rock in which clay and silt are in subequal proportions. Siltstone refers to a rock lacking visible fissility and dominated by the silt-size fraction. A rock intermediate between coal and carbonaceous shale is described as shaly coal.

In the coal sections presented in figures 5-8, the thickness and depth of the coal beds shown are based on the geophysical logs.

ACKNOWLEDGMENTS

Becker Drills, Inc., under Contract No. 14-08-0001-15097, awarded by the U.S. Geological Survey, did all the drilling. Logging was done by Century Geophysical Corporation. Permission to drill was granted by officials of the Manti-LaSal and Fishlake National Forests, Utah, and the several individuals who own surface rights in the Beaver Creek area.

Table 1.--Drilling area locations

| <u>Drilling area</u> | <u>Quadrangle</u> | <u>Location (Salt Lake principal meridian)</u> |
|----------------------|----------------------|--|
| Beaver Creek----- | Scofield | Tps. 12-13 S., Rs. 7-8 E. |
| North Horn Mountain- | Castledale | Tps. 18-19 S., Rs. 6-7 E. |
| | Hiawatha | T. 18 S., R. 7 E. |
| The Pines----- | Acord Lakes | T. 21 S., R. 5 E. |
| | Emery West | T. 21 S., R. 5 E. |
| | Flagstaff Peak | T. 21 S., R. 5 E. |
| Old Woman Plateau--- | Acord Lakes | T. 22 S., R. 4 E. |
| | Old Woman Plateau | T. 23 S., R. 4 E. |

Table 2.--Drill-hole locations, elevations, and depths of drilling and logging

[All depths in feet; to convert to meters, multiply by 0.3048]

| Hole No. | Location | Surface elevation | Total depth drilled | Total depth logged |
|---------------------|------------------------------------|-------------------|---------------------|--------------------|
| Beaver Creek | | | | |
| *W-BC-1-S | NE½ NE¼ sec. 2, T. 13 S., R. 7 E. | 8,300 | 1,415 | ----- |
| W-BC-2-S | SW¼ SW¼ sec. 11, T. 13 S., R. 7 E. | 9,150 | 1,296 | 1,290 |
| W-BC-3-S | SW¼ SE¼ sec. 12, T. 13 S., R. 7 E. | 8,525 | 900 | 900 |
| W-BC-4-S | N¼ NE¼ sec. 8, T. 13 S., R. 8 E. | 8,250 | 1,135 | 1,120 |
| W-BC-5-S | N¼ SW¼ sec. 31, T. 12 S., R. 8 E. | 8,400 | 1,320 | 1,310 |
| **W-BC-6-S | N¼ NW¼ sec. 4, T. 13 S., R. 8 E. | 8,125 | 160 | ----- |
| North Horn Mountain | | | | |
| W-NH-1-CD | NE½ SW¼ sec. 1, T. 19 S., R. 6 E. | 8,400 | 1,180 | 1,150 |
| W-NH-2-CD | N¼ NE¼ sec. 32, T. 18 S., R. 7 E. | 8,600 | 994 | 992 |
| **W-NH-2A-CD | N¼ NE¼ sec. 32, T. 18 S., R. 7 E. | 8,600 | 1,030 | 1,026 |
| W-NH-3-CD | N¼ NW¼ sec. 28, T. 18 S., R. 7 E. | 8,625 | 1,130 | 1,130 |
| W-NH-4-CD | NE½ NW¼ sec. 30, T. 18 S., R. 7 E. | 8,300 | 860 | 850 |
| W-NH-5-CD | SE½ NW¼ sec. 19, T. 18 S., R. 7 E. | 8,325 | 970 | 965 |
| W-NH-6-H | SW¼ SE¼ sec. 18, T. 18 S., R. 7 E. | 8,525 | 1,180 | 1,172 |
| W-NH-7-CD | NE½ NW¼ sec. 20, T. 18 S., R. 7 E. | 8,625 | 1,100 | 1,092 |
| The Pines | | | | |
| W-TP-1-AL | SE½ NW¼ sec. 20, T. 21 S., R. 5 E. | 8,300 | 1,020 | 1,010 |
| W-TP-2-EW | N¼ NE¼ sec. 28, T. 21 S., R. 5 E. | 8,480 | 1,193 | 1,193 |
| W-TP-3-EW | NE½ SE¼ sec. 23, T. 21 S., R. 5 E. | 8,650 | 1,030 | 942 |
| W-TP-4-EW | SW¼ NE¼ sec. 14, T. 21 S., R. 5 E. | 8,465 | 1,080 | 1,080 |
| W-TP-5-EW | SE½ SE¼ sec. 16, T. 21 S., R. 5 E. | 8,350 | 975 | 975 |
| W-TP-6-FP | SE½ NE¼ sec. 9, T. 21 S., R. 5 E. | 8,350 | 1,000 | 996 |

Table 2.--Drill-hole locations, elevations, and depths of drilling and logging--Continued

[All depths in feet; to convert to meters, multiply by 0.3048]

| Hole No. | Location | | Surface elevation | Total depth | |
|----------------|--|-------------------|-------------------|-------------|--------|
| | | | | drilled | logged |
| | | Old Woman Plateau | | | |
| W-OWP-1-OWP | NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 27, T. 23 S., R. 4 E. | | 8,080 | 740 | 698 |
| W-OWP-2-OWP | NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 16, T. 23 S., R. 4 E. | | 8,150 | 710 | 682 |
| *W-OWP-2.5-OWP | SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 9, T. 23 S., R. 4 E. | | 8,260 | 891 | ----- |
| W-OWP-3-OWP | NW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 10, T. 23 S., R. 4 E. | | 8,370 | 858 | 832 |
| W-OWP-4-AL | SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 34, T. 22 S., R. 4 E. | | 8,310 | 930 | 767 |
| W-OWP-5-AL | SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 22, T. 22 S., R. 4 E. | | 8,220 | 1,086 | 1,086 |
| W-OWP-6-AL | SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 14, T. 22 S., R. 4 E. | | 8,290 | 818 | 818 |

* No geophysical log on this hole.

** No lithologic description on this hole.

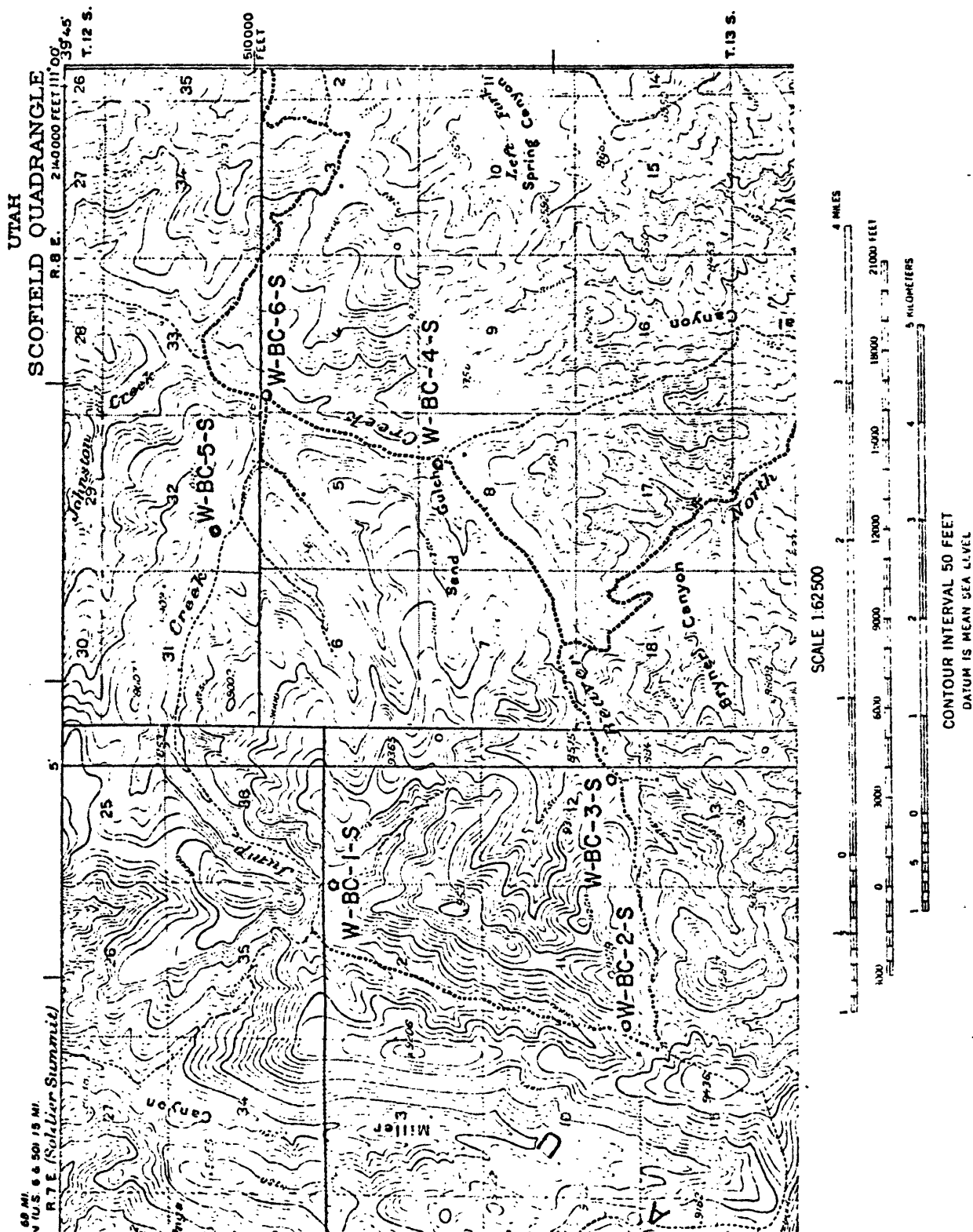


Figure 1.--Drill-hole locations in the Beaver Creek area, Scofield quadrangle, Carbon County, Utah.

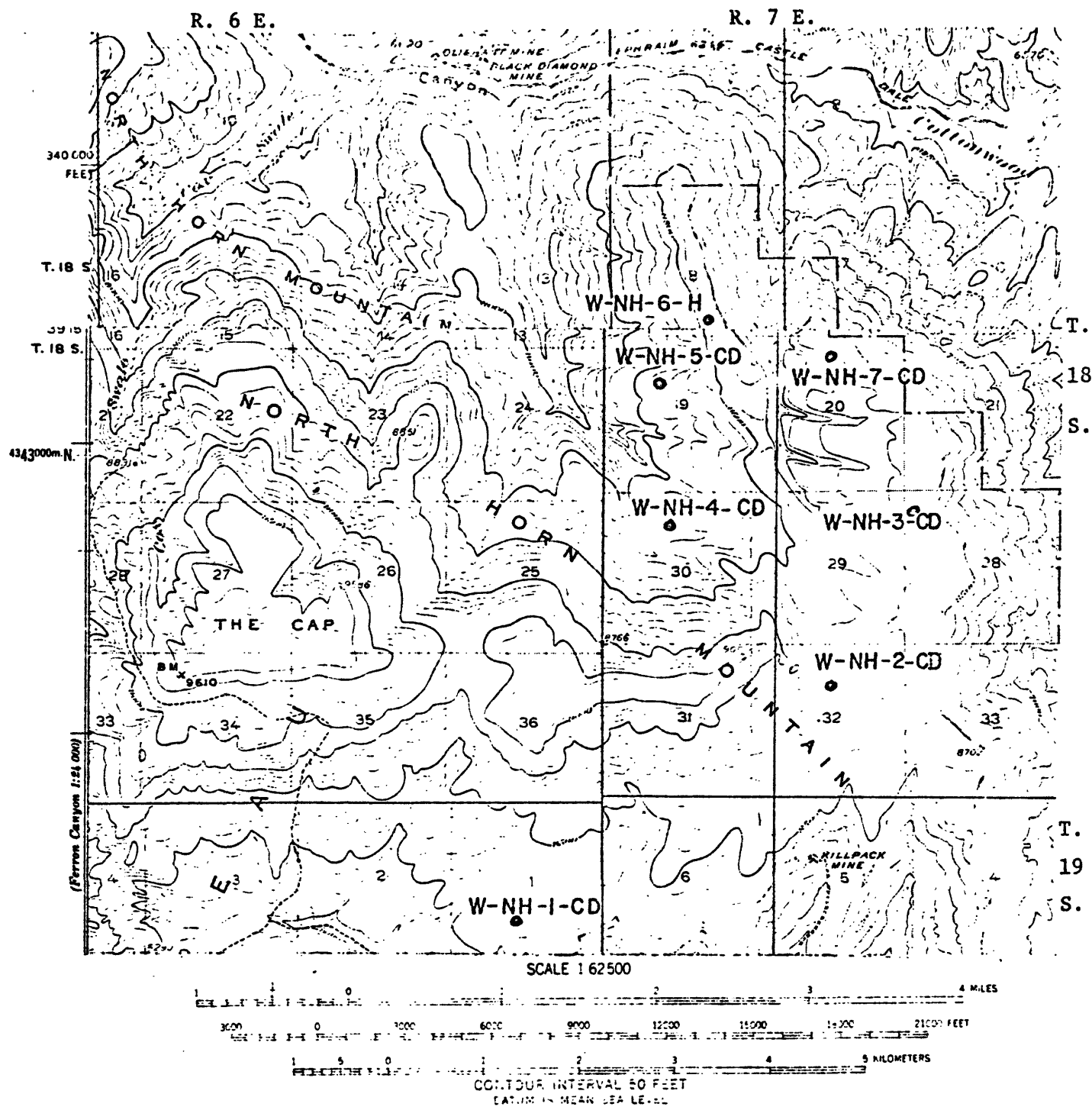


Figure 2.--Drill-hole locations in the North Horn Mountain area, Castledale and Hiawatha quadrangles, Emery County, Utah.

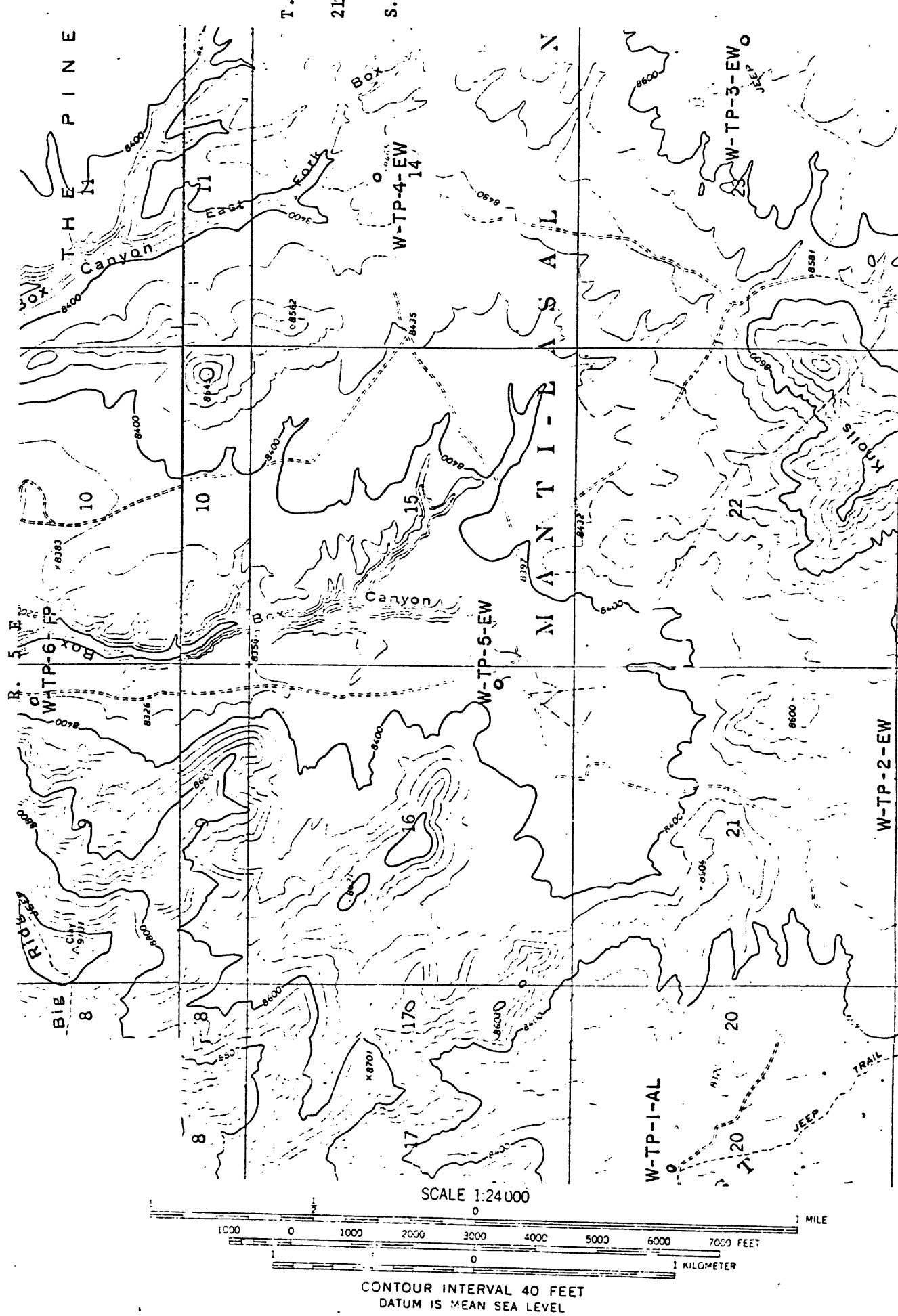
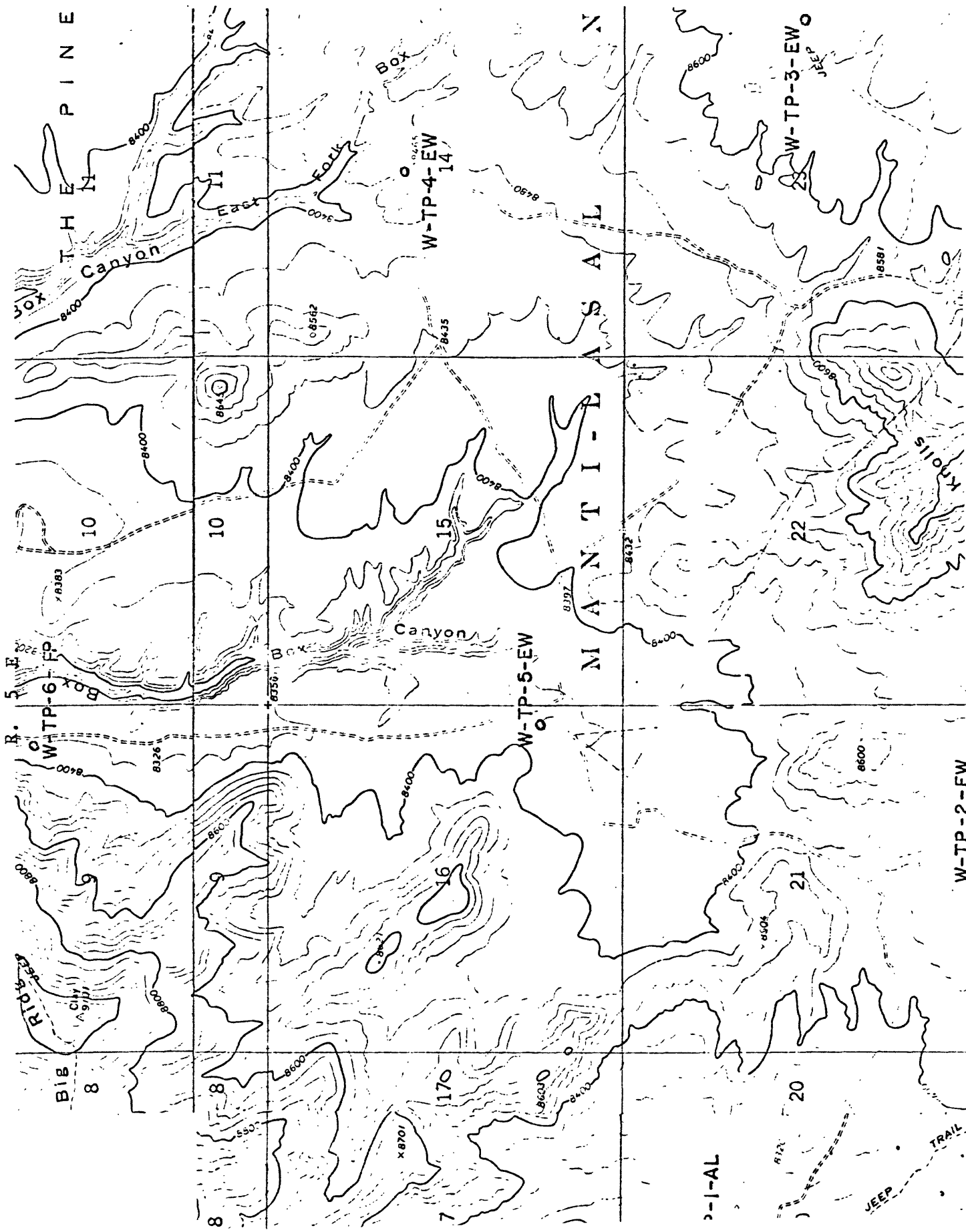


Figure 3.--Drill-hole locations in the Pines area, Acord Lakes, Emery West, and Flagstaff Peak quadrangles, Sevier County, Utah.

T. 21 S.



Drill-hole W-BC-1-S

NE 1/4 Sec. 2, T. 13 S., R. 7 E., Salt Lake Principal Meridian, Scofield quadrangle, Carbon County, Utah; collar elevation 8,800 ft; begun September 23, 1976, abandoned September 30, 1976; sampled by L. F. Blanchard, Tom Pike, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Soil; minor fragments of yellow-brown sandstone and gray shale----- | 0 | 5 |
| Soil; minor fragments of yellow-brown sandstone and gray shale----- | 5 | 10 |
| Soil; minor fragments of yellow-brown sandstone and gray shale----- | 10 | 15 |
| Soil; minor fragments of yellow-brown sandstone and gray shale----- | 15 | 20 |
| Sandstone, medium, gray; minor gray shale----- | 20 | 25 |
| Sandstone, medium, gray; minor gray shale----- | 25 | 30 |
| Shale, silty, dark-gray----- | 30 | 35 |
| Shale, silty, dark-gray----- | 35 | 40 |
| Siltstone, gray----- | 40 | 45 |
| Siltstone, gray; minor black carbonaceous shale----- | 45 | 50 |
| Siltstone, gray; minor black carbonaceous shale----- | 50 | 55 |
| Shale, gray; minor carbonaceous shale----- | 55 | 60 |
| Shale, gray; minor gray siltstone; trace carbonaceous shale----- | 60 | 65 |
| Shale, gray; minor gray siltstone; trace carbonaceous shale----- | 65 | 70 |

Drill-hole W-BC-1-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor gray siltstone; trace carbonaceous shale; minor gray medium sandstone----- | 70 | 75 |
| Shale, gray; minor gray siltstone; gray fine sandstone; trace carbonaceous shale----- | 75 | 80 |
| Shale, gray; minor gray siltstone; gray fine sandstone; trace carbonaceous shale----- | 80 | 85 |
| Shale, bentonitic, gray; minor gray-green shale; gray silt- stone; gray fine sandstone----- | 85 | 90 |
| Sandstone, very fine, gray----- | 90 | 95 |
| Sandstone, very fine, brown-gray----- | 95 | 100 |
| Siltstone, gray; minor gray bentonitic shale----- | 100 | 105 |
| Sandstone, very fine, gray----- | 105 | 110 |
| Sandstone, very fine, gray----- | 110 | 115 |
| Sandstone, very fine, gray; trace coal----- | 115 | 120 |
| Sandstone, fine, gray; minor gray shale; trace carbonaceous shale----- | 120 | 125 |
| Sandstone, fine, gray; minor gray shale; trace carbonaceous shale----- | 125 | 130 |
| Sandstone, fine, gray; trace carbonaceous shale; white shale----- | 130 | 135 |
| Sandstone, fine, gray; trace carbonaceous shale; white shale----- | 135 | 140 |

Drill-hole W-BC-1-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray; trace carbonaceous shale; white shale- | 140 | 145 |
| Sandstone, fine, gray; trace carbonaceous shale; white shale- | 145 | 150 |
| Sandstone, fine, gray; trace carbonaceous shale; white shale- | 150 | 155 |
| Sandstone, fine, gray, trace carbonaceous shale; white shale- | 155 | 160 |
| Sandstone, fine, gray; trace carbonaceous shale; white shale; trace gray-green shale----- | 160 | 165 |
| Sandstone, very fine, gray; minor gray shale; trace gray-green shale----- | 165 | 170 |
| Sandstone, very fine, gray; minor gray shale; trace gray-green shale; trace white shale----- | 170 | 175 |
| Shale, dark-gray; minor gray siltstone; trace white shale; carbonaceous shale----- | 175 | 180 |
| Shale, dark-gray; minor gray siltstone; trace white shale; carbonaceous shale----- | 180 | 185 |
| Shale, dark-gray; minor carbonaceous shale; trace coal----- | 185 | 190 |
| Sandstone, fine, gray; minor gray-green shale; trace carbon- aceous shale; coal----- | 190 | 195 |
| Sandstone, fine, gray; minor gray-green shale; trace carbon- aceous shale; coal----- | 195 | 200 |
| Sandstone, fine, gray; minor gray shale; trace coal----- | 200 | 205 |
| Sandstone, fine, gray; trace coal; carbonaceous shale----- | 205 | 210 |
| Sandstone, fine, gray; trace coal; carbonaceous shale; minor white shale----- | 210 | 215 |
| Sandstone, fine, gray; trace coal; carbonaceous shale; minor white shale----- | 215 | 220 |

Drill-hole W-BC-1-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; minor light-gray fine sandstone; gray shale; trace carbonaceous shale----- | 220 | 225 |
| Siltstone, gray; minor light-gray fine sandstone; gray shale; trace carbonaceous shale----- | 225 | 230 |
| Siltstone, gray; minor light-gray fine sandstone; gray shale; trace carbonaceous shale; minor carbonaceous shale----- | 230 | 235 |
| Siltstone, gray; minor gray shale; trace coal; carbonaceous shale; white shale----- | 235 | 240 |
| Siltstone, gray; minor gray shale; trace coal; carbonaceous shale; white shale----- | 240 | 245 |
| Siltstone, gray; minor gray shale; trace coal; carbonaceous shale; white shale----- | 245 | 250 |
| Shale, gray; minor gray siltstone; carbonaceous shale; trace coal----- | 250 | 255 |
| Shale, gray; minor gray siltstone; carbonaceous shale; trace coal----- | 255 | 260 |
| Sandstone, fine, gray----- | 260 | 265 |
| Siltstone, gray; minor dark-gray shale----- | 265 | 270 |
| Siltstone, gray; minor dark-gray shale----- | 270 | 275 |
| Siltstone, gray; minor dark-gray shale----- | 275 | 280 |
| Sandstone, very fine, gray; minor gray shale; trace carbonaceous shale----- | 280 | 285 |

Drill-hole W-BC-1-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor gray shale; trace carbonaceous shale; trace coal----- | 285 | 290 |
| Sandstone, very fine, gray; minor gray shale; trace carbonaceous shale; trace coal----- | 290 | 295 |
| Sandstone, very fine, gray; minor white shale; trace carbonaceous shale; gray-green shale----- | 295 | 300 |
| Sandstone, very fine, gray; minor white shale; trace carbonaceous shale; gray-green shale----- | 300 | 305 |
| Sandstone, very fine, gray; minor white shale; trace carbonaceous shale; gray-green shale----- | 305 | 310 |
| Sandstone, very fine, gray; minor white shale; trace carbonaceous shale; gray-green shale; minor dark-gray shale--- | 310 | 315 |
| Sandstone, very fine, gray----- | 315 | 320 |
| Sandstone, very fine, gray; minor dark-gray shale----- | 320 | 325 |
| Sandstone, very fine, gray; minor dark-gray shale----- | 325 | 330 |
| Sandstone, very fine, gray; minor dark-gray shale; minor calcareous shale; gray-green shale----- | 330 | 335 |
| Shale, dark-gray; minor gray shale; gray fine sandstone; trace gray-green shale; carbonaceous shale----- | 335 | 340 |
| Sandstone, very fine, gray; minor carbonaceous shale; white shale----- | 340 | 345 |
| Sandstone, very fine, gray; minor coal; gray shale----- | 345 | 350 |

Drill-hole W-BC-1-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; trace coal----- | 350 | 355 |
| Shale, dark-gray; minor gray shale; gray fine sandstone----- | 355 | 360 |
| Shale, dark-gray; minor gray shale; gray fine sandstone----- | 360 | 365 |
| Shale, dark-gray; minor gray shale; gray fine sandstone----- | 365 | 370 |
| Siltstone, gray; minor dark-gray shale; gray shale; trace carbonaceous shale----- | 370 | 375 |
| Siltstone, gray; minor dark-gray shale; gray shale; trace carbonaceous shale----- | 375 | 380 |
| Siltstone, gray; minor gray very fine sandstone; carbon- aceous shale; trace coal----- | 380 | 385 |
| Sandstone, fine to medium, gray----- | 385 | 390 |
| Sandstone, fine to medium, gray----- | 390 | 395 |
| Sandstone, fine, gray; trace gray shale; carbonaceous shale-- | 395 | 400 |
| No recovery----- | 400 | 405 |
| No recovery----- | 405 | 410 |
| No recovery----- | 410 | 415 |
| Sandstone, fine, gray; trace carbonaceous shale----- | 415 | 420 |
| Sandstone, fine, gray; minor gray shale; dark-gray carbon- aceous shale; trace brown fine sandstone----- | 420 | 425 |
| Sandstone, fine, gray; minor gray shale; dark-gray carbon- aceous shale; trace brown fine sandstone----- | 425 | 430 |
| Sandstone, fine, gray; trace carbonaceous shale----- | 430 | 435 |

Drill-hole W-BC-1-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray; minor gray shale; dark-gray shale; carbonaceous shale----- | 435 | 440 |
| Sandstone, fine, gray; minor gray shale; dark-gray shale; carbonaceous shale----- | 440 | 445 |
| Sandstone, fine, gray; minor gray shale; dark-gray shale; carbonaceous shale----- | 445 | 450 |
| Sandstone, fine, gray; minor gray shale; dark-gray shale; carbonaceous shale----- | 450 | 455 |
| Sandstone, fine, gray; minor gray shale; dark-gray shale; carbonaceous shale----- | 455 | 460 |
| Sandstone, fine, gray; minor gray shale; dark-gray shale; carbonaceous shale----- | 460 | 465 |
| Sandstone, fine, gray; minor gray shale; dark-gray shale; carbonaceous shale; trace coal----- | 465 | 470 |
| Sandstone, fine, gray; minor gray shale; dark-gray shale; carbonaceous shale----- | 470 | 475 |
| Sandstone, fine, gray; minor gray shale; dark-gray shale; carbonaceous shale; trace coal----- | 475 | 480 |
| Shale, dark-gray; minor gray fine sandstone; trace carbon- aceous shale----- | 480 | 485 |
| Shale, dark-gray; minor gray fine sandstone; trace carbon- aceous shale; minor white shale----- | 485 | 490 |
| Shale, dark-gray; minor gray fine sandstone; carbonaceous shale----- | 490 | 495 |

Drill-hole W-BC-1-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, dark-gray; minor gray fine sandstone; carbonaceous shale----- | 495 | 500 |
| Shale, dark-gray; minor gray fine sandstone; carbonaceous shale----- | 500 | 505 |
| Sandstone, fine, light-gray; minor gray shale; trace carbonaceous shale; white shale----- | 505 | 510 |
| Sandstone, fine, light-gray; minor gray shale; trace carbonaceous shale; white shale----- | 510 | 515 |
| Sandstone, fine, light-gray; minor gray shale; trace carbonaceous shale; white shale----- | 515 | 520 |
| Sandstone, fine, light-gray; minor gray shale; trace carbonaceous shale; white shale----- | 520 | 525 |
| Shale, dark-gray; minor carbonaceous shale; light-gray fine sandstone----- | 525 | 530 |
| Sandstone, fine, light-gray; minor dark-gray shale; trace carbonaceous shale----- | 530 | 535 |
| Shale, gray; minor carbonaceous shale; trace coal; light-gray fine sandstone----- | 535 | 540 |
| Shale, bentonitic, gray; minor dark-gray shale; coal; trace carbonaceous shale----- | 540 | 545 |
| Sandstone, very fine, light-gray; minor gray bentonitic shale; trace coal; carbonaceous shale----- | 545 | 550 |
| Sandstone, very fine, light-gray; minor gray bentonitic shale; trace coal; carbonaceous shale----- | 550 | 555 |

Drill-hole W-BC-1-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor gray bentonitic shale; trace coal; carbonaceous shale----- | 555 | 560 |
| Sandstone, very fine, light-gray; minor gray bentonitic shale; trace coal; carbonaceous shale; trace white shale; gray- green shale----- | 560 | 565 |
| Sandstone, very fine, light-gray; minor gray bentonitic shale; trace coal; carbonaceous shale; trace white shale; gray- green shale----- | 565 | 570 |
| Sandstone, very fine, light-gray; minor gray bentonitic shale; trace coal; carbonaceous shale; trace white shale; gray- green shale----- | 570 | 575 |
| Sandstone, very fine, gray; minor gray bentonitic shale; trace carbonaceous shale----- | 575 | 580 |
| Sandstone, very fine, gray; minor gray shale; carbonaceous shale; trace coal----- | 580 | 585 |
| Sandstone, very fine, gray; minor gray shale; trace carbon- aceous shale----- | 585 | 590 |
| Sandstone, very fine, gray; minor gray shale; trace carbon- aceous shale----- | 590 | 595 |
| Sandstone, very fine, gray; minor gray shale; trace carbon- aceous shale----- | 595 | 600 |
| Shale, bentonitic, gray; minor light-gray fine sandstone; trace carbonaceous shale; coal----- | 600 | 605 |

Drill-hole W-BC-1-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, bentonitic, gray; minor light-gray fine sandstone; trace carbonaceous shale; coal----- | 605 | 610 |
| Shale, bentonitic, gray; minor light-gray fine sandstone; trace carbonaceous shale; coal; trace white shale; gray- green shale----- | 610 | 615 |
| Sandstone, fine, light-gray; minor gray bentonitic shale; trace carbonaceous shale----- | 615 | 620 |
| Sandstone, very fine, light-gray; minor gray bentonitic shale; carbonaceous shale; trace coal----- | 620 | 625 |
| Sandstone, very fine, light-gray; minor gray bentonitic shale; carbonaceous shale; trace coal----- | 625 | 630 |
| Sandstone, very fine, light-gray; minor gray bentonitic shale; carbonaceous shale; trace coal----- | 630 | 635 |
| Sandstone, very fine, gray; trace carbonaceous shale----- | 635 | 640 |
| Sandstone, very fine, gray; trace carbonaceous shale----- | 640 | 645 |
| Sandstone, very fine, light-gray----- | 645 | 650 |
| Shale, dark-gray; minor light-gray silty shale; light-gray very fine sandstone; trace carbonaceous shale----- | 650 | 655 |
| Shale, dark-gray; minor light-gray silty shale; light-gray very fine sandstone; trace carbonaceous shale----- | 655 | 660 |
| Shale, dark-gray; minor light-gray silty shale; light-gray very fine sandstone; trace carbonaceous shale----- | 660 | 665 |

Drill-hole W-BC-1-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, dark-gray; minor light-gray silty shale; light-gray very fine sandstone; trace carbonaceous shale; trace white shale----- | 665 | 670 |
| Sandstone, fine, light-gray; minor dark-gray shale; light- gray silty shale; trace carbonaceous shale; white shale---- | 670 | 675 |
| Sandstone, fine, light-gray; minor dark-gray shale; light- gray silty shale; trace carbonaceous shale; white shale---- | 675 | 680 |
| Siltstone, light-gray; minor light-gray fine sandstone; trace carbonaceous shale----- | 680 | 685 |
| Siltstone, light-gray; minor light-gray fine sandstone; trace carbonaceous shale----- | 685 | 690 |
| Siltstone, light-gray; minor light-gray fine sandstone; trace carbonaceous shale; trace coal; trace gray-green shale---- | 690 | 695 |
| Poor samples; little recovery; coal appeared in samples at the following depths----- | 690 | 985 |
| | 795 | 900 |
| | 815 | 825 |
| | 835 | 940 |
| | 960 | 965 |
| Shale, gray; minor gray fine sandstone; coal; gray silty shale----- | 985 | 990 |
| Shale, gray; minor gray fine sandstone; coal; gray silty shale----- | 990 | 995 |
| Shale, gray; minor gray fine sandstone; coal; gray silty shale----- | 995 | 1,000 |

Drill-hole W-BC-1-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor gray fine sandstone; coal, gray silty shale----- | 1,000 | 1,005 |
| Shale, dark-gray; minor coal; gray shale; gray fine sandstone; gray silty shale----- | 1,005 | 1,010 |
| Shale, dark-gray; minor coal; gray shale; gray fine sandstone; gray silty shale----- | 1,010 | 1,015 |
| Coal; minor gray shale; gray fine sandstone----- | 1,015 | 1,020 |
| Shale, gray; minor gray fine sandstone; dark-gray shale; coal----- | 1,020 | 1,025 |
| Shale, gray; minor gray fine sandstone; green shale; dark-gray shale; trace coal----- | 1,025 | 1,030 |
| No recovery----- | 1,030 | 1,035 |
| Shale, gray; minor gray fine sandstone; green shale; dark-gray shale; trace coal----- | 1,035 | 1,040 |
| Shale, gray; minor gray fine sandstone; green shale; dark-gray shale; trace coal----- | 1,040 | 1,045 |
| Shale, gray; minor gray fine sandstone; green shale; dark-gray shale; trace coal----- | 1,045 | 1,050 |
| Shale, gray; minor gray fine sandstone; green shale; dark-gray shale; trace coal; minor bentonitic shale----- | 1,050 | 1,055 |
| Shale, gray; minor gray fine sandstone; green shale; dark-gray shale; trace coal; minor bentonitic shale----- | 1,055 | 1,060 |

Drill-hole W-BC-1-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor gray fine sandstone; green shale; dark-gray shale; trace coal; minor bentonitic shale----- | 1,060 | 1,065 |
| Shale, gray; minor gray fine sandstone; green shale; dark-gray shale; trace coal; minor bentonitic shale----- | 1,065 | 1,070 |
| Shale, gray; minor gray fine sandstone; green shale; dark-gray shale; trace coal; minor bentonitic shale----- | 1,070 | 1,075 |
| Shale, gray; minor gray fine sandstone; green shale; dark-gray shale; trace coal; minor bentonitic shale----- | 1,075 | 1,080 |
| Shale, gray; minor gray fine sandstone; green shale; dark-gray shale; trace coal; minor bentonitic shale----- | 1,080 | 1,085 |
| Shale, gray; minor gray fine sandstone; dark-gray shale; green shale; trace coal----- | 1,085 | 1,090 |
| Shale, gray; minor gray fine sandstone; dark-gray shale; green shale; trace coal; minor bentonitic shale----- | 1,090 | 1,095 |
| Shale, gray; minor gray fine sandstone; dark-gray shale; green shale; trace coal; minor bentonitic shale----- | 1,095 | 1,100 |
| Shale, gray; minor gray fine sandstone; dark-gray shale; green shale; trace coal; minor bentonitic shale----- | 1,100 | 1,105 |
| Shale, gray; minor gray fine sandstone; dark-gray shale; green shale; trace coal; minor bentonitic shale----- | 1,105 | 1,110 |
| Shale, gray; minor gray fine sandstone; dark-gray shale; green shale; trace coal; minor bentonitic shale----- | 1,110 | 1,115 |
| Shale, gray; minor gray fine sandstone; dark-gray shale; green shale; trace coal; minor bentonitic shale----- | 1,115 | 1,120 |

Drill-hole W-BC-1-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor gray fine sandstone; dark-gray shale; green shale; trace coal; minor bentonitic shale; trace coal----- | 1,120 | 1,125 |
| Shale, gray; minor gray fine sandstone; dark-gray shale; green shale; trace coal; minor bentonitic shale; trace coal----- | 1,125 | 1,130 |
| Shale, gray; minor gray fine sandstone; dark-gray shale; green shale; trace coal; minor bentonitic shale; trace coal----- | 1,130 | 1,135 |
| Shale, gray; minor gray fine sandstone; dark-gray shale; green shale; trace coal; minor bentonitic shale; trace coal----- | 1,135 | 1,140 |
| Shale, gray; minor gray fine sandstone; dark-gray shale; green shale; trace coal; minor bentonitic shale; trace coal----- | 1,140 | 1,145 |
| Shale, gray; minor gray fine sandstone; carbonaceous shale; trace gray shale----- | 1,145 | 1,150 |
| Shale, gray; minor gray fine sandstone; carbonaceous shale; trace gray shale----- | 1,150 | 1,155 |
| Shale, gray; minor gray fine sandstone; carbonaceous shale; trace gray shale----- | 1,155 | 1,160 |
| Shale, gray; minor gray fine sandstone; carbonaceous shale; trace gray shale----- | 1,160 | 1,165 |
| Sandstone, fine, gray; minor gray shale; trace coal----- | 1,165 | 1,170 |

Drill-hole W-BC-1-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray; minor gray shale; trace coal----- | 1,170 | 1,175 |
| Sandstone, fine, gray; minor gray shale; trace coal----- | 1,175 | 1,180 |
| Sandstone, fine, gray; minor gray shale; trace coal----- | 1,180 | 1,185 |
| Sandstone, fine, gray; minor gray shale; trace coal----- | 1,185 | 1,190 |
| Sandstone, fine, gray; minor gray shale; trace coal----- | 1,190 | 1,195 |
| Sandstone, fine, gray; minor gray shale; trace coal----- | 1,195 | 1,200 |
| Shale, carbonaceous----- | 1,200 | 1,205 |
| Shale, carbonaceous----- | 1,205 | 1,210 |
| Shale, carbonaceous; trace coal----- | 1,210 | 1,215 |
| Shale, carbonaceous; trace coal; minor bentonitic shale----- | 1,215 | 1,220 |
| Shale, carbonaceous; trace coal; minor bentonitic shale----- | 1,220 | 1,225 |
| Sandstone, fine, gray; minor gray shale; dark-gray shale; carbonaceous shale; green shale----- | 1,225 | 1,230 |
| Sandstone, fine, gray; minor gray shale; dark-gray shale; carbonaceous shale; green shale----- | 1,230 | 1,235 |
| Sandstone, fine, gray; minor gray shale; dark-gray shale; carbonaceous shale; green shale----- | 1,235 | 1,240 |
| Sandstone, fine, gray; minor gray shale; dark-gray shale; carbonaceous shale; green shale----- | 1,240 | 1,245 |
| Sandstone, fine, gray; minor gray shale; dark-gray shale; carbonaceous shale; green shale----- | 1,245 | 1,250 |
| Shale, bentonitic, gray; minor gray fine sandstone----- | 1,250 | 1,255 |

Drill-hole W-BC-1-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray; minor gray bentonitic shale----- | 1,255 | 1,260 |
| Sandstone, fine, gray; minor gray bentonitic shale----- | 1,260 | 1,265 |
| Sandstone, fine, gray; minor gray bentonitic----- | 1,265 | 1,270 |
| Sandstone, fine, gray; minor gray bentonitic----- | 1,270 | 1,275 |
| Sandstone, fine, gray; minor gray bentonitic----- | 1,275 | 1,280 |
| No recovery----- | 1,280 | 1,285 |
| Sandstone, fine, gray; minor gray shale; carbonaceous shale; dark-gray shale; trace coal----- | 1,285 | 1,290 |
| Sandstone, fine, gray; minor gray shale; carbonaceous shale; dark-gray shale; trace coal----- | 1,290 | 1,295 |
| No recovery----- | 1,295 | 1,300 |
| Sandstone, fine, gray; minor gray shale; carbonaceous shale-- | 1,300 | 1,305 |
| Snadstone, fine, gray; minor gray shale; carbonaceous shale-- | 1,305 | 1,310 |
| Total depth sampled - 1,310 ft. | | |

Drill-hole W-BC-2-S

SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 11, T. 13 S., R. 7 E., Salt Lake Principal Meridian, Scofield quadrangle Carbon County, Utah; collar elevation 9,150 ft; begun September 13, 1976, completed September 22, 1976; sampled by L. F. Blanchard, Tom Pike, Eileen Pera, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Soil----- | 0 | 5 |
| Soil----- | 5 | 10 |
| Soil----- | 10 | 15 |
| Siltstone, gray----- | 15 | 20 |
| Siltstone, gray----- | 20 | 25 |
| Sandstone, fine, gray; minor tan shale----- | 25 | 30 |
| Sandstone, fine, gray; minor tan shale; minor gray siltstone----- | 30 | 35 |
| Sandstone, fine, brown; minor gray shale----- | 35 | 40 |
| Siltstone, gray; minor brown silty shale----- | 40 | 45 |
| Sandstone, fine, tan to light-brown----- | 45 | 50 |
| Sandstone, fine, tan to light-brown----- | 50 | 55 |
| Sandstone, silty, fine, tan to light-brown----- | 55 | 60 |
| Sandstone, silty, fine, tan to light-brown----- | 60 | 65 |
| Sandstone, very fine, ochre----- | 65 | 70 |
| Sandstone, very fine, ochre----- | 70 | 75 |
| Sandstone, very fine, ochre; minor gray silty mudstone----- | 75 | 80 |
| Sandstone, fine, brown; trace white fine sandstone----- | 80 | 85 |
| Sandstone, fine, brown; trace coal; carbonaceous shale; gray shale----- | 85 | 90 |

Drill-hole W-BC-2-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, sandy, gray-brown; trace coal----- | 90 | 95 |
| Siltstone, gray; trace coal; carbonaceous shale----- | 95 | 100 |
| Sandstone, very fine, tan----- | 100 | 105 |
| Sandstone, very fine, tan----- | 105 | 110 |
| Sandstone, fine, tan; minor gray carbonaceous mudstone----- | 110 | 115 |
| Sandstone, fine, brown----- | 115 | 120 |
| Sandstone, silty, fine, gray-tan----- | 120 | 125 |
| Sandstone, fine, brown----- | 125 | 130 |
| Sandstone, fine, brown----- | 130 | 135 |
| Sandstone, very fine, light-brown; trace gray shale----- | 135 | 140 |
| Sandstone, very fine, light-brown; trace gray shale----- | 140 | 145 |
| Sandstone, very fine, light-brown; trace gray shale----- | 145 | 150 |
| Sandstone, silty, very fine, tan to light-brown----- | 150 | 155 |
| Sandstone, silty, very fine, tan to light-brown----- | 155 | 160 |
| Sandstone, fine, light-brown----- | 160 | 165 |
| Sandstone, fine, light-brown----- | 165 | 170 |
| Siltstone, gray; minor brown fine sandstone----- | 170 | 175 |
| Siltstone, gray----- | 175 | 180 |
| Siltstone, gray; minor light-brown very fine sandstone----- | 180 | 185 |
| Sandstone, very fine, light-brown; minor gray siltstone----- | 185 | 190 |
| Sandstone, very fine, light-brown; minor gray siltstone----- | 190 | 195 |
| Sandstone, very fine, light-brown; minor gray slightly carbonaceous shale----- | 195 | 200 |

Drill-hole W-BC-2-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-brown; minor gray slightly carbonaceous siltstone----- | 200 | 205 |
| Sandstone, very fine, light-brown; minor gray slightly carbonaceous siltstone----- | 205 | 210 |
| Siltstone, gray-brown----- | 210 | 215 |
| Siltstone, gray-brown----- | 215 | 220 |
| Siltstone, light-brown; minor gray siltstone----- | 220 | 225 |
| Siltstone, light-brown; minor gray siltstone----- | 225 | 230 |
| Siltstone, gray----- | 230 | 235 |
| Siltstone, gray----- | 235 | 240 |
| Shale, silty, gray; minor gray siltstone; trace coal----- | 240 | 245 |
| Sandstone, very fine, light-brown; minor gray siltstone----- | 245 | 250 |
| Sandstone, very fine, brown; minor gray siltstone; trace bone----- | 250 | 255 |
| Sandstone, very fine, brown; minor gray siltstone; trace bone----- | 255 | 260 |
| Siltstone, gray; minor gray silty shale----- | 260 | 265 |
| Siltstone, gray; minor gray silty shale; minor gray fine sandstone----- | 265 | 270 |
| Sandstone, fine, light-brown; minor gray siltstone----- | 270 | 275 |
| Sandstone, fine, light-brown; minor gray siltstone; trace coal----- | 275 | 280 |
| Siltstone, gray; trace gray shale; light-brown fine sandstone----- | 280 | 285 |

Drill-hole W-BC-2-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; minor light-gray shale; carbonaceous shale; trace light-brown fine sandstone----- | 285 | 290 |
| Siltstone, gray; minor light-gray shale; coal; trace light- brown fine sandstone----- | 290 | 295 |
| Siltstone, gray; minor light-gray shale; coal; trace light- brown fine sandstone----- | 295 | 300 |
| Sandstone, very fine, light-gray; minor gray siltstone; trace coal----- | 300 | 305 |
| Sandstone, very fine, light-gray; minor gray siltstone; trace coal----- | 305 | 310 |
| Sandstone, very fine, light-gray; minor yellow-brown very fine sandstone; trace light-brown siltstone----- | 310 | 315 |
| Sandstone, very fine, light-gray; minor yellow-brown very fine sandstone; trace light-brown siltstone----- | 315 | 320 |
| Sandstone, very fine, light-gray; minor yellow-brown very fine sandstone; trace light-brown siltstone----- | 320 | 325 |
| Sandstone, very fine, tan; trace gray siltstone----- | 325 | 330 |
| Sandstone, very fine, yellow-brown; minor gray siltstone; trace light-gray fine sandstone----- | 330 | 335 |
| Siltstone, slightly carbonaceous, gray; trace yellow-brown fine sandstone----- | 335 | 340 |
| Siltstone, slightly carbonaceous, gray; trace yellow-brown fine sandstone----- | 340 | 345 |

Drill-hole W-BC-2-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, slightly carbonaceous, gray; trace yellow-brown fine sandstone; trace coal----- | 345 | 350 |
| Siltstone, slightly carbonaceous, gray; trace yellow-brown fine sandstone; trace coal----- | 350 | 355 |
| Sandstone, very fine, gray; trace gray siltstone; yellow- brown fine sandstone; gray-green shale----- | 355 | 360 |
| Sandstone, very fine, gray; trace gray siltstone; yellow- brown fine sandstone; gray-green shale----- | 360 | 365 |
| Sandstone, very fine, gray; trace gray siltstone; yellow- brown fine sandstone; gray-green shale----- | 365 | 370 |
| Sandstone, very fine, gray; trace gray siltstone; yellow- brown fine sandstone; gray-green shale; trace light-gray shale----- | 370 | 375 |
| Sandstone, very fine, gray; trace gray siltstone; yellow- brown fine sandstone; gray-green shale; trace light-gray shale----- | 375 | 380 |
| Sandstone, slightly carbonaceous, very fine, gray; trace yellow-brown fine sandstone; gray shale----- | 380 | 385 |
| Sandstone, slightly carbonaceous, very fine, gray; trace yellow-brown fine sandstone; gray shale----- | 385 | 390 |
| Sandstone, very fine, gray; minor light-gray shale; trace yellow-brown fine sandstone----- | 390 | 395 |
| Sandstone, very fine, gray; minor light-gray shale; trace yellow-brown fine sandstone----- | 395 | 400 |

Drill-hole W-BC-2-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor light-gray shale; trace yellow-brown fine sandstone----- | 400 | 405 |
| Sandstone, very fine, gray; minor light-gray shale; trace yellow-brown fine sandstone----- | 405 | 410 |
| Sandstone, very fine, yellow-brown; minor gray very fine sandstone; gray siltstone; trace light-brown siltstone; gray-green-yellow shale; light-gray shale----- | 410 | 415 |
| Sandstone, very fine, yellow-brown; minor gray very fine sandstone; gray siltstone; trace light-brown siltstone; gray-green-yellow shale; light-gray shale; trace coal----- | 415 | 420 |
| Sandstone, slightly carbonaceous, very fine, gray; trace yellow-brown very fine sandstone; red-brown siltstone; coal; gray siltstone; carbonaceous shale----- | 420 | 425 |
| Sandstone, slightly carbonaceous, very fine, gray; trace yellow-brown very fine sandstone; red-brown siltstone; coal; gray siltstone; carbonaceous shale----- | 425 | 430 |
| Sandstone, slightly carbonaceous, very fine, gray; trace yellow-brown very fine sandstone; red-brown siltstone; coal; gray siltstone; carbonaceous shale----- | 430 | 435 |
| Shale, silty, gray; trace gray fine sandstone----- | 435 | 440 |
| Shale, bentonitic, silty, gray----- | 440 | 445 |
| Shale, bentonitic, silty, gray----- | 445 | 450 |
| Shale, bentonitic, silty, gray----- | 450 | 455 |

Drill-hole W-BC-2-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, bentonitic, silty, gray----- | 455 | 460 |
| Siltstone, gray; minor gray shale; coal----- | 460 | 465 |
| Shale, bentonitic, gray; trace coal; carbonaceous shale----- | 465 | 470 |
| Shale, bentonitic, gray; trace coal; carbonaceous shale----- | 470 | 475 |
| Sandstone, fine, gray----- | 475 | 480 |
| Sandstone, fine, gray----- | 480 | 485 |
| Shale, silty, carbonaceous, gray----- | 485 | 490 |
| Sandstone, fine, gray; minor gray silty shale----- | 490 | 495 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone----- | 495 | 500 |
| Shale, gray; minor gray very fine sandstone----- | 500 | 505 |
| Sandstone, fine, gray; minor carbonaceous shale; trace coal----- | 505 | 510 |
| Sandstone, very fine, gray; trace carbonaceous shale----- | 510 | 515 |
| Shale, silty, gray; trace carbonaceous shale; gray fine sandstone----- | 515 | 520 |
| Shale, carbonaceous; minor gray fine sandstone----- | 520 | 525 |
| Shale, gray; minor gray very fine sandstone; carbonaceous shale; trace coal----- | 525 | 530 |
| Shale, gray; minor gray very fine sandstone; carbonaceous shale; trace coal----- | 530 | 535 |
| Shale, carbonaceous, silty; trace gray very fine sandstone; coal----- | 535 | 540 |
| Shale, silty, gray; minor carbonaceous shale; gray fine sandstone----- | 540 | 545 |

Drill-hole W-BC-2-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, silty, gray; minor carbonaceous shale----- | 545 | 550 |
| Sandstone, fine, gray; trace gray shale----- | 550 | 555 |
| Sandstone, fine, gray; trace gray shale----- | 555 | 560 |
| Sandstone, fine, gray; trace gray shale----- | 560 | 565 |
| Shale, silty, gray; minor carbonaceous shale; gray fine sandstone----- | 565 | 570 |
| Shale, silty, gray; minor gray fine sandstone; trace carbonaceous shale----- | 570 | 575 |
| Shale, silty, gray; minor gray fine sandstone; trace carbonaceous shale----- | 575 | 580 |
| Shale, silty, gray; minor gray fine sandstone; trace carbonaceous shale----- | 580 | 585 |
| Sandstone, very fine, gray; trace carbonaceous shale----- | 585 | 590 |
| Sandstone, very fine, gray; trace carbonaceous shale----- | 590 | 595 |
| Shale, bentonitic, gray; trace carbonaceous shale; coal----- | 595 | 600 |
| Sandstone, very fine, gray----- | 600 | 605 |
| Shale, bentonitic, gray; minor carbonaceous shale; gray fine sandstone----- | 605 | 610 |
| Shale, bentonitic, gray; minor carbonaceous shale; gray fine sandstone----- | 610 | 615 |
| Shale, bentonitic, gray; minor carbonaceous shale; gray fine sandstone----- | 615 | 620 |

Drill-hole W-BC-2-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, bentonitic, gray; minor carbonaceous shale; gray fine sandstone----- | 620 | 625 |
| Shale, bentonitic, gray; minor carbonaceous shale; gray fine sandstone----- | 625 | 630 |
| Sandstone, very fine, gray; trace gray shale----- | 630 | 635 |
| Shale, bentonitic, gray; minor carbonaceous shale; trace fine sandstone----- | 635 | 640 |
| Sandstone, very fine, gray; minor carbonaceous shale----- | 640 | 645 |
| Sandstone, silty, very fine, gray; minor gray bentonitic silty shale; trace coal----- | 645 | 650 |
| Sandstone, silty, very fine, gray; minor gray bentonitic silty shale; trace coal----- | 650 | 655 |
| Sandstone, silty, very fine, gray; minor gray bentonitic silty shale; trace coal----- | 655 | 660 |
| Sandstone, silty, very fine, gray; minor gray bentonitic silty shale; trace coal----- | 660 | 665 |
| Sandstone, silty, very fine, gray; minor gray bentonitic silty shale; trace coal----- | 665 | 670 |
| Sandstone, silty, very fine, gray; minor gray bentonitic silty shale; trace coal----- | 670 | 675 |
| Shale, bentonitic, gray; minor carbonaceous shale----- | 675 | 680 |
| Shale, bentonitic, gray; minor carbonaceous shale----- | 680 | 685 |
| No recovery----- | 685 | 690 |

Drill-hole W-BC-2-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor gray shale; gray siltstone-- | 690 | 695 |
| Sandstone, very fine, gray; minor gray shale; gray siltstone-- | 695 | 700 |
| Sandstone, very fine, gray; minor gray shale; gray siltstone-- | 700 | 705 |
| No recovery----- | 705 | 710 |
| Shale, slightly carbonaceous, gray; trace yellow fine sandstone----- | 710 | 715 |
| Shale, slightly carbonaceous, gray; trace yellow fine sandstone----- | 715 | 720 |
| Shale, slightly carbonaceous, gray; trace yellow fine sandstone----- | 720 | 725 |
| Shale, slightly carbonaceous, gray; trace yellow fine sandstone; trace carbonaceous shale----- | 725 | 730 |
| Sandstone, very fine, gray-brown; minor gray shale; trace light-gray very fine sandstone----- | 730 | 735 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray shale----- | 735 | 740 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray shale----- | 740 | 745 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray shale----- | 745 | 750 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray shale----- | 750 | 755 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray shale----- | 755 | 760 |

Drill-hole W-BC-2-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray shale----- | 760 | 765 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray shale; trace carbonaceous shale----- | 765 | 770 |
| Sandstone, very fine, light-gray; minor gray shale; carbon- aceous shale----- | 770 | 775 |
| Sandstone, very fine, light-gray; minor gray shale; carbon- aceous shale----- | 775 | 780 |
| Sandstone, very fine, light-gray; trace gray shale; carbon- aceous shale; coal----- | 780 | 785 |
| Sandstone, very fine, light-gray; minor gray slightly carbonaceous very fine sandstone; trace gray shale----- | 785 | 790 |
| Sandstone, very fine, light-gray; minor gray slightly carbonaceous very fine sandstone; trace gray shale----- | 790 | 795 |
| Sandstone, very fine, light-gray; minor gray slightly carbonaceous very find sandstone; trace gray shale; trace gray-green shale----- | 795 | 800 |
| Sandstone, very fine, light-gray; minor gray slightly carbonaceous very fine sandstone; trace gray shale; trace gray-green shale----- | 800 | 805 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray shale; trace light-brown siltstone; black carbonaceous shale----- | 805 | 810 |

Drill-hole W-BC-2-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray shale; trace light-brown siltstone; black carbonaceous shale----- | 810 | 815 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray shale; trace light-brown siltstone; black carbonaceous shale----- | 815 | 820 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray shale; trace light-brown siltstone; black carbonaceous shale----- | 820 | 825 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray shale; trace light-brown siltstone; black carbonaceous shale----- | 825 | 830 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray shale; trace light-brown siltstone; black carbonaceous shale----- | 830 | 835 |
| Sandstone, very fine, light-gray; minor gray shale; trace pyrite; black carbonaceous shale----- | 835 | 840 |
| Sandstone, very fine, light-gray; minor gray shale; trace pyrite; black carbonaceous shale----- | 840 | 845 |
| Sandstone, very fine, light-gray; minor gray-green shale; light-brown siltstone; gray shale; carbonaceous shale----- | 845 | 850 |
| Sandstone, very fine, light-gray; minor light-gray slightly carbonaceous very fine sandstone; trace pyrite; gray shale----- | 850 | 855 |

Drill-hole W-BC-2-S -, continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor light-gray slightly carbonaceous very fine sandstone; trace pyrite; gray shale- | 855 | 860 |
| Sandstone, very fine, light-gray; minor light-gray slightly carbonaceous very fine sandstone; trace pyrite; gray shale- | 860 | 865 |
| Sandstone, very fine, light-gray; minor light-gray slightly carbonaceous very fine sandstone; trace pyrite; gray shale- | 865 | 870 |
| Sandstone, very fine, light-gray; minor light-gray slightly carbonaceous very fine sandstone; trace pyrite; gray shale- | 870 | 875 |
| Sandstone, very fine, light-gray; minor light-gray slightly carbonaceous very fine sandstone; trace pyrite; gray shale- | 875 | 880 |
| Sandstone, very fine, light-gray; minor light-gray slightly carbonaceous very fine sandstone; trace pyrite; gray shale- | 880 | 885 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor red-tan very fine sandstone; trace pyrite; gray shale; carbonaceous shale----- | 885 | 890 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor red-tan very fine sandstone; trace pyrite; gray shale; carbonaceous shale----- | 890 | 895 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor red-tan very fine sandstone; trace pyrite; gray shale; carbonaceous shale----- | 895 | 900 |
| Shale, gray; minor light-gray very fine sandstone; trace carbonaceous shale----- | 900 | 905 |

Drill-hole W-BC-2-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor light-gray very fine sandstone; trace carbonaceous shale; trace gray-green shale----- | 905 | 910 |
| Shale, gray; minor light-gray very fine sandstone; trace carbonaceous shale; trace gray-green shale----- | 910 | 915 |
| Shale, gray; minor light-gray very fine sandstone; trace carbonaceous shale; trace gray-green shale----- | 915 | 920 |
| Shale, gray; minor light-gray very fine sandstone; trace carbonaceous shale; trace gray-green shale----- | 920 | 925 |
| Shale, gray; minor light-gray very fine sandstone; trace carbonaceous shale; trace gray-green shale----- | 925 | 930 |
| Shale, gray; minor light-gray very fine sandstone; trace carbonaceous shale; trace gray-green shale----- | 930 | 935 |
| Shale, gray; minor light-gray very fine sandstone; trace carbonaceous shale; trace gray-green shale----- | 935 | 940 |
| Shale, gray; minor light-gray very fine sandstone; trace carbonaceous shale; trace gray-green shale----- | 940 | 945 |
| Shale, gray; minor light-gray very fine sandstone; trace carbonaceous shale; trace gray-green shale----- | 945 | 950 |
| Siltstone, carbonaceous, gray; minor dark-gray shale; light- gray fine sandstone----- | 950 | 955 |
| Sandstone, very fine, light-gray; minor dark-gray shale----- | 955 | 960 |
| Siltstone, gray; trace gray-green shale----- | 960 | 965 |
| Siltstone, gray; trace gray-green shale----- | 965 | 970 |

Drill-hole W-BC-2-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray; trace gray-green shale----- | 970 | 975 |
| Sandstone, fine, gray; trace gray-green shale----- | 975 | 980 |
| Sandstone, fine, gray; trace gray-green shale----- | 980 | 985 |
| Sandstone, fine, gray; trace gray-green shale; minor gray shale----- | 985 | 990 |
| Sandstone, very fine, light-gray; minor gray shale; gray- green shale; trace carbonaceous shale----- | 990 | 995 |
| Sandstone, very fine, light-gray----- | 995 | 1,000 |
| Sandstone, very fine, light-gray; minor gray-green shale; gray shale; trace carbonaceous shale----- | 1,000 | 1,005 |
| Sandstone, very fine, light-gray; minor gray-green shale; gray shale; trace carbonaceous shale----- | 1,005 | 1,010 |
| Sandstone, medium, light-gray; minor light-gray bentonitic shale; dark-gray shale; trace carbonaceous shale----- | 1,010 | 1,015 |
| Sandstone, fine, light-gray; minor light-gray medium sand- stone; light-gray bentonitic shale; dark-gray shale; trace carbonaceous shale----- | 1,015 | 1,020 |
| Sandstone, fine, light-gray; minor light-gray medium sand- stone; light-gray bentonitic shale; dark-gray shale; trace carbonaceous shale----- | 1,020 | 1,025 |
| Sandstone, fine, light-gray; minor light-gray medium sand- stone; light-gray bentonitic shale; dark-gray shale; trace carbonaceous shale----- | 1,1025 | 1,030 |

Drill-hole W-BC-2-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, light-gray; minor light-gray medium sandstone; light-gray bentonitic shale; dark-gray shale; trace carbonaceous shale----- | 1,030 | 1,035 |
| Shale, gray; minor gray-green shale; carbonaceous shale; light-gray fine sandstone----- | 1,035 | 1,040 |
| Shale, gray; minor gray-green shale; carbonaceous shale; light-gray fine sandstone----- | 1,040 | 1,045 |
| Shale, gray; minor gray-green shale; carbonaceous shale; trace coal----- | 1,045 | 1,050 |
| Sandstone, very fine, gray; minor dark-gray shale; trace carbonaceous shale----- | 1,050 | 1,055 |
| Shale, dark-gray; minor carbonaceous shale; trace gray very fine sandstone; gray-green shale----- | 1,055 | 1,060 |
| Shale, dark-gray; minor carbonaceous shale; trace gray very fine sandstone; gray-green shale----- | 1,060 | 1,065 |
| Shale, dark-gray; minor carbonaceous shale; trace gray very fine sandstone; gray-green shale----- | 1,065 | 1,070 |
| Siltstone, gray; minor dark-gray shale; carbonaceous shale; gray-green shale; gray fine sandstone----- | 1,070 | 1,075 |
| Siltstone, gray; minor dark-gray shale; carbonaceous shale; gray-green shale; gray fine sandstone----- | 1,075 | 1,080 |
| Sandstone, very fine, gray; minor gray shale; gray-green shale; carbonaceous shale----- | 1,080 | 1,085 |
| Sandstone, very fine, gray; minor gray shale; gray-green shale; carbonaceous shale----- | 1,085 | 1,090 |

Drill-hole W-BC-2-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor gray very fine sandstone; trace carbonaceous shale----- | 1,090 | 1,095 |
| Shale, gray; minor gray very fine sandstone; trace carbonaceous shale----- | 1,095 | 1,100 |
| No recovery----- | 1,100 | 1,105 |
| No recovery----- | 1,105 | 1,110 |
| Shale, gray; minor gray very fine sandstone; trace carbonaceous shale----- | 1,110 | 1,115 |
| Shale, gray; minor gray very fine sandstone; trace carbonaceous shale (very poor samples; unreliable)----- | 1,115 | 1,190 |
| No recovery----- | 1,190 | 1,195 |
| No recovery----- | 1,195 | 1,200 |
| No recovery----- | 1,200 | 1,205 |
| Sandstone, fine, gray; minor dark-gray shale; trace coal; black carbonaceous shale----- | 1,205 | 1,210 |
| Sandstone, fine, gray; minor dark-gray shale; black carbonaceous shale----- | 1,210 | 1,215 |
| Sandstone, fine, gray; minor dark-gray shale; black carbonaceous shale; trace coal----- | 1,215 | 1,220 |
| Siltstone, gray; minor gray fine sandstone; dark-gray shale; trace black carbonaceous shale----- | 1,220 | 1,225 |
| Shale, gray; trace red-brown siltstone----- | 1,225 | 1,230 |
| Shale, gray; minor dark-gray carbonaceous shale----- | 1,230 | 1,235 |

Drill-hole W-BC-2-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor dark-gray carbonaceous shale; minor yellow-brown fine sandstone----- | 1,235 | 1,240 |
| Shale, gray; minor dark-gray carbonaceous shale; minor yellow-brown fine sandstone; trace white shale----- | 1,240 | 1,245 |
| Shale, gray; minor light-gray fine sandstone; coal; trace carbonaceous shale; white shale----- | 1,245 | 1,250 |
| Shale, gray; minor light-gray fine sandstone; coal; trace carbonaceous shale; white shale----- | 1,250 | 1,255 |
| Shale, gray; minor light-gray fine sandstone; trace coal; carbonaceous shale; white shale----- | 1,255 | 1,260 |
| Shale, gray; minor light-gray fine sandstone; trace coal; carbonaceous shale; white white----- | 1,260 | 1,265 |
| Sandstone, fine to medium, gray; minor dark-gray shale; black carbonaceous shale; trace coal----- | 1,265 | 1,270 |
| Sandstone, fine to medium, gray; minor dark-gray shale; black carbonaceous shale; trace coal----- | 1,270 | 1,275 |
| Sandstone, medium, gray; minor gray fine sandstone; gray shale; trace black carbonaceous shale----- | 1,275 | 1,280 |
| Sandstone, medium, gray; minor gray fine sandstone; gray shale; trace black carbonaceous shale; minor coal----- | 1,280 | 1,285 |
| Sandstone, medium, gray; minor gray fine sandstone; gray shale; trace black carbonaceous; coal----- | 1,285 | 1,290 |

Drill-hole W-BC-2-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, medium, gray; minor gray fine sandstone; gray shale; trace black carbonaceous; coal; trace gray-green shale----- | 1,290 | 1,295 |
| Total depth sampled - 1,295 ft | | |

Drill-hole W-BC-3-S

SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 12, T. 13 S., R. 7 E., Salt Lake Principal Meridian, Scofield quadrangle
Carbon County, Utah; collar elevation 8,525 ft; begun September 11, 1976, completed
October 1, 1976; sampled by L. F. Blanchard, Tom Pike, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Soil----- | 0 | 5 |
| Sandstone, fine, tan----- | 5 | 10 |
| Sandstone, fine, tan----- | 10 | 15 |
| Shale, silty, light-gray; minor dark-gray silty shale----- | 15 | 20 |
| Shale, bentonitic, silty, light-gray----- | 20 | 25 |
| Shale, bentonitic, silty, light-gray----- | 25 | 30 |
| Sandstone, carbonaceous, fine, light-gray----- | 30 | 35 |
| Sandstone, fine, light-gray; minor tan fine sandstone----- | 35 | 40 |
| Sandstone, fine, tan----- | 40 | 45 |
| Sandstone, fine, tan; minor light-gray fine sandstone----- | 45 | 50 |
| Sandstone, fine, light-gray; minor gray siltstone; black carbonaceous siltstone----- | 50 | 55 |
| Siltstone, carbonaceous, dark-gray; minor light-gray fine sandstone----- | 55 | 60 |
| Sandstone, fine, light-gray----- | 60 | 65 |
| Sandstone, fine, light-gray----- | 65 | 70 |
| Sandstone, fine, light-gray; minor gray siltstone----- | 70 | 75 |
| Sandstone, fine, light-gray; minor light-gray shale----- | 75 | 80 |
| Siltstone, carbonaceous; minor gray siltstone; trace light- gray shale----- | 80 | 85 |

Drill-hole W-BC-3-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, carbonaceous, fine, light-gray----- | 85 | 90 |
| Siltstone, gray; trace gray fine sandstone----- | 90 | 95 |
| Sandstone, very fine, light-gray; minor light-brown siltstone----- | 95 | 100 |
| Siltstone, carbonaceous, gray; minor light-gray fine sand- stone; light-gray shale----- | 100 | 105 |
| No recovery----- | 105 | 110 |
| Siltstone, carbonaceous, gray; minor light-gray fine sand- stone; light-gray shale----- | 110 | 115 |
| Siltstone, gray; trace gray carbonaceous siltstone----- | 115 | 120 |
| Sandstone, very fine, light-gray----- | 120 | 125 |
| Sandstone, very fine, light-gray----- | 125 | 130 |
| Sandstone, very fine, light-gray----- | 130 | 135 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray-green shale----- | 135 | 140 |
| Shale, gray-green; trace gray fine sandstone; coal----- | 140 | 145 |
| Shale, gray-green; trace gray fine sandstone; coal----- | 145 | 150 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray carbonaceous siltstone----- | 150 | 155 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray carbonaceous siltstone; minor gray-green shale-- | 155 | 160 |
| Siltstone, gray; minor light-brown siltstone----- | 160 | 165 |
| No recovery----- | 165 | 170 |

Drill-hole W-BC-3-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| No recovery----- | 170 | 175 |
| Sandstone, very fine, light-gray; minor gray siltstone; trace coal; gray-green shale----- | 175 | 180 |
| Sandstone, very fine, light-gray; minor gray siltstone; trace coal; gray-green shale; trace buff shale----- | 180 | 185 |
| Sandstone, very fine, light-gray; minor gray siltstone; trace coal; gray-green shale; trace buff shale----- | 185 | 190 |
| Sandstone, very fine, light-gray; minor gray siltstone; trace coal; gray-green shale; trace buff shale----- | 190 | 195 |
| Sandstone, fine, gray----- | 195 | 200 |
| Sandstone, fine, gray; minor coal----- | 200 | 205 |
| Sandstone, fine, gray; minor coal----- | 205 | 210 |
| Sandstone, fine, gray; minor coal----- | 210 | 215 |
| Sandstone, fine, light-gray; minor light-gray shale----- | 215 | 220 |
| Shale, dark-gray; minor light-gray fine sandstone----- | 220 | 225 |
| Sandstone, very fine, light-gray----- | 225 | 230 |
| Sandstone, very fine, light-gray----- | 230 | 235 |
| Sandstone, very fine, light-gray; minor light-gray siltstone; trace coal----- | 235 | 240 |
| Sandstone, very fine, light-gray; minor light gray siltstone; trace coal----- | 240 | 245 |
| Sandstone, very fine, gray----- | 245 | 250 |
| Sandstone, very fine, gray; minor gray silty shale----- | 250 | 255 |

Drill-hole W-BC-3-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; trace coal----- | 255 | 260 |
| Shale, silty, gray----- | 260 | 265 |
| Siltstone, gray; minor gray very fine sandstone----- | 265 | 270 |
| Siltstone, gray; minor gray very fine sandstone----- | 270 | 275 |
| Sandstone, very fine, gray; minor gray siltstone; gray carbonaceous siltstone----- | 275 | 280 |
| Siltstone, gray; minor coal----- | 280 | 285 |
| Siltstone, gray; minor coal; minor gray-green mudstone----- | 285 | 290 |
| Sandstone, fine, gray; trace carbonaceous shale; gray silty shale----- | 290 | 295 |
| Sandstone, fine, gray; trace carbonaceous shale; gray silty shale----- | 295 | 300 |
| Sandstone, fine, gray; minor coal; gray silty carbonaceous shale----- | 300 | 305 |
| Sandstone, very fine, gray; trace coal; carbonaceous shale--- | 305 | 310 |
| Sandstone, very fine, gray; minor coal; carbonaceous shale--- | 310 | 315 |
| Sandstone, very fine, gray; trace coal; carbonaceous shale--- | 315 | 320 |
| Sandstone, very fine, gray; trace coal; carbonaceous shale--- | 320 | 325 |
| Shale, silty, gray; minor gray siltstone; trace carbonaceous shale----- | 325 | 330 |
| Shale, silty, gray; minor gray siltstone; trace carbonaceous shale----- | 330 | 335 |
| Shale, silty, gray; minor gray siltstone; trace carbonaceous shale----- | 335 | 340 |

Drill-hole W-BC-3-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor gray silty shale; trace coal----- | 340 | 345 |
| Sandstone, very fine, gray; trace coal; carbonaceous shale; gray medium sandstone----- | 345 | 350 |
| Mudstone, carbonaceous, gray; minor gray siltstone; trace coal; gray fine sandstone----- | 350 | 355 |
| Sandstone, medium, gray; minor gray fine sandstone; trace coal----- | 355 | 360 |
| Sandstone, medium, gray; minor gray fine sandstone; trace coal----- | 360 | 365 |
| Sandstone, very fine, gray; minor carbonaceous shale----- | 365 | 370 |
| Sandstone, very fine, gray; minor gray siltstone; trace coal----- | 370 | 375 |
| Sandstone, very fine, gray; minor coal----- | 375 | 380 |
| Sandstone, very fine, gray; trace coal----- | 380 | 385 |
| Sandstone, very fine, gray; trace coal; minor gray mudstone; gray-green mudstone----- | 385 | 390 |
| Sandstone, fine, gray; trace carbonaceous shale----- | 390 | 395 |
| Sandstone, fine, gray; trace carbonaceous shale----- | 395 | 400 |
| Sandstone, fine, gray; minor gray very fine sandstone; trace gray-green mudstone; coal----- | 400 | 405 |
| Sandstone, fine, gray; minor gray very fine sandstone; trace gray-green mudstone; coal----- | 405 | 410 |

Drill-hole W-BC-3-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray; minor gray very fine sandstone; trace gray-green mudstone; coal----- | 410 | 415 |
| Sandstone, fine, gray; trace carbonaceous shale----- | 415 | 420 |
| Sandstone, fine, gray; trace carbonaceous shale----- | 420 | 425 |
| Sandstone, fine, gray; trace carbonaceous shale----- | 425 | 430 |
| Sandstone, very fine, gray; minor carbonaceous shale; trace coal----- | 430 | 435 |
| Sandstone, very fine, gray; minor carbonaceous shale; trace coal----- | 435 | 440 |
| Sandstone, very fine, gray; minor carbonaceous shale; trace coal; minor gray siltstone----- | 440 | 445 |
| Sandstone, very fine, gray; minor carbonaceous shale; trace coal; minor gray siltstone----- | 445 | 450 |
| Sandstone, very fine, gray; minor carbonaceous shale; trace coal; minor gray siltstone----- | 450 | 455 |
| Sandstone, very fine, gray; minor coal----- | 455 | 460 |
| Sandstone, very fine, gray; minor coal; minor gray shale----- | 460 | 465 |
| Sandstone, very fine, gray; minor coal; minor gray shale----- | 465 | 470 |
| Sandstone, very fine, gray; minor coal; minor gray shale----- | 470 | 475 |
| Sandstone, very fine, gray; minor coal; minor gray shale----- | 475 | 480 |
| Sandstone, very fine, gray; minor coal; minor gray shale----- | 480 | 485 |
| Sandstone, very fine, gray; minor coal; minor gray shale----- | 485 | 490 |
| Sandstone, fine, gray; minor gray shale; coal----- | 490 | 495 |

Drill-hole W-BC-3-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray; minor gray shale; coal----- | 495 | 500 |
| Sandstone, fine, gray; minor gray shale; coal----- | 500 | 505 |
| Sandstone, fine, gray; minor gray shale; trace gypsum----- | 505 | 510 |
| Sandstone, fine, gray; minor gray shale; trace coal; gypsum----- | 510 | 515 |
| Sandstone, fine, gray; minor gray shale; trace coal; gypsum; minor coal----- | 515 | 520 |
| Sandstone, fine, gray; minor gray shale; trace coal; gypsum; minor coal----- | 520 | 525 |
| Sandstone, very fine, gray; trace coal----- | 525 | 530 |
| Sandstone, very fine, gray; trace coal----- | 530 | 535 |
| Sandstone, very fine, gray; trace coal----- | 535 | 540 |
| Sandstone, very fine, gray; trace coal----- | 540 | 545 |
| Sandstone, very fine, gray; trace coal----- | 545 | 550 |
| Sandstone, very fine, gray; trace coal----- | 550 | 555 |
| Sandstone, very fine, gray; trace coal----- | 555 | 560 |
| No recovery----- | 560 | 565 |
| Sandstone, very fine, gray; trace coal----- | 565 | 570 |
| Sandstone, very fine, gray; trace coal----- | 570 | 575 |
| No recovery----- | 575 | 580 |
| No recovery----- | 580 | 585 |
| No recovery----- | 585 | 590 |
| BC-3A (redrill of BC-3): | | |

Drill-hole W-BC-3A-S (BC-3A a redrill of BC-3) - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; trace coal; light-gray shale----- | 590 | 595 |
| Shale, gray; trace coal; light-gray shale----- | 595 | 600 |
| Shale, gray; trace coal; light-gray shale----- | 600 | 605 |
| Shale, gray; trace coal; light-gray shale; trace carbon- aceous shale----- | 605 | 610 |
| Shale, gray; trace coal; light-gray shale; trace carbon- aceous shale----- | 610 | 615 |
| Sandstone, very fine, light-gray; minor gray shale; trace dark-gray carbonaceous siltstone; gray-green shale; black carbonaceous shale----- | 615 | 620 |
| Sandstone, very fine, light-gray; minor gray shale; trace dark-gray carbonaceous siltstone; gray-green shale; black carbonaceous shale----- | 620 | 625 |
| Sandstone, very fine, light-gray; minor gray shale; trace dark-gray carbonaceous siltstone; gray-green shale; black carbonaceous shale----- | 625 | 630 |
| Sandstone, very fine, light-gray; minor gray shale; trace dark-gray carbonaceous siltstone; gray-green shale; black carbonaceous shale----- | 630 | 635 |
| Sandstone, very fine, light-gray; trace carbonaceous shale--- | 635 | 640 |
| Sandstone, very fine, gray; minor gray shale; coal----- | 640 | 645 |
| Sandstone, very fine, gray; minor gray shale; coal----- | 645 | 650 |

Drill-hole W-BC-3A-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor gray shale; coal; trace coal----- | 650 | 655 |
| No recovery----- | 655 | 660 |
| Sandstone, very fine, gray; minor gray shale; trace coal----- | 660 | 665 |
| Sandstone, very fine, gray; minor gray shale; trace coal----- | 665 | 670 |
| Sandstone, very fine, gray; minor white shale; trace gray shale; coal----- | 670 | 675 |
| Sandstone, very fine, gray; minor white shale; trace gray shale; coal----- | 675 | 680 |
| Sandstone, very fine, gray; minor white shale; trace gray shale; coal; trace carbonaceous shale----- | 680 | 685 |
| Shale, gray; minor gray fine sandstone; trace white shale; black carbonaceous shale; gray shale----- | 685 | 690 |
| No recovery----- | 690 | 695 |
| No recovery----- | 695 | 700 |
| No recovery----- | 700 | 705 |
| Sandstone, fine, light-gray; trace gray shale; black carbonaceous shale----- | 705 | 710 |
| No recovery----- | 710 | 715 |
| Coal; minor light-gray fine sandstone----- | 715 | 720 |
| Sandstone, fine, light-gray; minor gray shale; trace gray-green shale----- | 720 | 725 |
| Shale, gray; minor white shale; trace gray-green shale; black carbonaceous shale----- | 725 | 730 |

Drill-hole W-BC-3A-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor white shale; trace gray-green shale; black carbonaceous shale----- | 730 | 735 |
| Sandstone, fine, light-gray; minor gray shale; white shale; trace gray-green shale----- | 735 | 740 |
| Sandstone, fine, light-gray; minor gray shale; white shale; trace gray--reen shale----- | 740 | 745 |
| Sandstone, fine, light-gray; minor gray shale; white shale; trace gray-green shale----- | 745 | 750 |
| Sandstone, fine, light-gray; trace white shale; gray shale--- | 750 | 755 |
| Sandstone, fine, light-gray; trace white shale; gray shale--- | 755 | 760 |
| Sandstone, fine, light-gray; trace dark-gray carbonaceous siltstone; gray shale----- | 760 | 765 |
| Sandstone, fine, light-gray; trace dark-gray carbonaceous siltstone; gray shale----- | 765 | 770 |
| Sandstone, fine, light-gray; trace dark-gray carbonaceous siltstone; gray shale----- | 770 | 775 |
| Sandstone, fine, light-gray; trace dark-gray carbonaceous siltstone; gray shale; trace carbonaceous shale----- | 775 | 780 |
| Sandstone, very fine, light-gray; trace gray-green shale; carbonaceous shale; white shale----- | 780 | 785 |
| Sandstone, very fine, light-gray; trace gray-green shale; carbonaceous shale; white shale----- | 785 | 790 |
| Sandstone, very fine, light-gray; trace gray-green shale; carbonaceous shale; white shale----- | 790 | 795 |

Drill-hole W-BC-3A-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor gray-green shale; white shale; trace black carbonaceous shale; pryite----- | 795 | 800 |
| Sandstone, very fine, light-gray; minor gray-green shale; dark-brown carbonaceous siltstone; trace carbonaceous shale; coal; white shale----- | 800 | 805 |
| Sandstone, very fine, light-gray; minor gray-green shale; dark-brown carbonaceous siltstone; trace carbonaceous shale; coal; white shale----- | 805 | 810 |
| Sandstone, very fine, light-gray; minor gray-green shale; dark-brown carbonaceous siltstone; trace carbonaceous shale; coal; white shale----- | 810 | 815 |
| Sandstone, very fine, light-gray; minor gray-green shale; dark-brown carbonaceous siltstone; trace carbonaceous shale; coal; white shale----- | 815 | 820 |
| Sandstone, very fine, light-gray; minor gray-green shale; dark-brown carbonaceous siltstone; trace carbonaceous shale; coal; white shale----- | 820 | 825 |
| Sandstone, very fine, light-gray; minor gray shale; gray- green shale; dark-brown carbonaceous siltstone; trace coal----- | 825 | 830 |
| Sandstone, very fine, light-gray; minor gray shale; gray- green shale; dark-brown carbonaceous siltstone; trace coal----- | 830 | 835 |

Drill-hole W-BC-3A-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor gray shale; gray-green shale; dark-brown carbonaceous siltstone; trace coal----- | 835 | 840 |
| Total depth sampled - 840 ft. | | |

Drill-hole W-BC-4-S

NW¹/₄NE¹/₄ sec. 8, T. 13 S., R. 8 E., Salt Lake Principal Meridian, Scofield quadrangle, Carbon County, Utah; collar elevation 8,250 ft; begun September 16, 1976, completed September 26, 1976; sampled by L. F. Blanchard, Eileen Pera, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| No recovery----- | 0 | 50 |
| Sandstone, fine, tan to brown; minor gray fine sandstone--- | 50 | 55 |
| Sandstone, fine, tan to brown; minor gray fine sandstone---- | 55 | 60 |
| Sandstone, fine, tan to brown; minor gray fine sandstone---- | 60 | 65 |
| Shale, gray; minor gray carbonaceous fine sandstone----- | 65 | 70 |
| Sandstone, fine, tan; minor brown fine sandstone; yellow- | | |
| brown fine sandstone; brown carbonaceous shale----- | 70 | 75 |
| Sandstone, fine, tan; minor brown fine sandstone; yellow- | | |
| brown fine sandstone; brown carbonaceous shale----- | 75 | 80 |
| Shale, carbonaceous; trace coal; tan fine sandstone; | | |
| yellow-brown fine sandstone; gray siltstone----- | 80 | 85 |
| Shale, carbonaceous; minor gray fine sandstone; yellow- | | |
| brown fine sandstone; trace coal----- | 85 | 90 |
| No recovery----- | 90 | 95 |
| Siltstone, carbonaceous; minor carbonaceous shale; yellow- | | |
| brown fine sandstone----- | 95 | 100 |
| Siltstone, carbonaceous; minor carbonaceous shale; yellow- | | |
| brown fine sandstone----- | 100 | 105 |
| Siltstone, carbonaceous; minor carbonaceous shale; yellow- | | |
| brown fine sandstone; minor gray fine sandstone----- | 105 | 110 |

Drill-hole W-BC-4-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, carbonaceous; minor carbonaceous shale; yellow-brown fine sandstone; minor gray fine sandstone----- | 110 | 115 |
| Shale, bentonitic, gray; minor gray fine sandstone; carbonaceous shale----- | 115 | 120 |
| Sandstone, fine, gray; minor gray siltstone; carbonaceous shale----- | 120 | 125 |
| Sandstone, fine, gray; minor gray siltstone; carbonaceous shale----- | 125 | 130 |
| Sandstone, fine, gray; minor gray siltstone; carbonaceous shale----- | 130 | 135 |
| Shale, carbonaceous, silty; minor gray fine sandstone----- | 135 | 140 |
| Sandstone, carbonaceous, fine, gray; minor carbonaceous shale----- | 140 | 145 |
| Sandstone, carbonaceous, fine, gray; minor carbonaceous shale----- | 145 | 150 |
| Sandstone, carbonaceous, fine, gray; minor carbonaceous shale----- | 150 | 155 |
| Sandstone, carbonaceous, fine, gray; minor carbonaceous shale----- | 155 | 160 |
| Sandstone, very fine, light-gray; minor gray-brown carbonaceous shale----- | 160 | 165 |
| Sandstone, very fine, light-gray; minor gray-brown carbonaceous shale; trace dark-gray fine carbonaceous sandstone----- | 165 | 170 |

Drill-hole W-BC-4-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor gray-brown carbonaceous shale; trace dark-gray fine carbonaceous sandstone----- | 170 | 175 |
| Sandstone, fine, light-gray; minor dark-gray-black carbonaceous siltstone; yellow fine sandstone----- | 175 | 180 |
| Siltstone, gray; minor light-gray fine sandstone----- | 180 | 185 |
| Shale, carbonaceous, black; minor gray slightly carbon- aceous siltstone; gray fine sandstone----- | 185 | 190 |
| Sandstone, carbonaceous, fine, gray; minor light-gray fine sandstone----- | 190 | 195 |
| Sandstone, carbonaceous, fine, gray; minor light-gray fine sandstone----- | 195 | 200 |
| Sandstone, carbonaceous, fine, gray; minor light-gray fine sandstone; trace yellow-brown fine sandstone----- | 200 | 205 |
| Sandstone, slightly carbonaceous, fine, light-gray; minor dark-gray siltstone; yellow fine sandstone----- | 205 | 210 |
| Sandstone, fine, light-gray; minor dark-gray siltstone----- | 210 | 215 |
| Sandstone, fine, light-gray; minor dark-gray siltstone; trace yellow fine sandstone; dark-gray carbonaceous siltstone----- | 215 | 220 |
| Sandstone, fine, gray; minor gray fine carbonaceous sand- stone; light-gray fine sandstone----- | 220 | 225 |
| Sandstone, fine, gray; minor gray fine carbonaceous sand- stone; light-gray fine sandstone----- | 225 | 230 |

Drill-hole W-BC-4-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, light-gray; minor dark-gray carbonaceous siltstone----- | 230 | 235 |
| Sandstone, fine, light-gray; minor dark-gray carbonaceous siltstone----- | 235 | 240 |
| Sandstone, fine, light-gray; minor dark-gray carbonaceous siltstone; trace yellow fine sandstone----- | 240 | 245 |
| Sandstone, medium, light-gray; trace gray fine carbon- aceous sandstone----- | 245 | 250 |
| Sandstone, medium, light-gray; trace gray fine carbon- aceous sandstone----- | 250 | 255 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone----- | 255 | 260 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone----- | 260 | 265 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone----- | 265 | 270 |
| Sandstone, fine, gray; minor brown, fine sandstone; yellow fine sandstone; trace dark-gray carbonaceous siltstone----- | 270 | 275 |
| Sandstone, fine, gray; minor brown fine sandstone; yellow fine sandstone; trace dark-gray carbonaceous siltstone----- | 275 | 280 |
| Sandstone, fine, gray; minor brown, fine sandstone; yellow fine sandstone; trace dark-gray carbonaceous siltstone----- | 280 | 285 |

Drill-hole W-BC-4-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray; minor brown fine sandstone; yellow fine sandstone; trace dark-gray carbonaceous siltstone----- | 285 | 290 |
| Sandstone, fine, gray; minor brown fine sandstone; yellow fine sandstone; trace dark-gray carbonaceous siltstone----- | 290 | 295 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone; trace dark-gray-black carbonaceous shale----- | 295 | 300 |
| Sandstone, fine, gray; minor dark-gray carbonaceous silt- stone; trace dark-gray-black carbonaceous shale; trace yellow fine sandstone----- | 300 | 305 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone----- | 305 | 310 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone; trace carbonaceous shale----- | 310 | 315 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone; trace carbonaceous shale; trace yellow fine sandstone----- | 315 | 320 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone; trace carbonaceous shale; trace yellow fine sandstone----- | 320 | 325 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone; trace carbonaceous shale; trace yellow fine sandstone----- | 325 | 330 |

Drill-hole W-BC-4-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone; trace carbonaceous shale; trace yellow fine sandstone; trace coal----- | 330 | 335 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone----- | 335 | 340 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone----- | 340 | 345 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone----- | 345 | 350 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone----- | 350 | 355 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone----- | 355 | 360 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone----- | 360 | 365 |
| Sandstone, fine, light-gray; trace dark-gray carbonaceous siltstone----- | 365 | 370 |
| Siltstone, gray; minor light-gray fine sandstone----- | 370 | 375 |
| Sandstone, fine, light-gray; minor tan fine sandstone; yellow fine sandstone; gray siltstone; trace coal----- | 375 | 380 |
| Sandstone, fine, light-gray; minor tan fine sandstone; yellow fine sandstone; gray siltstone; trace coal----- | 380 | 385 |

Drill-hole W-BC-4-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, light-gray; minor dark-gray carbonaceous siltstone; yellow fine sandstone; tan fine sandstone----- | 385 | 390 |
| Sandstone, fine, light-gray; minor dark-gray carbonaceous siltstone; yellow fine sandstone; tan fine sandstone----- | 390 | 395 |
| Sandstone, fine, light-gray; minor dark-gray carbonaceous siltstone; yellow fine sandstone; tan fine sandstone----- | 395 | 400 |
| Sandstone, fine, light-gray; minor dark-gray carbonaceous siltstone; yellow fine sandstone; tan fine sandstone----- | 400 | 405 |
| Sandstone, fine, light-gray; minor dark-gray carbonaceous siltstone; trace white siltstone----- | 405 | 410 |
| Sandstone, fine, light-gray; minor dark-gray carbonaceous siltstone; trace white siltstone----- | 410 | 415 |
| Sandstone, fine, light-gray; minor dark-gray carbonaceous siltstone; trace white siltstone----- | 415 | 420 |
| Sandstone, fine, light-gray; minor dark-gray carbonaceous siltstone; trace white siltstone----- | 420 | 425 |
| Sandstone, fine, light-gray; minor dark-gray carbonaceous siltstone; trace white siltstone; trace carbonaceous shale----- | 425 | 430 |
| Sandstone, fine, light-gray; minor dark-gray carbonaceous siltstone; trace white siltstone; trace carbonaceous shale----- | 430 | 435 |
| No recovery----- | 435 | 460 |

Drill-hole W-BC-4-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, carbonaceous, gray; minor light-gray shale; trace coal; gray-green shale----- | 460 | 465 |
| Siltstone, carbonaceous, gray; minor light-gray shale; trace coal; gray-green shale----- | 465 | 470 |
| Sandstone, fine, light-gray; minor gray slightly carbon- aceous siltstone; trace coal; carbonaceous shale----- | 470 | 475 |
| Sandstone, very fine, light-gray; trace white shale; gray siltstone----- | 475 | 480 |
| Sandstone, very fine, light-gray; trace white shale; gray siltstone----- | 480 | 485 |
| Sandstone, very fine, light-gray; trace coal----- | 485 | 490 |
| Sandstone, very fine, light-gray; trace coal----- | 490 | 495 |
| Sandstone, very fine, light-gray; trace coal----- | 495 | 500 |
| Sandstone, very fine, light-gray; minor gray siltstone; gray shale; trace carbonaceous shale----- | 500 | 505 |
| Sandstone, very fine, light-gray; trace brown carbonaceous siltstone; black carbonaceous shale; white shale----- | 505 | 510 |
| Sandstone, very fine, light-gray; trace brown carbonaceous siltstone; black carbonaceous shale; white shale----- | 510 | 515 |
| Sandstone, very fine, light-gray; trace gray siltstone; white shale----- | 515 | 520 |
| Sandstone, very fine, light-gray; trace gray siltstone; white shale----- | 520 | 525 |

Drill-hole W-BC-4-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor orange medium sandstone; gray slightly carbonaceous siltstone; trace gray shale----- | 525 | 530 |
| Shale, gray; minor light-gray fine sandstone; trace black carbonaceous shale; gray-green shale----- | 530 | 535 |
| Shale, gray; minor light-gray fine sandstone; trace black carbonaceous shale; gray-green shale----- | 535 | 540 |
| Sandstone, very fine, light-gray; trace dark-gray carbonaceous siltstone----- | 540 | 545 |
| Sandstone, very fine, light-gray; trace dark-gray carbonaceous siltstone; trace coal----- | 545 | 550 |
| Sandstone, fine, gray; minor dark-gray slightly carbon- aceous siltstone; trace white shale----- | 550 | 555 |
| Sandstone, fine, gray; minor dark-gray slightly carbon- aceous siltstone; trace white shale; trace gray shale---- | 555 | 560 |
| Sandstone, fine, gray; minor dark-gray slightly carbon- aceous siltstone; trace white shale; trace gray shale---- | 560 | 565 |
| Sandstone, fine, light-gray; minor yellow-brown fine sandstone; trace carbonaceous shale; dark-gray carbon- aceous siltstone----- | 565 | 570 |
| Sandstone, fine, light-gray; minor yellow-brown fine sandstone; trace carbonaceous shale; dark-gray carbon- aceous siltstone----- | 570 | 575 |

Drill-hole W-BC-4-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, light-gray; minor yellow-brown fine sandstone; trace carbonaceous shale; dark-gray carbonaceous siltstone----- | 575 | 580 |
| Sandstone, very fine, light-gray; minor gray slightly carbonaceous siltstone; trace gray shale; black carbonaceous shale; yellow-brown fine sandstone----- | 580 | 585 |
| Sandstone, very fine, light-gray; minor gray slightly carbonaceous siltstone; trace gray shale; black carbonaceous shale; yellow-brown fine sandstone----- | 585 | 590 |
| Sandstone, fine, light-gray; minor yellow-brown fine sandstone; trace gray siltstone; gray shale----- | 590 | 595 |
| Sandstone, fine, light-gray; minor yellow-brown fine sandstone; trace gray siltstone; gray shale; trace carbonaceous shale----- | 595 | 600 |
| Sandstone, fine, light-gray; minor gray shale; coal----- | 600 | 605 |
| Sandstone, fine, light-gray; trace gray shale; coal----- | 605 | 610 |
| Sandstone, fine, light-gray; trace gray shale; coal----- | 610 | 615 |
| Sandstone, fine, light-gray; trace gray shale; coal----- | 615 | 620 |
| Sandstone, fine, light-gray; trace gray shale; coal----- | 620 | 625 |
| Sandstone, very fine, light-gray; trace yellow-brown fine sandstone; dark-gray carbonaceous siltstone; white shale----- | 625 | 630 |
| Shale, gray; minor gray-green shale; dark-gray carbonaceous siltstone----- | 630 | 635 |

Drill-hole W-BC-4-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor gray-green shale; dark-gray carbonaceous siltstone----- | 635 | 640 |
| Shale, gray; minor gray-green shale; dark-gray carbonaceous siltstone----- | 640 | 645 |
| Shale, gray; minor gray-green shale; dark-gray carbonaceous siltstone; trace white shale----- | 645 | 650 |
| Sandstone, very fine, light-gray; trace gray siltstone; gray shale; white shale----- | 650 | 655 |
| Sandstone, very fine, light-gray; trace gray siltstone; gray shale; white shale----- | 655 | 660 |
| Sandstone, very fine, light-gray; trace gray siltstone; gray shale; white shale----- | 660 | 665 |
| Sandstone, very fine, light-gray; trace gray siltstone; gray shale; white shale----- | 665 | 670 |
| Sandstone, very fine, light-gray; trace gray siltstone; gray shale; white shale----- | 670 | 675 |
| Sandstone, very fine, light-gray; trace white shale; carbonaceous shale; gray shale----- | 675 | 680 |
| Sandstone, very fine, light-gray; trace white shale; carbonaceous shale; gray shale----- | 680 | 685 |
| Sandstone, very fine, light-gray; trace white shale; carbonaceous shale; gray shale----- | 685 | 690 |
| Sandstone, very fine, light-gray; trace white shale; carbonaceous shale; gray shale----- | 690 | 695 |

Drill-hole W-BC-4-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor gray shale; trace carbonaceous shale; white shale----- | 695 | 700 |
| Sandstone, fine, red-brown; minor light-gray fine sandstone; trace white shale; carbonaceous shale; gray shale----- | 700 | 705 |
| Sandstone, fine, red-brown; minor light-gray fine sandstone; trace white shale; carbonaceous shale; gray shale----- | 705 | 710 |
| Sandstone, very fine, light-gray; trace gray shale; gray-green shale; white shale----- | 710 | 715 |
| Sandstone, very fine, light-gray; trace gray shale; gray-green shale; white shale----- | 715 | 720 |
| Sandstone, very fine, light-gray; trace gray shale; gray-green shale; white shale----- | 720 | 725 |
| Sandstone, very fine, light-gray; minor gray shale; carbonaceous shale; white shale----- | 725 | 730 |
| Sandstone, very fine, light-gray; minor gray shale; carbonaceous shale; white shale----- | 730 | 735 |
| Sandstone, very fine, light-gray; minor gray shale; carbonaceous shale; white shale----- | 735 | 740 |
| Sandstone, very fine, light-gray; minoe yellow-brown fine sandstone; trace black carbonaceous shale; white shale; coal----- | 740 | 745 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace black carbonaceous shale; white shale; coal----- | 745 | 750 |

Drill-hole W-BC-4-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; trace gray shale----- | 750 | 755 |
| No recovery----- | 755 | 780 |
| Sandstone, very fine, light-gray; minor gray shale; trace carbonaceous shale; yellow-brown fine sandstone; white shale----- | 780 | 785 |
| Sandstone, very fine, light-gray; minor gray shale; trace carbonaceous shale; yellow-brown fine sandstone; white shale----- | 785 | 790 |
| Shale, silty; gray; trace light-gray very fine sandstone; tan shale----- | 790 | 795 |
| Shale, silty, gray; trace light-gray very fine sandstone; tan shale----- | 795 | 800 |
| Shale, silty, gray; trace light-gray very fine sandstone; tan shale----- | 800 | 805 |
| Shale, gray; trace gray silty shale; light-gray very fine sandstone; yellow-brown fine sandstone----- | 805 | 810 |
| Shale, gray; trace gray silty shale; light-gray very fine sandstone; yellow-brown fine sandstone----- | 810 | 815 |
| Siltstone, slightly carbonaceous gray; minor gray shale; light-gray very fine sandstone; white shale; yellow- brown fine to medium sandstone----- | 815 | 820 |
| Siltstone, slightly carbonaceous, gray; minor gray shale; light-gray very fine sandstone; white shale; yellow- brown fine to medium sandstone; trace coal----- | 820 | 825 |

Drill-hole W-BC-4-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, slightly carbonaceous, gray; minor gray shale; light-gray very fine sandstone; white shale; yellow-brown fine to medium sandstone----- | 825 | 830 |
| Shale, gray; minor light-gray very fine sandstone; trace white shale; carbonaceous shale----- | 830 | 835 |
| Shale, gray; minor light-gray very fine sandstone; trace white shale; carbonaceous shale----- | 835 | 840 |
| Sandstone, very fine, light-gray; minor gray shale----- | 840 | 845 |
| Sandstone, very fine, light-gray; minor gray shale----- | 845 | 850 |
| Sandstone, very fine, light-gray; minor gray siltstone; trace coal; gray shale----- | 850 | 855 |
| Sandstone, very fine, light-gray; minor gray siltstone; trace gray shale; carbonaceous shale----- | 855 | 860 |
| Sandstone, very fine, light-gray; minor gray siltstone; trace gray shale; carbonaceous shale; minor yellow-brown fine sandstone; trace white shale----- | 860 | 865 |
| Sandstone, very fine, light-gray; minor gray siltstone; trace gray shale; carbonaceous shale; minor yellow-brown fine sandstone; trace white shale----- | 865 | 870 |
| Shale, gray; minor dark-gray siltstone; trace light-gray very fine sandstone; gray-green shale; white shale; carbonaceous shale----- | 870 | 875 |

Drill-hole W-BC-4-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor dark-gray siltstone; trace light-gray very fine sandstone; gray-green shale; white shale; carbonaceous shale----- | 875 | 880 |
| Siltstone, carbonaceous, brown; trace gray shale; white shale; light-gray very fine sandstone----- | 880 | 885 |
| Siltstone, carbonaceous, gray; minor light-gray fine sand- stone; trace gray shale; white shale; coal----- | 885 | 890 |
| Siltstone, carbonaceous, gray; minor light-gray fine sandstone; trace gray shale; white shale; coal----- | 890 | 895 |
| Sandstone, very fine, light-gray; minor coal----- | 895 | 900 |
| Sandstone, very fine, light-gray; minor gray shale; trace coal; white shale----- | 900 | 905 |
| Sandstone, very fine, light-gray; minor gray shale; trace coal; white shale----- | 905 | 910 |
| Shale, gray; minor gray siltstone; light-gray very fine sandstone----- | 910 | 915 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor dark-gray slightly carbonaceous siltstone; trace white shale----- | 915 | 920 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor dark-gray slightly carbonaceous siltstone; trace white shale----- | 920 | 925 |
| Sandstone, fine, light-gray; minor coal; trace gray siltstone----- | 925 | 930 |

Drill-hole W-BC-4-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, light-gray; minor coal; trace gray siltstone----- | 930 | 935 |
| Sandstone, fine, light-gray; minor coal; trace gray siltstone----- | 935 | 940 |
| Siltstone, gray; minor gray fine sandstone; white shale---- | 940 | 945 |
| Siltstone, gray; minor gray fine sandstone; white shale---- | 945 | 950 |
| Sandstone, fine, light-gray; trace dark-gray carbonaceous siltstone; trace white shale; carbonaceous shale----- | 950 | 955 |
| Sandstone, fine, light-gray; trace dark-gray carbonaceous siltstone; trace white shale; carbonaceous shale----- | 955 | 960 |
| Sandstone, fine, light-gray; trace dark-gray carbonaceous siltstone; trace white shale; carbonaceous shale----- | 960 | 965 |
| Sandstone, fine, light-gray; trace dark-gray carbonaceous siltstone; trace white shale; carbonaceous shale----- | 965 | 970 |
| Sandstone, fine, light-gray; trace dark-gray carbonaceous siltstone; trace white shale; carbonaceous shale----- | 970 | 975 |
| Sandstone, very fine, light-gray; minor carbonaceous shale; trace yellow-brown fine sandstone; white shale----- | 975 | 980 |
| Sandstone, very fine, light-gray; minor carbonaceous shale; trace yellow-brown fine sandstone; white shale----- | 980 | 985 |
| Sandstone, very fine, light-gray; minor carbonaceous shale; trace yellow-brown fine sandstone; white shale; trace gray shale----- | 985 | 990 |

Drill-hole W-BC-4-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, light-gray; minor brown-gray siltstone; trace white shale----- | 990 | 995 |
| No recovery----- | 995 | 1,000 |
| No recovery----- | 1,000 | 1,005 |
| No recovery----- | 1,005 | 1,010 |
| Sandstone, very fine, gray; minor carbonaceous shale; gray shale; gray siltstone----- | 1,010 | 1,015 |
| Sandstone, very fine, gray; minor carbonaceous shale; gray shale; gray siltstone; trace yellow-brown fine sandstone----- | 1,015 | 1,020 |
| Sandstone, very fine, gray; minor carbonaceous shale; gray shale; gray siltstone; trace yellow-brown fine sandstone----- | 1,020 | 1,025 |
| Sandstone, very fine, gray; minor carbonaceous shale; gray shale; gray siltstone; trace yellow-brown fine sandstone----- | 1,025 | 1,030 |
| Sandstone, very fine, gray; minor carbonaceous shale; gray shale; gray siltstone; trace yellow-brown fine sandstone----- | 1,030 | 1,035 |
| Sandstone, very fine, gray; minor carbonaceous shale; gray shale; gray siltstone; trace yellow-brown fine sandstone----- | 1,035 | 1,040 |
| Sandstone, very fine, gray; minor carbonaceous shale; gray shale; gray siltstone; trace yellow-brown fine sandstone----- | 1,040 | 1,045 |
| Sandstone, very fine, gray; minor carbonaceous shale; gray shale; gray siltstone; trace yellow-brown fine sandstone----- | 1,045 | 1,050 |
| Sandstone, very fine, gray; minor carbonaceous shale; gray shale; gray siltstone; trace yellow-brown fine sandstone----- | 1,050 | 1,055 |

Drill-hole W-BC-4-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor carbonaceous shale; gray shale; gray siltstone; trace yellow-brown fine sandstone----- | 1,055 | 1,060 |
| Sandstone, fine to medium, gray; trace coal----- | 1,060 | 1,065 |
| Sandstone, fine to medium, gray; trace coal----- | 1,065 | 1,070 |
| Sandstone, medium, gray; trace orange-yellow medium sandstone----- | 1,070 | 1,075 |
| Sandstone, medium, gray; trace orange-yellow medium sandstone; minor gray fine sandstone; gray shale----- | 1,075 | 1,080 |
| Sandstone, mediu, gray; trace orange-yellow medium sandstone; minor gray fine sandstone; gray shale----- | 1,080 | 1,085 |
| Sandstone, fine, gray; minor gray shale; coal----- | 1,085 | 1,090 |
| Sandstone, fine, gray; minor gray shale; carbonaceous shale----- | 1,090 | 1,095 |
| Total depth sampled - 1,095 ft. | | |

Drill-hole W-BC-5-S

NW¼SW¼ sec. 31, T. 12 S., R. 8 E., Salt Lake Principal Meridian, Scofield quadrangle,

Carbon County, Utah; collar elevation 8,400 ft; begun October 2, 1976, completed

October 8, 1976; sampled by L. F. Blanchard, J. V. Roberts, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| No recovery----- | 0 | 5 |
| No recovery----- | 5 | 10 |
| No recovery----- | 10 | 15 |
| Soil; minor buff-yellow-brown fine sandstone----- | 15 | 20 |
| Sandstone, fine, buff-yellow-brown; minor light-gray fine sandstone----- | 20 | 25 |
| Sandstone, fine, buff-yellow-brown; minor light-gray fine sandstone----- | 25 | 30 |
| Sandstone, fine, buff-yellow-brown; minor light-gray fine sandstone----- | 30 | 35 |
| Sandstone, fine, buff-yellow-brown; minor light-gray fine sandstone----- | 35 | 40 |
| Sandstone, fine, buff-yellow-brown; minor light-gray fine sandstone----- | 40 | 45 |
| Sandstone, coarse, yellow-brown; minor gray sandstone----- | 45 | 50 |
| Sandstone, coarse, yellow-brown; minor gray sandstone----- | 50 | 55 |
| Sandstone, coarse, yellow-brown; minor gray sandstone; trace black carbonaceous shale----- | 55 | 60 |
| Sandstone, very fine, light-gray; minor yellow-brown med- ium sandstone; carbonaceous shale----- | 60 | 65 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor yellow-brown medium sandstone; carbonaceous shale----- | 65 | 70 |
| Sandstone, very fine, light-gray; minor yellow-brown medium sandstone; carbonaceous shale----- | 70 | 75 |
| Sandstone, very fine, light-gray; minor yellow-brown medium sandstone; carbonaceous shale; trace coal; white shale----- | 75 | 80 |
| Sandstone, very fine, light-gray; minor dark-gray carbonaceous shale; coal----- | 80 | 85 |
| Sandstone, very fine, light-gray; minor dark-gray shale; trace carbonaceous shale----- | 85 | 90 |
| Siltstone, dark-gray; minor light-gray very fine sandstone; trace carbonaceous shale----- | 90 | 95 |
| Siltstone, dark-gray; minor light-gray very fine sandstone; trace carbonaceous shale----- | 95 | 100 |
| Siltstone, dark-gray; minor light-gray very fine sandstone; trace carbonaceous shale; trace white shale----- | 100 | 105 |
| Siltstone, dark-gray; minor light-gray very fine sandstone; trace carbonaceous shale; trace white shale----- | 105 | 110 |
| Sandstone, very fine, light-gray; trace carbonaceous shale----- | 110 | 115 |
| Sandstone, very fine, light-gray; trace carbonaceous shale----- | 115 | 120 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; trace carbonaceous shale-- | 120 | 125 |
| Sandstone, very fine, light-gray; trace carbonaceous shale-- | 125 | 130 |
| Sandstone, very fine, light-gray; trace carbonaceous shale-- | 130 | 135 |
| Sandstone, very fine, light-gray; minor dark-gray shale----- | 135 | 140 |
| Sandstone, very fine, light-gray; minor dark-gray shale----- | 140 | 145 |
| Sandstone, very fine, light-gray; minor dark-gray shale; minor carbonaceous shale; trace coal----- | 145 | 150 |
| Sandstone, very fine, light-gray; minor dark-gray shale; minor carbonaceous shale; trace coal----- | 150 | 155 |
| Sandstone, fine, light-gray; trace carbonaceous shale, dark- gray shale; black carbonaceous shale; coal----- | 155 | 160 |
| Sandstone, fine, light-gray; trace carbonaceous shale; dark-gray shale; black carbonaceous shale; coal----- | 160 | 165 |
| Sandstone, fine, light-gray; trace carbonaceous shale; dark- gray shale; black carbonaceous shale; coal----- | 165 | 170 |
| Sandstone, fine, light-gray; trace carbonaceous shale; dark-gray shale; black carbonaceous shale; coal----- | 170 | 175 |
| Sandstone, fine, light-gray; trace carbonaceous shale; dark-gray shale; black carbonaceous shale; coal----- | 175 | 180 |
| Sandstone, fine, light-gray; trace carbonaceous shale; dark-gray shale; black carbonaceous shale; coal----- | 180 | 185 |
| Sandstone, fine, light-gray; trace carbonaceous shale; dark-gray; shale; black carbonaceous shale; coal----- | 185 | 190 |
| Sandstone, fine, light-gray; trace carbonaceous shale; dark-gray shale; black carbonaceous shale; coal----- | 190 | 195 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine to medium, light-gray; minor dark-gray shale; carbonaceous shale; trace white shale----- | 195 | 200 |
| Sandstone, very fine, light-gray; minor dark-gray shale; trace carbonaceous shale----- | 200 | 205 |
| Sandstone, very fine, light-gray; minor dark-gray shale; trace carbonaceous shale----- | 205 | 210 |
| Sandstone, very fine, light-gray; minor dark-gray shale; trace carbonaceous shale----- | 210 | 215 |
| Sandstone, very fine, light-gray; minor dark-gray shale; trace carbonaceous shale----- | 215 | 220 |
| Sandstone, very fine, light-gray; minor dark-gray shale; trace carbonaceous shale; minor yellow-brown medium sandstone----- | 220 | 225 |
| Sandstone, very fine, light-gray; minor dark-gray shale; trace carbonaceous shale; minor yellow-brown medium sandstone----- | 225 | 230 |
| Sandstone, very fine, light-gray; minor dark-gray silt-stone; trace carbonaceous shale----- | 230 | 235 |
| Sandstone, very fine, light-gray; minor dark-gray silt-stone; trace carbonaceous shale----- | 235 | 240 |
| Sandstone, very fine, light-gray; minor dark-gray silt-stone; trace carbonaceous shale; trace coal----- | 240 | 245 |
| Sandstone, very fine, light-gray; minor dark-gray silt-stone; trace carbonaceous shale; trace coal----- | 245 | 250 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray shale; yellow-brown medium sandstone; trace black carbonaceous shale----- | 250 | 255 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray shale; yellow-brown medium sandstone; trace black carbonaceous shale; trace dark-gray shale----- | 255 | 260 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray shale; yellow-brown medium sandstone; trace black carbonaceous shale; trace dark-gray shale----- | 260 | 265 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray shale; yellow-brown medium sandstone; trace black carbonaceous shale; trace dark-gray shale----- | 265 | 270 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray shale; yellow-brown medium sandstone; trace black carbonaceous shale; trace dark-gray shale----- | 270 | 275 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray shale; trace carbonaceous shale----- | 275 | 280 |
| Sandstone, very fine, light-gray; minor dark-gray car- bonaceous siltstone; trace gray shale----- | 280 | 285 |
| Sandstone, very fine, light-gray; minor dark-gray car- bonaceous siltstone; trace gray shale----- | 285 | 290 |
| Sandstone, very fine, light-gray; minor dark-gray car- bonaceous siltstone; trace gray shale----- | 290 | 295 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor black carbonaceous shale; dark-gray carbonaceous siltstone; gray shale; white shale----- | 295 | 300 |
| Sandstone, very fine, light-gray; minor black carbonaceous shale; dark-gray carbonaceous siltstone; gray shale; white shale----- | 300 | 305 |
| Sandstone, very fine, light-gray; trace pyrite; black carbonaceous shale; coal; gray carbonaceous siltstone----- | 305 | 310 |
| Sandstone, very fine, light-gray; minor yellow fine sandstone; carbonaceous shale----- | 310 | 315 |
| Sandstone, very fine, light-gray; minor yellow fine sandstone; carbonaceous shale----- | 315 | 320 |
| Sandstone, very fine, light-gray; minor yellow fine sandstone; carbonaceous shale----- | 320 | 325 |
| Sandstone, very fine, light-gray; trace black carbonaceous shale; yellow fine sandstone----- | 325 | 330 |
| Sandstone, very fine, light-gray; trace black carbonaceous shale; yellow fine sandstone----- | 330 | 335 |
| Sandstone, very fine, light-gray; minor carbonaceous shale; trace white shale; yellow fine sandstone----- | 335 | 340 |
| Sandstone, very fine, light-gray; minor carbonaceous shale; trace white shale; yellow fine sandstone----- | 340 | 345 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor carbonaceous shale; trace white shale; yellow fine sandstone----- | 345 | 350 |
| Sandstone, very fine, light-gray; trace black carbonaceous shale; white shale----- | 350 | 355 |
| Sandstone, very fine, light-gray; trace black carbonaceous shale; white shale----- | 355 | 360 |
| Sandstone, very fine, light-gray; trace black carbonaceous shale; white shale----- | 360 | 365 |
| Sandstone, very fine, light-gray; minor gray shale; trace black carbonaceous shale; yellow-brown medium sandstone-- | 365 | 370 |
| Sandstone, very fine, light-gray; minor gray shale; trace black carbonaceous shale; yellow-brown medium sandstone-- | 370 | 375 |
| Sandstone, very fine, light-gray; minor gray shale; trace black carbonaceous shale; yellow-brown medium sandstone-- | 375 | 380 |
| Sandstone, very fine, light-gray; minor black carbonaceous shale; trace gray shale----- | 380 | 385 |
| Sandstone, very fine, light-gray; minor black carbonaceous shale; trace gray shale; trace coal----- | 385 | 390 |
| Sandstone, very fine, light-gray; minor black carbonaceous shale; trace gray shale; trace coal----- | 390 | 395 |
| Sandstone, slightly carbonaceous, very fine, light-gray; trace black carbonaceous shale----- | 395 | 400 |
| Sandstone, slightly carbonaceous, very fine, light-gray; trace black carbonaceous shale----- | 400 | 405 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, slightly carbonaceous, very fine, light-gray; trace black carbonaceous shale----- | 405 | 410 |
| Sandstone, very fine, light-gray; trace gray shale; black carbonaceous shale; red-brown medium sandstone----- | 410 | 415 |
| Sandstone, very fine, light-gray; trace gray shale; black carbonaceous shale; red-brown medium sandstone----- | 415 | 420 |
| Sandstone, very fine, light-gray; trace gray shale; black carbonaceous shale; red-brown medium sandstone----- | 420 | 425 |
| Sandstone, very fine, light-gray; trace gray shale; black carbonaceous shale; red-brown medium sandstone----- | 425 | 430 |
| Sandstone, very fine, light-gray; trace black carbonaceous shale; coal----- | 430 | 435 |
| Sandstone, very fine, light-gray; trace black carbonaceous shale; coal; trace dark-gray siltstone; white shale----- | 435 | 440 |
| Sandstone, very fine, light-gray; trace black carbonaceous shale; coal; trace dark-gray siltstone; white shale----- | 440 | 445 |
| Sandstone, very fine, light-gray; trace black carbonaceous shale; coal; trace dark-gray siltstone; white shale----- | 445 | 450 |
| Sandstone, very fine, light-gray; trace black carbonaceous shale; coal; trace dark-gray siltstone; white shale----- | 450 | 455 |
| Sandstone, very fine, light-gray; minor white shale; trace black carbonaceous shale; dark-gray carbonaceous siltstone----- | 455 | 460 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor white shale; trace black carbonaceous shale; dark-gray carbonaceous siltstone----- | 460 | 465 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone; trace pyrite; black carbonaceous shale; yellow-brown medium sandstone----- | 465 | 470 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone; trace pyrite; black carbonaceous shale; yellow-brown medium sandstone----- | 470 | 475 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone; trace pyrite; black carbonaceous shale; yellow-brown medium sandstone----- | 475 | 480 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone; trace pyrite; black carbonaceous shale; yellow-brown medium sandstone----- | 480 | 485 |
| Sandstone, very fine, light-gray; minor gray shale; yellow-brown medium sandstone; trace black carbonaceous shale--- | 485 | 490 |
| Sandstone, very fine, light-gray; minor gray shale; yellow-brown medium sandstone; trace black carbonaceous shale--- | 490 | 495 |
| Sandstone, very fine, light-gray; minor gray shale; yellow-brown medium sandstone; trace black carbonaceous shale--- | 495 | 500 |
| Sandstone, very fine, light-gray; minor gray shale; yellow-brown medium sandstone; trace black carbonaceous shale--- | 500 | 505 |

Drill-hoe W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor gray shale; yellow-brown medium sandstone----- | 505 | 510 |
| Sandstone, very fine, light-gray; minor gray shale; yellow-brown medium sandstone----- | 510 | 515 |
| Sandstone, very fine, light-gray; minor gray shale; yellow-brown medium sandstone; trace black carbonaceous shale--- | 515 | 520 |
| Sandstone, very fine, light-gray; minor gray shale; yellow-brown medium sandstone; trace black carbonaceous shale---- | 520 | 525 |
| Sandstone, very fine, light-gray; minor gray shale; yellow-brown medium sandstone; trace black carbonaceous shale--- | 525 | 530 |
| Sandstone, very fine, light-gray; minor gray; shale; yellow-brown medium sandstone; trace black carbonaceous shale--- | 530 | 535 |
| Sandstone, very fine, light-gray; minor gray shale; yellow-brown medium sandstone; trace black carbonaceous shale; trace white shale----- | 535 | 540 |
| Sandstone, very fine, light-gray; minor yellow-brown medium sandstone; red-brown medium sandstone----- | 540 | 545 |
| Sandstone, very fine, light-gray; minor yellow-brown medium sandstone; red-brown medium sandstone----- | 545 | 550 |
| Sandstone, very fine, light-gray; minor yellow-brown medium sandstone; red-brown medium sandstone----- | 550 | 555 |
| Sandstone, very fine, light-gray; minor light-gray siltstone; yellow-brown medium sandstone; trace red-brown medium sandstone; gray siltstone----- | 555 | 560 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor light-gray siltstone; yellow-brown medium sandstone; trace red-brown medium sandstone; gray siltstone----- | 560 | 565 |
| Sandstone, very fine, light-gray; minor light-gray siltstone; yellow-brown medium sandstone; trace red-brown medium sandstone; gray siltstone----- | 565 | 570 |
| Sandstone, very fine, light-gray; minor light-gray siltstone; yellow-brown medium sandstone; trace red-brown medium sandstone; gray siltstone----- | 570 | 575 |
| Sandstone, very fine, light-gray; trace yellow-brown medium sandstone; dark-gray siltstone----- | 575 | 580 |
| Sandstone, very fine, light-gray; trace yellow-brown medium sandstone; dark-gray siltstone----- | 580 | 585 |
| Sandstone, very fine, light-gray; trace yellow-brown medium sandstone; dark-gray siltstone; trace red-brown medium sandstone----- | 585 | 590 |
| Sandstone, very fine, light-gray; trace yellow-brown medium sandstone; dark-gray siltstone; trace red-brown medium sandstone----- | 590 | 595 |
| Sandstone, very fine, light-gray; trace yellow-brown medium sandstone; dark-gray siltstone; trace red-brown medium sandstone----- | 595 | 600 |
| Sandstone, very fine, light-gray; minor gray shale; trace yellow-brown medium sandstone----- | 600 | 605 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor gray shale; trace yellow-brown medium sandstone----- | 605 | 610 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace carbonaceous shale; gray shale----- | 610 | 615 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace carbonaceous shale; gray shale----- | 615 | 620 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace carbonaceous shale; gray shale----- | 620 | 625 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace carbonaceous shale; gray shale----- | 625 | 630 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace carbonaceous shale; gray shale----- | 630 | 635 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace pyrite; dark-gray carbonaceous siltstone----- | 635 | 640 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace pyrite; dark-gray carbonaceous siltstone----- | 640 | 645 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace pyrite; dark-gray carbonaceous siltstone----- | 645 | 650 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace dark-gray carbonaceous siltstone; black carbonaceous shale----- | 650 | 655 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace dark-gray carbonaceous siltstone; black carbonaceous shale; trace gray shale----- | 655 | 660 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace dark-gray carbonaceous siltstone; black carbonaceous shale; trace gray shale----- | 660 | 665 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace dark-gray carbonaceous siltstone; black carbonaceous shale; trace gray shale----- | 665 | 670 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace dark-gray carbonaceous siltstone; black carbonaceous shale; trace gray shale----- | 670 | 675 |
| Sandstone, very fine, light-gray; minor gray shale; trace yellow-brown fine sandstone; dark-gray carbonaceous siltstone----- | 675 | 680 |
| Sandstone, very fine, light-gray; minor gray shale; trace yellow-brown fine sandstone; dark-gray carbonaceous siltstone----- | 680 | 685 |
| Sandstone, very fine, light-gray; minor yellow-brown medium sandstone; trace gray shale----- | 685 | 690 |
| Sandstone, very fine, light-gray; minor gray shale; trace yellow-brown medium sandstone; white shale----- | 690 | 695 |
| Sandstone, very fine, light-gray; minor gray shale; trace yellow-brown medium sandstone; white shale----- | 695 | 700 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor yellow-brown medium sandstone; gray shale; trace dark-gray siltstone--- | 700 | 705 |
| Sandstone, very fine, light-gray; minor yellow-brown medium sandstone; gray shale; trace dark-gray siltstone; trace black carbonaceous shale----- | 705 | 710 |
| Sandstone, very fine, light-gray; minor yellow-brown medium sandstone; gray shale; trace dark-gray siltstone; trace black carbonaceous shale----- | 710 | 715 |
| Sandstone, very fine, light-gray; minor yellow-brown medium sandstone; gray shale; trace dark-gray siltstone; trace black carbonaceous shale----- | 715 | 720 |
| Sandstone, medium, yellow-brown; minor light-gray fine sandstone; trace black carbonaceous shale; dark-gray siltstone; gray shale----- | 720 | 725 |
| Sandstone, medium, yellow-brown; minor light-gray fine sandstone; trace black carbonaceous shale; dark-gray siltstone; gray shale----- | 725 | 730 |
| Sandstone, medium, yellow-brown; minor light-gray fine sandstone; trace black carbonaceous shale; dark-gray siltstone; gray shale----- | 730 | 735 |
| Sandstone, very fine, light-gray; trace yellow-brown medium sandstone; gray shale; black carbonaceous shale--- | 735 | 740 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; trace yellow-brown medium sandstone; gray shale; black carbonaceous shale; trace white shale----- | 740 | 745 |
| Sandstone, very fine, light-gray; trace yellow-brown medium sandstone; gray shale; black carbonaceous shale; trace white shale----- | 745 | 750 |
| Sandstone, very fine, light-gray; trace yellow-brown medium sandstone; gray shale; black carbonaceous shale; trace white shale----- | 750 | 755 |
| Sandstone, very fine, light-gray; trace yellow-brown medium sandstone; gray shale; black carbonaceous shale; trace white shale----- | 755 | 760 |
| Sandstone, very fine, light-gray; trace yellow-brown medium sandstone; gray shale; black carbonaceous shale; trace white shale----- | 760 | 765 |
| Sandstone, very fine, light-gray; trace yellow-brown medium sandstone; gray shale; black carbonaceous shale; trace white shale----- | 765 | 770 |
| Sandstone, very fine, light-gray; minor yellow, fine to medium sandstone; black carbonaceous shale; trace red- brown medium sandstone; white shale; gray shale----- | 770 | 775 |
| Sandstone, very fine, light-gray; minor yellow, fine to medium sandstone; black carbonaceous shale; trace red- brown medium sandstone; white shale; gray shale----- | 775 | 780 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine to medium, yellow; minor light-gray very fine sandstone; gray shale; red-brown shale; trace black carbonaceous shale----- | 780 | 785 |
| Sandstone, fine to medium, yellow; minor light-gray very fine sandstone; gray shale; red-brown shale; trace black carbonaceous shale; trace coal----- | 785 | 790 |
| Sandstone, fine to medium, yellow; minor light-gray very fine sandstone; gray shale; red-brown shale; trace black carbonaceous shale; trace coal----- | 790 | 795 |
| Sandstone, medium, yellow-brown; minor light-gray very fine sandstone; red-brown medium sandstone; trace white shale; coal; black carbonaceous shale----- | 795 | 800 |
| Sandstone, medium, yellow-brown; minor light-gray very fine sandstone; red-brown medium sandstone; trace white shale; coal; black carbonaceous shale----- | 800 | 805 |
| Sandstone, medium, yellow-brown; minor light-gray very fine sandstone; red-brown medium sandstone; trace white shale; black carbonaceous shale----- | 805 | 810 |
| Sandstone, medium, yellow-brown; minor light-gray very fine sandstone; red-brown medium sandstone; trace white shale; black carbonaceous shale----- | 810 | 815 |
| Shale, gray; minor yellow-brown medium sandstone; light-gray very fine sandstone; trace white shale; carbonaceous shale----- | 815 | 820 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor yellow-brown medium sandstone; light-gray very fine sandstone; trace white shale; carbonaceous shale----- | 820 | 825 |
| Sandstone, very fine, light-gray; minor yellow-brown medium sandstone; gray shale; carbonaceous shale; trace white shale----- | 825 | 830 |
| Sandstone, fine to medium, yellow-brown; minor light-gray fine sandstone; gray shale; carbonaceous shale; trace coal----- | 830 | 835 |
| Shale, light-gray; minor yellow-brown medium sandstone; light-gray fine sandstone; carbonaceous shale----- | 835 | 840 |
| Shale, light-gray; minor yellow-brown medium sandstone; light-gray fine sandstone; carbonaceous shale----- | 840 | 845 |
| Shale, light-gray; minor yellow-brown medium sandstone; light-gray fine sandstone; carbonaceous shale; trace white shale----- | 845 | 850 |
| Shale, light-gray; minor yellow-brown medium sandstone; light-gray fine sandstone; carbonaceous shale; trace white shale----- | 850 | 855 |
| Shale, light-gray; minor yellow-brown medium sandstone; light-gray fine sandstone; carbonaceous shale; trace white shale; trace coal----- | 855 | 860 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, light-gray; minor yellow-brown medium sandstone; light-gray fine sandstone; carbonaceous shale; trace white shale; trace coal----- | 860 | 865 |
| Sandstone, light-gray; minor yellow-brown medium sandstone; light-gray fine sandstone; carbonaceous shale; trace white shale; trace coal----- | 865 | 870 |
| Sandstone, light-gray; minor yellow-brown medium sandstone; light-gray fine sandstone; carbonaceous shale; trace white shale; trace coal----- | 870 | 875 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace gray shale; carbonaceous shale; white shale----- | 875 | 880 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace gray shale; carbonaceous shale; white shale----- | 880 | 885 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace gray shale; carbonaceous shale; white shale----- | 885 | 890 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace gray shale; carbonaceous shale; white shale; trace coal; dark-gray carbonaceous siltstone----- | 890 | 895 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace gray shale; carbonaceous shale; white shale; trace coal; dark-gray carbonaceous siltstone----- | 895 | 900 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace gray shale; carbonaceous shale; white shale; trace coal; dark-gray carbonaceous siltstone----- | 900 | 905 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace gray shale; carbonaceous shale; white shale; trace coal; dark-gray carbonaceous siltstone----- | 905 | 910 |
| Sandstone, very fine, light-gray; minor dark-gray carbonaceous siltstone; yellow-brown fine sandstone; trace carbonaceous shale; white shale----- | 910 | 915 |
| Sandstone, very fine, light-gray; minor dark-gray carbonaceous siltstone; yellow-brown fine sandstone; trace carbonaceous shale; white shale----- | 915 | 920 |
| Shale, gray; minor light-gray fine sandstone; trace yellow-brown sandstone----- | 920 | 925 |
| Shale, gray; minor light-gray fine sandstone; trace yellow-brown sandstone----- | 925 | 930 |
| Shale, dark-gray; trace light-gray very fine sandstone; yellow-brown fine sandstone----- | 930 | 935 |
| Shale, dark-gray; trace light-gray very fine sandstone; yellow-brown fine sandstone----- | 935 | 940 |
| Shale, gray; minor white shale; trace light-gray very fine sandstone----- | 940 | 945 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, dark-gray; minor gray shale; light-gray very fine sandstone; yellow-brown fine sandstone; trace dark-gray carbonaceous siltstone----- | 945 | 950 |
| Shale, gray; minor dark-gray shale; light-gray very fine sandstone; trace yellow-brown fine sandstone; dark-gray carbonaceous siltstone; white shale----- | 950 | 955 |
| Shale, gray; minor dark-gray shale; light-gray very fine sandstone; trace yellow-brown fine sandstone; dark-gray carbonaceous siltstone; white shale----- | 955 | 960 |
| Shale, gray; minor dark-gray shale; light-gray very fine sandstone; trace yellow-brown fine sandstone; dark-gray carbonaceous siltstone; white shale----- | 960 | 965 |
| Shale, gray; minor light-gray very fine sandstone; yellow-brown fine sandstone; black carbonaceous shale; trace white shale; red-brown fine sandstone----- | 965 | 970 |
| Shale, gray; minor light-gray very fine sandstone; yellow-brown fine sandstone; black carbonaceous shale; trace white shale; red-brown fine sandstone----- | 970 | 975 |
| Shale, gray; minor light-gray very fine sandstone; yellow-brown fine sandstone; black carbonaceous shale; trace white shale; red-brown fine sandstone----- | 975 | 980 |
| Shale, gray; minor light-gray very fine sandstone; coal; trace yellow-brown fine sandstone; white shale----- | 980 | 985 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor light-gray very fine sandstone; coal; trace yellow-brown fine sandstone; white shale----- | 985 | 990 |
| Shale, gray; minor light-gray very fine sandstone; yellow- brown fine sandstone; trace white shale; carbonaceous siltstone; red-brown fine sandstone----- | 990 | 995 |
| Shale, gray; minor light-gray very fine sandstone; yellow- brown fine sandstone; trace white shale; carbonaceous siltstone; red-brown fine sandstone----- | 995 | 1,000 |
| Shale, gray; minor light-gray very fine sandstone; yellow- brown fine sandstone; trace white shale; carbonaceous siltstone; red-brown fine sandstone----- | 1,000 | 1,005 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace gray shale; white shale; dark- gray carbonaceous shale----- | 1,005 | 1,010 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace gray shale; white shale; dark- gray carbonaceous shale----- | 1,010 | 1,015 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace gray shale; white shale; dark- gray carbonaceous shale----- | 1,015 | 1,020 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace gray shale; white shale; dark- gray carbonaceous shale; minor red-brown medium sandstone----- | 1,020 | 1,025 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace gray shale; white shale; dark-gray carbonaceous shale; minor red-brown medium sandstone----- | 1,025 | 1,030 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace gray shale; white shale; dark-gray carbonaceous shale; minor red-brown medium sandstone----- | 1,030 | 1,035 |
| Sandstone, fine, yellow-brown; minor red-brown fine sandstone; trace gray shale; white shale; dark-gray shale; light-gray very fine sandstone----- | 1,035 | 1,040 |
| Sandstone, fine, yellow-brown; minor red-brown fine sandstone; trace gray shale; white shale; dark-gray shale; light-gray very fine sandstone----- | 1,040 | 1,045 |
| Sandstone, fine, yellow-brown; minor red brown fine sandstone; trace gray shale; white shale; dark-gray shale; light-gray very fine sandstone----- | 1,045 | 1,050 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; red-brown fine sandstone; trace gray shale; white shale; black carbonaceous shale----- | 1,050 | 1,055 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; red-brown fine sandstone; trace gray shale; white shale; black carbonaceous shale----- | 1,055 | 1,060 |
| Sandstone, very fine, light-gray; minor ^R yellow-brown fine sandstone; trace gray shale; carbonaceous shale; coal---- | 1,060 | 1,065 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; trace gray shale; carbonaceous shale; coal---- | 1,065 | 1,070 |
| Sandstone, very fine, light-gray; minor red-brown fine sandstone; gray shale; carbonaceous shale; yellow-brown fine sandstone----- | 1,070 | 1,075 |
| Sandstone, very fine, light-gray; trace gray shale; yellow-brown fine sandstone----- | 1,075 | 1,080 |
| Sandstone, very fine light-gray; trace gray shale; yellow-brown fine sandstone; trace carbonaceous shale---- | 1,080 | 1,085 |
| Sandstone, very fine, light-gray; trace gray shale; carbonaceous shale; coal----- | 1,085 | 1,090 |
| Sandstone, very fine, light-gray; trace gray shale; carbonaceous shale; coal----- | 1,090 | 1,095 |
| Sandstone, very fine, light-gray; trace gray shale; carbonaceous shale; coal----- | 1,095 | 1,100 |
| Sandstone, very fine, light-gray; trace gray shale; carbonaceous shale; coal----- | 1,100 | 1,105 |
| Sandstone, very fine, light-gray; trace gray shale; carbonaceous shale; coal; trace white shale----- | 1,105 | 1,110 |
| Sandstone, very fine, light-gray; minor coal; trace gray shale; carbonaceous shale; yellow-brown fine sandstone--- | 1,110 | 1,115 |
| Sandstone, fine, yellow-brown; minor light-gray very fine sandstone; trace carbonaceous shale; coal; gray shale---- | 1,115 | 1,120 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, yellow-brown; minor light-gray very fine sandstone; trace carbonaceous shale; coal; gray shale----- | 1,120 | 1,125 |
| Sandstone, very fine, light-gray; minor yellow-brown very fine sandstone; trace white shale; coal; carbonaceous shale----- | 1,125 | 1,130 |
| Sandstone, very fine, light-gray; minor yellow-brown very fine sandstone; trace white shale; coal; carbonaceous shale----- | 1,130 | 1,135 |
| Sandstone, very fine, light-gray; minor yellow-brown very fine sandstone; trace white shale; coal; carbonaceous shale----- | 1,135 | 1,140 |
| Sandstone, very fine, light-gray; minor yellow-brown very fine sandstone; trace white shale; coal; carbonaceous shale----- | 1,140 | 1,145 |
| Sandstone, very fine, light-gray; minor yellow-brown very fine sandstone; trace white shale; coal; carbonaceous shale----- | 1,145 | 1,150 |
| Sandstone, very fine, light-gray; minor yellow-brown very fine sandstone; trace white shale; coal; carbonaceous shale----- | 1,150 | 1,155 |
| Sandstone, very fine, light-gray; trace gray shale; white shale; yellow-brown fine sandstone----- | 1,155 | 1,160 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; trace gray shale; white shale; yellow-brown fine sandstone; trace coal; carbonaceous shale----- | 1,160 | 1,165 |
| Sandstone, very fine, light-gray; trace gray shale; white shale; yellow-brown fine sandstone; trace coal; carbonaceous shale----- | 1,165 | 1,170 |
| Sandstone, very fine, light-gray; trace gray shale; white shale; yellow-brown fine sandstone; trace coal; carbonaceous shale----- | 1,170 | 1,175 |
| Sandstone, very fine, light-gray; trace gray shale; white shale; coal----- | 1,175 | 1,180 |
| Sandstone, very fine, light-gray; trace gray shale; white shale; coal----- | 1,180 | 1,185 |
| Sandstone, very fine, light-gray; trace gray shale; white shale; coal----- | 1,185 | 1,190 |
| Sandstone, very fine, light-gray; minor gray shale; white shale; trace carbonaceous shale----- | 1,190 | 1,195 |
| Sandstone, very fine, light-gray; minor gray shale; white shale; trace carbonaceous shale; trace coal----- | 1,195 | 1,200 |
| Sandstone, very fine, light-gray; minor gray shale; white shale; trace carbonaceous shale; trace coal----- | 1,200 | 1,205 |
| Sandstone, very fine, yellow-brown; minor light-gray very fine sandstone; trace gray shale; coal----- | 1,205 | 1,210 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor yellow-brown very fine sandstone; gray shale; trace white shale; coal; carbonaceous shale----- | 1,210 | 1,215 |
| Sandstone, very fine, light-gray; minor yellow-brown very fine sandstone; gray shale; trace white shale; coal; carbonaceous shale----- | 1,215 | 1,220 |
| Sandstone, very fine, light-gray; minor yellow-brown very fine sandstone; gray shale; trace white shale; coal; carbonaceous shale----- | 1,220 | 1,225 |
| Sandstone, very fine, light-gray; minor yellow-brown very fine sandstone; gray shale; trace white shale; coal; carbonaceous shale----- | 1,225 | 1,230 |
| Coal; light-gray very fine sandstone; yellow-brown medium sandstone; trace gray shale----- | 1,230 | 1,235 |
| Sandstone, fine, yellow-brown; minor light-gray very fine sandstone; gray shale; coal; trace carbonaceous shale; white shale----- | 1,235 | 1,240 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; coal; trace gray shale; white shale; carbonaceous shale----- | 1,240 | 1,245 |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; coal; trace gray shale; white shale; carbonaceous shale----- | 1,245 | 1,250 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor yellow-brown fine sandstone; coal; trace gray shale; white shale; carbonaceous shale----- | 1,250 | 1,255 |
| Sandstone, very fine, light-gray; minor coal; trace yellow-brown fine sandstone; gray shale; white shale----- | 1,255 | 1,260 |
| Sandstone, very fine, light-gray; minor coal; trace yellow-brown fine sandstone; gray shale; white shale----- | 1,260 | 1,265 |
| Sandstone, very fine, light-gray; minor coal; trace yellow-brown fine sandstone; gray shale; white shale----- | 1,265 | 1,270 |
| Sandstone, very fine, light-gray; minor coal; trace yellow-brown fine sandstone; gray shale; white shale----- | 1,270 | 1,275 |
| Sandstone, fine, yellow-brown; minor light-gray very fine sandstone; gray shale; trace white shale; coal----- | 1,275 | 1,280 |
| Sandstone, very fine, light-gray; trace yellow-brown fine sandstone; white shale; gray shale; coal----- | 1,280 | 1,285 |
| Sandstone, very fine, light-gray; trace yellow-brown fine sandstone; white shale; gray shale; coal----- | 1,285 | 1,290 |
| Sandstone, very fine, light-gray; minor gray shale; white shale; trace carbonaceous shale; coal; yellow-brown fine sandstone----- | 1,290 | 1,295 |
| Sandstone, very fine, light-gray; minor gray shale; white shale; trace carbonaceous shale; coal; yellow-brown fine sandstone----- | 1,295 | 1,300 |

Drill-hole W-BC-5-S - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor gray shale; white shale; trace carbonaceous shale; coal; yellow-brown fine sandstone----- | 1,300 | 1,305 |
| Sandstone, very fine, light-gray; minor gray shale; white shale; trace carbonaceous shale; coal; yellow-brown fine sandstone----- | 1,305 | 1,310 |
| Sandstone, very fine, light-gray; minor gray shale; white shale; trace carbonaceous shale; coal; yellow-brown fine sandstone----- | 1,310 | 1,315 |
| Sandstone, very fine, light-gray; minor gray shale; white shale; trace carbonaceous shale; coal; yellow-brown fine sandstone----- | 1,315 | 1,320 |
| Total depth sampled - 1,320 ft. | | |

Drill-hole W-NH-1-CD

NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 1, T. 19 S., R. 6 E., Salt Lake Principal Meridian, Castledale quadrangle
Emery County, Utah; collar elevation 8,400 ft; begun September 17, 1976, completed
September 20, 1976; sampled by L. F. Blanchard, Tom Pike, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Soil----- | 0 | 5 |
| Soil----- | 5 | 10 |
| Sandstone, very fine, tan----- | 10 | 15 |
| Sandstone, very fine, tan----- | 15 | 20 |
| Sandstone, very fine, tan----- | 20 | 25 |
| Sandstone, medium to coarse, tan----- | 25 | 30 |
| Sandstone, coarse, light-tan----- | 30 | 35 |
| Sandstone, medium, light-tan----- | 35 | 40 |
| Sandstone, medium, light-tan----- | 40 | 45 |
| Sandstone, fine, white----- | 45 | 50 |
| Sandstone, fine, tan----- | 50 | 55 |
| Sandstone, fine, tan----- | 55 | 60 |
| Sandstone, fine, tan----- | 60 | 65 |
| Sandstone, fine, tan----- | 65 | 70 |
| Sandstone, very fine, gray; minor slightly carbonaceous siltstone----- | 70 | 75 |
| Sandstone, very fine, light-gray----- | 75 | 80 |
| Sandstone, fine, light-gray----- | 80 | 85 |
| Sandstone, fine, light-gray----- | 85 | 90 |

Drill-hole W-NH-1-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, light-gray----- | 90 | 95 |
| Sandstone, fine, light-gray----- | 95 | 100 |
| Sandstone, fine, light-gray----- | 100 | 105 |
| Sandstone, fine, light-gray----- | 105 | 110 |
| Sandstone, fine, light-gray----- | 110 | 115 |
| Sandstone, fine, light-gray----- | 115 | 120 |
| Sandstone, fine, light-gray----- | 120 | 125 |
| Siltstone, carbonaceous, dark-brown; minor dark-brown, very fine sandstone----- | 125 | 130 |
| Siltstone, carbonaceous, dark-brown; minor dark-brown, very fine sandstone----- | 130 | 135 |
| Sandstone, fine, light-gray----- | 135 | 140 |
| Sandstone, fine, light-gray----- | 140 | 145 |
| Siltstone, carbonaceous, dark-gray----- | 145 | 150 |
| Sandstone, fine, gray----- | 150 | 155 |
| Sandstone, fine, light-gray----- | 155 | 160 |
| Sandstone, fine, light-gray----- | 160 | 165 |
| Sandstone, fine, light-gray----- | 165 | 170 |
| Sandstone, fine, light-gray----- | 170 | 175 |
| Sandstone, fine, light-gray----- | 175 | 180 |
| Sandstone, fine, light-gray----- | 180 | 185 |
| Siltstone, carbonaceous, dark-brown----- | 185 | 190 |
| Sandstone, fine, dark-gray----- | 190 | 195 |
| Sandstone, fine, light-gray----- | 195 | 200 |

Drill-hole W-NH-1-CD - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; trace coal----- | 200 | 205 |
| Sandstone, fine, light-gray; trace carbonaceous material---- | 205 | 210 |
| Sandstone, fine, light-gray; trace carbonaceous material---- | 210 | 215 |
| - Sandstone, fine, light-gray; trace carbonaceous material---- | 215 | 220 |
| Sandstone, fine, light-gray; trace carbonaceous material---- | 220 | 225 |
| Sandstone, fine, light-gray; trace carbonaceous material---- | 225 | 230 |
| Sandstone, fine, light-gray; trace carbonaceous material---- | 230 | 235 |
| Sandstone, fine, light-gray; trace carbonaceous material---- | 235 | 240 |
| Sandstone, fine, light-gray; trace carbonaceous material---- | 240 | 245 |
| Sandstone, medium, light-gray----- | 245 | 250 |
| Sandstone, fine, light-gray----- | 250 | 255 |
| Sandstone, fine, light-gray----- | 255 | 260 |
| Sandstone, fine, light-gray----- | 260 | 265 |
| Sandstone, fine, light-gray----- | 265 | 270 |
| Sandstone, fine, gray; trace coal; pyrite----- | 270 | 275 |
| Sandstone, fine, light-gray----- | 275 | 280 |
| Sandstone, fine, light-gray----- | 280 | 285 |
| Sandstone, fine, light-gray----- | 285 | 290 |
| Sandstone, fine, light-gray----- | 290 | 295 |
| Sandstone, fine, light-gray----- | 295 | 300 |
| Siltstone, carbonaceous, dark-gray----- | 300 | 305 |
| Siltstone, carbonaceous, dark-gray----- | 305 | 310 |
| Sandstone, fine, light-gray----- | 310 | 315 |
| Sandstone, fine, light-gray----- | 315 | 320 |

Drill-hole W-NH-1-CD - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, light-gray; minor dark-gray carbonaceous shale; dark-gray siltstone; trace coal----- | 320 | 325 |
| Siltstone, gray----- | 325 | 330 |
| Siltstone, gray----- | 330 | 335 |
| Sandstone, very fine, light-gray----- | 335 | 340 |
| Sandstone, very fine, light-gray----- | 340 | 345 |
| No recovery----- | 345 | 350 |
| Sandstone, fine, light-brown----- | 350 | 355 |
| Sandstone, fine, light-gray----- | 355 | 360 |
| Sandstone, fine, light-gray----- | 360 | 365 |
| Sandstone, fine, light-gray----- | 365 | 370 |
| Sandstone, fine, light-gray----- | 370 | 375 |
| Sandstone, fine, light-gray; trace coal and carbonaceous material----- | 375 | 380 |
| minor Siltstone, carbonaceous, dark-gray;/gray, very fine sandstone sandstone----- | 380 | 385 |
| Siltstone, gray; minor carbonaceous shale; trace bone----- | 385 | 390 |
| Siltstone, gray; minor carbonaceous shale; trace bone----- | 390 | 395 |
| Sandstone, very fine, light-gray----- | 395 | 400 |
| Sandstone, very fine, light-gray----- | 400 | 405 |
| Sandstone, very fine, light-gray----- | 405 | 410 |
| Sandstone, very fine, light-gray; minor carbonaceous shale-- | 410 | 415 |
| Sandstone, very fine, light-gray----- | 415 | 420 |

Drill-hole W-NH-1-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray----- | 420 | 425 |
| Sandstone, very fine, light-gray----- | 425 | 430 |
| Sandstone, very fine, light-gray----- | 430 | 435 |
| Sandstone, very fine, light-gray----- | 435 | 440 |
| Sandstone, very fine, gray----- | 440 | 445 |
| Sandstone, very fine, gray----- | 445 | 450 |
| Sandstone, fine, gray; minor carbonaceous shale; trace coal----- | 450 | 455 |
| Sandstone, fine, gray; minor carbonaceous shale; trace coal----- | 455 | 460 |
| Siltstone, gray; minor gray shale----- minor | 460 | 465 |
| Shale, silty, gray;/gray siltstone; trace carbonaceous shale----- | 465 | 470 |
| Siltstone, gray; minor gray, very fine sandstone; trace coal----- | 470 | 475 |
| Siltstone, gray----- | 475 | 480 |
| Siltstone, light-gray; trace carbonaceous shale----- | 480 | 485 |
| Siltstone, light-gray; trace carbonaceous shale----- | 485 | 490 |
| Sandstone, very fine, gray; minor carbonaceous shale; gray shale; trace coal----- | 490 | 495 |
| Sandstone, very fine, gray; minor carbonaceous shale----- | 495 | 500 |
| Sandstone, very fine, gray----- | 500 | 505 |
| Sandstone, very fine, gray----- | 505 | 510 |
| Shale, gray; minor carbonaceous shale; gray, very fine sandstone----- | 510 | 515 |

Drill-hole W-NH-1-CD - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; trace gray shale----- | 515 | 520 |
| Siltstone, carbonaceous, dark-gray; minor gray siltstone---- | 520 | 525 |
| Siltstone, gray; minor gray, very fine sandstone----- | 525 | 530 |
| Sandstone, very fine, light-gray----- | 530 | 535 |
| Shale, gray----- | 535 | 540 |
| Shale, brownish-gray----- | 540 | 545 |
| Shale, brownish-gray----- | 545 | 550 |
| Shale, silty, gray----- | 550 | 555 |
| Mudstone, dark-gray; minor carbonaceous gray shale----- | 555 | 560 |
| Mudstone, dark-gray; minor carbonaceous gray shale----- | 560 | 565 |
| Sandstone, very fine, gray; minor gray shale; trace carbonaceous shale----- | 565 | 570 |
| No recovery----- | 570 | 575 |
| Shale, carbonaceous, dark-gray----- | 575 | 580 |
| Sandstone, very fine, gray to light-gray----- | 580 | 585 |
| Sandstone, very fine, gray to light-gray----- | 585 | 590 |
| Sandstone, very fine, gray to light-gray----- | 590 | 595 |
| Sandstone, very fine, gray to light-gray----- | 595 | 600 |
| Sandstone, very fine, gray to light-gray----- | 600 | 605 |
| Sandstone, very fine, gray; minor carbonaceous shale----- | 605 | 610 |
| Sandstone, very fine, gray; minor gray siltstone----- | 610 | 615 |
| Sandstone, very fine, gray----- | 615 | 620 |
| Sandstone, very fine, gray----- | 620 | 625 |
| Sandstone, very fine, gray----- | 625 | 630 |

Drill-hole W-NH-1-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor dark-gray siltstone----- | 630 | 635 |
| Sandstone, very fine, light-gray----- | 635 | 640 |
| Sandstone, very fine, light-gray----- | 640 | 645 |
| Sandstone, very fine, light-gray----- | 645 | 650 |
| Sandstone, very fine, light-gray----- | 650 | 655 |
| Sandstone, very fine, light-gray----- | 655 | 660 |
| Sandstone, very fine, gray; minor gray siltstone----- | 660 | 665 |
| Siltstone, dark-gray; trace coal; trace carbonaceous shale----- | 665 | 670 |
| No recovery----- | 670 | 675 |
| No recovery----- | 675 | 680 |
| No recovery----- | 680 | 685 |
| No recovery----- | 685 | 690 |
| No recovery----- | 690 | 695 |
| Sandstone, very fine, gray----- | 695 | 700 |
| Sandstone, very fine, gray----- | 700 | 705 |
| Sandstone, very fine, gray----- | 705 | 710 |
| Sandstone, very fine, gray----- | 710 | 715 |
| Sandstone, very fine, gray----- | 715 | 720 |
| Sandstone, very fine, gray; minor gray siltstone; trace coal----- | 720 | 725 |
| Sandstone, very fine, gray; minor gray siltstone; trace coal----- | 725 | 730 |

Drill-hole W-NH-1-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor gray siltstone; minor carbonaceous shale----- | 730 | 735 |
| Sandstone, very, very fine, gray; minor gray siltstone----- | 735 | 740 |
| Sandstone, very, very fine, gray; minor gray siltstone----- | 740 | 745 |
| Sandstone, very, very fine, gray; minor gray siltstone----- | 745 | 750 |
| Sandstone, very, very fine, gray; minor gray siltstone----- | 750 | 755 |
| Sandstone, very, very fine, gray; minor gray siltstone----- | 755 | 760 |
| Sandstone, very, very fine, gray; minor gray siltstone----- | 760 | 765 |
| Sandstone, very, very fine, gray; minor gray siltstone----- | 765 | 770 |
| Sandstone, very, very fine, gray; minor gray siltstone----- | 770 | 775 |
| Sandstone, very, very fine, gray; minor gray siltstone----- | 775 | 780 |
| Sandstone, very, very fine, gray; minor gray siltstone----- | 780 | 785 |
| Sandstone, very, very fine, gray; minor gray siltstone----- | 785 | 790 |
| No recovery----- | 790 | 795 |
| No recovery----- | 795 | 800 |
| No recovery----- | 800 | 805 |
| No recovery----- | 805 | 810 |
| Sandstone, very fine, gray; minor gray siltstone; minor gray shale----- | 810 | 815 |
| Sandstone, very fine, gray; minor gray siltstone; minor gray shale----- | 815 | 820 |
| Siltstone, gray; trace coal----- | 820 | 825 |
| Siltstone, carbonaceous, dark-gray to black; minor fine, gray sandstone; trace gray shale----- | 825 | 830 |

Drill-hole W-NH-1-CD - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, carbonaceous, dark-gray to black; minor fine, gray sandstone; trace gray shale----- | 830 | 835 |
| Sandstone, very fine, gray----- | 835 | 840 |
| Sandstone, very fine, gray; minor carbonaceous shale----- | 840 | 845 |
| Sandstone, very fine, gray----- | 845 | 850 |
| Sandstone, very fine, gray; trace coal----- | 850 | 855 |
| Sandstone, very fine, gray----- | 855 | 860 |
| Sandstone, very fine, gray----- | 860 | 865 |
| Siltstone, gray; minor very fine, gray sandstone----- | 865 | 870 |
| Sandstone, very fine, gray----- | 870 | 875 |
| Siltstone, gray; minor very fine, gray sandstone----- | 875 | 880 |
| Sandstone, very fine, gray----- | 880 | 885 |
| Sandstone, very fine, gray----- | 885 | 890 |
| Sandstone, very fine, gray; trace coal----- | 890 | 895 |
| Shale, silty, gray; minor coal; minor carbonaceous shale--- | 895 | 900 |
| Coal; minor carbonaceous shale----- | 900 | 905 |
| Sandstone, very fine, gray----- | 905 | 910 |
| Sandstone, very fine, gray; minor gray siltstone; minor carbonaceous shale----- | 910 | 915 |
| Sandstone, very fine, gray; trace gray shale; trace carbonaceous shale----- | 915 | 920 |
| Sandstone, very fine, gray; trace gray shale; trace carbonaceous shale----- | 920 | 925 |

Drill-hole W-NH-1-CD - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; trace gray shale; trace carbonaceous shale----- | 925 | 930 |
| Sandstone, very fine, gray; trace gray shale; trace carbonaceous shale----- | 930 | 935 |
| Siltstone, gray; minor carbonaceous shale; trace coal----- | 935 | 940 |
| Sandstone, very fine, gray; trace carbonaceous shale----- | 940 | 945 |
| Sandstone, very fine, gray; trace carbonaceous shale----- | 945 | 950 |
| Sandstone, very fine, gray; trace carbonaceous shale----- | 950 | 955 |
| Sandstone, very fine, gray; minor gray shale----- | 955 | 960 |
| Sandstone, very fine, gray----- | 960 | 965 |
| Sandstone, very fine, gray----- | 965 | 970 |
| Sandstone, very fine, gray----- | 970 | 975 |
| Sandstone, very fine, gray----- | 975 | 980 |
| Sandstone, very fine, gray----- | 980 | 985 |
| Coal; minor carbonaceous shale; minor gray, fine sandstone-- | 985 | 990 |
| Sandstone, fine, dark-gray; minor carbonaceous shale; minor coal----- | 990 | 995 |
| Sandstone, very fine, dark gray; trace carbonaceous shale; trace coal----- | 995 | 1,000 |
| Sandstone, very fine, gray; trace coal----- | 1,000 | 1,005 |
| Sandstone, very fine, gray; trace coal----- | 1,005 | 1,010 |
| Sandstone, very fine, gray; minor carbonaceous shale----- | 1,010 | 1,015 |
| Sandstone, very fine, gray; minor carbonaceous shale----- | 1,015 | 1,020 |
| Sandstone, very fine, gray; minor carbonaceous shale----- | 1,020 | 1,025 |

Drill-hole W-NH-1-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-brownish-gray----- | 1,025 | 1,030 |
| Sandstone, very fine, light-brownish-gray----- | 1,030 | 1,035 |
| Sandstone, very fine, light-gray----- | 1,035 | 1,040 |
| Sandstone, very fine, light-gray----- | 1,040 | 1,045 |
| Sandstone, very fine, light-gray----- | 1,045 | 1,050 |
| Sandstone, very fine, light-gray----- | 1,050 | 1,055 |
| Sandstone, very fine, light-gray----- | 1,055 | 1,060 |
| Sandstone, very fine, light-gray----- | 1,060 | 1,065 |
| Shale, silty, gray; trace carbonaceous shale----- | 1,065 | 1,070 |
| Shale, carbonaceous; minor carbonaceous siltstone; minor coal----- | 1,070 | 1,075 |
| Shale, carbonaceous; minor carbonaceous siltstone; minor coal----- | 1,075 | 1,080 |
| Sandstone, very fine, light-gray; minor carbonaceous shale; minor coal----- | 1,080 | 1,085 |
| Coal; minor carbonaceous shale; minor gray, very fine sandstone----- | 1,085 | 1,090 |
| Sandstone, very fine, gray----- | 1,090 | 1,095 |
| Sandstone, very fine, gray----- | 1,095 | 1,100 |
| Coal; minor carbonaceous shale----- | 1,100 | 1,105 |
| Coal; minor carbonaceous shale----- | 1,105 | 1,110 |
| Coal----- | 1,110 | 1,115 |
| Sandstone, very fine, gray----- | 1,115 | 1,120 |
| Coal; minor carbonaceous shale; minor very fine, gray sandstone----- | 1,120 | 1,125 |

Drill-hole W-NH-1-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, brownish-gray----- | 1,125 | 1,130 |
| Sandstone, very fine, light-gray----- | 1,130 | 1,135 |
| Sandstone, very fine, light-gray----- | 1,135 | 1,140 |
| Sandstone, very fine, light-gray----- | 1,140 | 1,145 |
| Sandstone, very fine, light-gray----- | 1,145 | 1,150 |
| Sandstone, very fine, light-gray----- | 1,150 | 1,155 |
| Sandstone, very fine, light-gray----- | 1,155 | 1,160 |
| Sandstone, very fine, light-gray----- | 1,160 | 1,165 |
| Sandstone, very fine, light-gray----- | 1,165 | 1,170 |
| Sandstone, very fine, light-gray----- | 1,170 | 1,175 |
| Sandstone, very fine, light-gray----- | 1,175 | 1,180 |
| Total depth sampled - 1,180 ft. | | |

Drill-hole W-NH-2-CD

NW¼NE¼ sec. 32, T. 18 S., R. 7 E., Salt Lake Principal Meridian, Castledale quadrangle, Emery County, Utah; collar elevation 8,600 ft; begun October 3, 1976, completed October 13, 1976; sampled by L. F. Blanchard, L. V. Roberts, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| No recovery----- | 0 | 5 |
| No recovery----- | 5 | 10 |
| No recovery----- | 10 | 15 |
| No recovery----- | 15 | 20 |
| Sandstone, very fine, tan----- | 20 | 25 |
| Sandstone, very fine, tan----- | 25 | 30 |
| Sandstone, very fine, tan----- | 30 | 35 |
| Sandstone, very fine, light-yellow----- | 35 | 40 |
| Shale, silty, light-gray----- | 40 | 45 |
| Siltstone, light-gray----- | 45 | 50 |
| Siltstone, light-gray----- | 50 | 55 |
| Siltstone, light-gray----- | 55 | 60 |
| Sandstone, very fine, light-gray----- | 60 | 65 |
| Siltstone, light-gray----- | 65 | 70 |
| Sandstone, very fine, light-gray----- | 70 | 75 |
| Sandstone, very fine, light-gray----- | 75 | 80 |
| Sandstone, very fine, light-gray----- | 80 | 85 |
| Sandstone, medium, light-gray----- | 85 | 90 |
| Sandstone, medium, light-gray----- | 90 | 95 |
| Sandstone, medium, light-gray----- | 95 | 100 |

Drill-hole W-NH-2-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|------------------------------------|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, medium, light-gray----- | 100 | 105 |
| Sandstone, medium, gray----- | 105 | 110 |
| Sandstone, fine, gray----- | 110 | 115 |
| Sandstone, fine, gray----- | 115 | 120 |
| Sandstone, fine, gray----- | 120 | 125 |
| Sandstone, fine, gray----- | 125 | 130 |
| Sandstone, fine, gray----- | 130 | 135 |
| Sandstone, fine, gray----- | 135 | 140 |
| Sandstone, fine, gray----- | 140 | 145 |
| Sandstone, fine, gray----- | 145 | 150 |
| Sandstone, fine, gray----- | 150 | 155 |
| Sandstone, fine, gray----- | 155 | 160 |
| Sandstone, fine, gray----- | 160 | 165 |
| Sandstone, medium, gray----- | 165 | 170 |
| Sandstone, fine, light-gray----- | 170 | 175 |
| Sandstone, fine, gray----- | 175 | 180 |
| Sandstone, fine, gray----- | 180 | 185 |
| Sandstone, fine, gray----- | 185 | 190 |
| Sandstone, medium, gray----- | 190 | 195 |
| Sandstone, medium, gray----- | 195 | 200 |
| Sandstone, medium, gray----- | 200 | 205 |
| Sandstone, medium, gray----- | 205 | 210 |
| Sandstone, medium, gray----- | 210 | 215 |

Drill-hole W-NH-2-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|-------------------------------|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, medium, gray----- | 215 | 220 |
| Sandstone, medium, gray----- | 220 | 225 |
| Sandstone, fine, gray----- | 225 | 230 |
| Sandstone, fine, gray----- | 230 | 235 |
| Sandstone, fine, gray----- | 235 | 240 |
| Sandstone, fine, gray----- | 240 | 245 |
| Sandstone, fine, gray----- | 245 | 250 |
| Sandstone, fine, gray----- | 250 | 255 |
| Sandstone, fine, gray----- | 255 | 260 |
| Sandstone, fine, gray----- | 260 | 265 |
| Sandstone, fine, gray----- | 265 | 270 |
| Sandstone, fine, gray----- | 270 | 275 |
| Sandstone, fine, gray----- | 275 | 280 |
| Sandstone, fine, gray----- | 280 | 285 |
| Sandstone, fine, gray----- | 285 | 290 |
| Sandstone, fine, gray----- | 290 | 295 |
| Sandstone, fine, gray----- | 295 | 300 |
| Sandstone, fine, gray----- | 300 | 305 |
| Sandstone, fine, gray----- | 305 | 310 |
| Sandstone, fine, gray----- | 310 | 315 |
| Sandstone, fine, gray----- | 315 | 320 |
| Sandstone, fine, gray----- | 320 | 325 |
| Sandstone, fine, gray----- | 325 | 330 |
| Sandstone, fine, gray----- | 330 | 335 |

Drill-hole W-NH-2-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray----- | 335 | 340 |
| Sandstone, fine, gray----- | 340 | 345 |
| Sandstone, fine, gray----- | 345 | 350 |
| Sandstone, fine, gray----- | 350 | 355 |
| Sandstone, fine, gray----- | 355 | 360 |
| Sandstone, fine, gray----- | 360 | 365 |
| Sandstone, fine, gray----- | 365 | 370 |
| Sandstone, fine, gray----- | 370 | 375 |
| Sandstone, fine, gray----- | 375 | 380 |
| Sandstone, fine, gray----- | 380 | 385 |
| Sandstone, fine, gray----- | 385 | 390 |
| Sandstone, fine, light-gray; minor gray shale; minor gray, carbonaceous siltstone; trace coal----- | 390 | 395 |
| Sandstone, fine, light-gray; minor gray shale; minor gray, carbonaceous siltstone; trace coal----- | 395 | 400 |
| Sandstone, fine, light-gray; minor gray shale; minor gray, carbonaceous siltstone; trace coal----- | 400 | 405 |
| Sandstone, fine, light-gray; minor gray shale; minor gray, carbonaceous siltstone; trace coal----- | 405 | 410 |
| Sandstone, fine, light-gray; minor gray shale; minor gray, carbonaceous siltstone; trace coal----- | 410 | 415 |
| Sandstone, fine, light-gray; minor gray shale; minor gray, carbonaceous siltstone; trace coal----- | 415 | 420 |
| Sandstone, very fine, light-gray; minor gray shale; trace coal; trace carbonaceous shale----- | 420 | 425 |

Drill-hole W-NH-2-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| No recovery----- | 425 | 430 |
| No recovery----- | 430 | 435 |
| No recovery----- | 435 | 440 |
| No recovery----- | 440 | 445 |
| No recovery----- | 445 | 450 |
| No recovery----- | 450 | 455 |
| No recovery----- | 455 | 460 |
| No recovery----- | 460 | 465 |
| No recovery----- | 465 | 470 |
| No recovery----- | 470 | 475 |
| No recovery----- | 475 | 480 |
| No recovery----- | 480 | 485 |
| Shale, dark-gray; minor light-gray, fine sandstone----- | 485 | 490 |
| Siltstone, gray----- | 490 | 495 |
| Siltstone, gray----- | 495 | 500 |
| Siltstone, gray----- | 500 | 505 |
| Siltstone, gray----- | 505 | 510 |
| Siltstone, gray----- | 510 | 515 |
| Siltstone, gray----- | 515 | 520 |
| Siltstone, gray----- | 520 | 525 |
| Siltstone, gray----- | 525 | 530 |
| Sandstone, very fine, light-gray; minor dark-gray shale; minor light-gray shale----- | 530 | 535 |

Drill-hole W-NH-2-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, dark-gray; minor light-gray shale; gray siltstone; minor carbonaceous shale----- | 535 | 540 |
| Shale, dark-gray; minor light-gray shale; gray siltstone; minor carbonaceous shale----- | 540 | 545 |
| Shale, dark-gray; minor light-gray shale; gray siltstone; minor carbonaceous shale----- | 545 | 550 |
| Shale, dark-gray; minor light-gray shale; gray siltstone; minor carbonaceous shale----- | 550 | 555 |
| Shale, dark-gray; minor light-gray shale; gray siltstone; minor carbonaceous shale----- | 555 | 560 |
| Shale, dark-gray; minor light-gray shale; gray siltstone; minor carbonaceous shale----- | 560 | 565 |
| Shale, dark-gray; minor light-gray shale; gray siltstone; minor carbonaceous shale----- | 565 | 570 |
| Sandstone, fine, gray; plus mixture of above lithologies----- | 570 | 575 |
| Shale, dark-gray; minor light-gray shale; minor gray-green shale; minor carbonaceous shale; minor gray siltstone; trace gray, very fine sandstone----- | 575 | 580 |
| Shale, dark-gray; minor light-gray shale; minor gray-green shale; minor carbonaceous shale; minor gray siltstone; trace gray, very fine sandstone----- | 580 | 585 |
| Shale, dark-gray, minor light-gray shale; minor gray-green shale; minor carbonaceous shale; minor gray siltstone; trace gray, very fine sandstone----- | 585 | 590 |

Drill-hole W-NH-2-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, dark-gray, minor light-gray shale; minor gray-green shale; minor carbonaceous shale; minor gray siltstone; trace gray, very fine sandstone----- | 590 | 595 |
| Shale, dark-gray, minor light-gray shale; minor gray-green shale; minor carbonaceous shale; minor gray siltstone; trace gray, very fine sandstone----- | 595 | 600 |
| Shale, dark-gray, minor light-gray shale; minor gray-green shale; minor carbonaceous shale; minor gray siltstone; trace gray, very fine sandstone----- | 600 | 605 |
| Shale, dark-gray, minor light-gray shale; minor gray-green shale; minor carbonaceous shale; minor gray siltstone; trace gray, very fine sandstone----- | 605 | 610 |
| Shale, dark-gray, minor light-gray shale; minor gray-green shale; minor carbonaceous shale; minor gray siltstone; trace gray, very fine sandstone----- | 610 | 615 |
| Shale, dark-gray, minor light-gray shale; minor gray-green shale; minor carbonaceous shale; minor gray siltstone; trace gray, very fine sandstone----- | 615 | 620 |
| Shale, dark-gray, minor light-gray shale; minor gray-green shale; minor carbonaceous shale; minor gray siltstone; trace gray, very fine sandstone----- | 620 | 625 |
| Sandstone, fine, gray----- | 625 | 630 |
| Shale, dark-gray; minor light-gray shale; minor carbonaceous shale; trace gray, fine sandstone----- | 630 | 635 |

Drill-hole W-NH-2-CD - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; trace black, carbonaceous shale---- | 635 | 640 |
| Sandstone, very fine, gray; minor gray shale----- | 640 | 645 |
| Sandstone, very fine, gray; minor gray shale----- | 645 | 650 |
| Sandstone, very fine, gray; minor gray shale----- | 650 | 655 |
| Sandstone, very fine, gray; minor gray shale----- | 655 | 660 |
| Sandstone, very fine, gray; minor gray shale----- | 660 | 665 |
| Sandstone, very fine, gray, minor gray shale----- | 665 | 670 |
| Sandstone, very fine, gray; minor gray siltstone; trace black carbonaceous shale----- | 670 | 675 |
| Sandstone, very fine, gray; minor gray siltstone; minor carbonaceous shale----- | 675 | 680 |
| Sandstone, very fine gray; minor gray siltstone; minor carbonaceous shale----- | 680 | 685 |
| Sandstone, very fine, gray; minor gray siltstone; minor carbonaceous shale----- | 685 | 690 |
| Sandstone, fine, gray; trace coal----- | 690 | 695 |
| Shale, gray; minor gray, very fine sandstone----- | 695 | 700 |
| Shale, gray; minor carbonaceous shale; minor gray siltstone--- | 700 | 705 |
| Sandstone, very fine, gray; minor carbonaceous shale; minor gray shale----- | 705 | 710 |
| Sandstone, fine, gray; minor black, carbonaceous shale----- | 710 | 715 |
| Sandstone, very fine, gray; trace coal----- | 715 | 720 |
| Sandstone, very fine, gray; trace coal----- | 720 | 725 |

Drill-hole W-NH-2-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor gray, very fine sandstone----- | 725 | 730 |
| Siltstone, gray; trace coal----- | 730 | 735 |
| Siltstone, gray; trace coal----- | 735 | 740 |
| Shale, gray; minor carbonaceous shale; trace coal----- | 740 | 745 |
| Shale, gray; minor bentonitic shale; minor carbonaceous shale----- | 745 | 750 |
| Shale, gray, bentonitic----- | 750 | 755 |
| Siltstone, gray; minor gray shale----- | 755 | 760 |
| Siltstone, gray; minor yellow, medium sandstone----- | 760 | 765 |
| Siltstone, gray; minor yellow, medium sandstone----- | 765 | 770 |
| Siltstone, gray----- | 770 | 775 |
| Siltstone, gray----- | 775 | 780 |
| Sandstone, very fine, gray; minor dark-gray shale; minor carbonaceous shale----- | 780 | 785 |
| Sandstone, very fine, gray; minor dark-gray shale; minor carbonaceous shale----- | 785 | 790 |
| Sandstone, very fine, gray; minor dark-gray shale; minor carbonaceous shale----- | 790 | 795 |
| Shale, dark-gray; minor carbonaceous shale----- | 795 | 800 |
| Sandstone, fine, gray; minor dark-gray shale----- | 800 | 805 |
| Shale, dark-gray; minor gray shale; minor gray-green shale---- | 805 | 810 |
| Shale, dark-gray; minor gray shale; minor gray-green shale---- | 810 | 815 |
| Shale, dark-gray; minor gray shale; minor gray-green shale---- | 815 | 820 |

Drill-hole W-NH-2-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine to fine, gray; minor gray, bentonitic, carbonaceous shale----- | 820 | 825 |
| Sandstone, very fine to fine, gray; minor gray, bentonitic, carbonaceous shale----- | 825 | 830 |
| Sandstone, very fine to fine, gray; minor gray; bentonitic, carbonaceous shale----- | 830 | 835 |
| Sandstone, very fine to fine, gray; minor gray, bentonitic, carbonaceous shale----- | 835 | 840 |
| Sandstone, very fine to fine, gray; minor gray, bentonitic, carbonaceous shale; trace coal----- | 840 | 845 |
| Sandstone, very fine to fine, gray; minor gray, bentonitic, carbonaceous shale; trace coal----- | 845 | 850 |
| Sandstone, very fine to fine, gray; minor gray, bentonitic, carbonaceous shale; trace coal----- | 850 | 855 |
| Sandstone, very fine to fine, gray; minor gray, bentonitic, carbonaceous shale; trace coal----- | 855 | 860 |
| Sandstone, fine, gray; minor gray to dark-gray shale; minor gray siltstone----- | 860 | 865 |
| Sandstone, fine, gray; minor gray to dark-gray shale; minor gray siltstone----- | 865 | 870 |
| Sandstone, fine, gray; minor gray to dark-gray shale; minor gray siltstone----- | 870 | 875 |
| Sandstone, fine, gray; minor gray to dark-gray shale; minor gray siltstone----- | 875 | 880 |

Drill-hole W-NH-2-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray; minor gray to dark-gray shale; minor gray siltstone----- | 880 | 885 |
| Sandstone, fine, gray; minor gray to dark-gray shale; minor gray siltstone----- | 885 | 890 |
| Sandstone, fine, gray----- | 890 | 895 |
| Sandstone, fine, gray----- | 895 | 900 |
| Sandstone, fine, gray; minor gray shale; minor dark-gray shale----- | 900 | 905 |
| Sandstone, fine, gray; minor gray shale; minor dark-gray shale----- | 905 | 910 |
| Sandstone, fine, gray; minor gray shale; minor dark-gray shale----- | 910 | 915 |
| Sandstone, fine, gray; minor gray shale; minor dark-gray shale----- | 915 | 920 |
| Siltstone, gray; minor gray shale----- | 920 | 925 |
| Siltstone, gray, minor gray shale; trace black, carbonaceous shale----- | 925 | 930 |
| Siltstone, gray, minor gray shale; trace black, carbonaceous shale----- | 930 | 935 |
| Siltstone, gray, minor gray shale; trace black, carbonaceous shale----- | 935 | 940 |
| Siltstone, gray, minor gray shale; trace black, carbonaceous shale----- | 940 | 945 |

Drill-hole W-NH-2-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine to silty, light-gray; minor dark-gray slightly carbonaceous shale; trace coal----- | 945 | 950 |
| Siltstone, gray; minor dark-gray shale; minor carbonaceous shale----- | 950 | 955 |
| Siltstone, gray; minor dark-gray shale; minor carbonaceous shale----- | 955 | 960 |
| Siltstone, gray; minor dark-gray shale; minor carbonaceous shale----- | 960 | 965 |
| Total depth sampled - 965 ft | | |

Drill-hole W-NH-2A-CD (redrill of NH-2)

| | | |
|---|-----|-------|
| Shale, carbonaceous, dark-gray; minor gray shale; light-gray, very fine sandstone; trace coal----- | 965 | 970 |
| Shale, bentonitic, gray; minor coal; light-gray, very fine sandstone----- | 970 | 975 |
| Shale, bentonitic, gray; minor coal; light-gray, very fine sandstone----- | 975 | 980 |
| Shale, bentonitic, gray; minor coal; light-gray, very fine sandstone----- | 980 | 985 |
| Shale, bentonitic, gray; minor coal; light-gray, very fine sandstone----- | 985 | 990 |
| Shale, bentonitic, gray; minor light-gray-white sandstone; trace coal----- | 990 | 995 |
| Shale, bentonitic, gray; minor light-gray-white sandstone; trace coal----- | 995 | 1,000 |

Drill-hole W-NH-2A-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, bentonitic, gray; minor light-gray-white sandstone; trace coal----- | 1,000 | 1,005 |
| Sandstone, very fine, light-gray; minor gray shale; trace coal----- | 1,005 | 1,010 |
| Sandstone, very fine, light-gray; minor gray shale; trace coal----- | 1,010 | 1,015 |
| No recovery----- | 1,015 | 1,020 |
| No recovery----- | 1,020 | 1,025 |
| Total depth sampled - 1,025 ft | | |

Drill-hole W-NH-3-CD

NW¼NW¼ sec. 28, T. 18 S., R. 7 E., Salt Lake Principal Meridian, Castledale quadrangle, Emery County, Utah; collar elevation 8,625 ft; begun October 7, 1976, completed October 11, 1976; sampled by L. F. Blanchard, J. V. Roberts, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Soil; minor brown, fine to medium sandstone----- | 0 | 5 |
| Sandstone, very fine to fine, tan----- | 5 | 10 |
| Sandstone, very fine to fine, tan; trace white shale; gray shale----- | 10 | 15 |
| Sandstone, very fine to fine, tan; trace white shale; gray shale----- | 15 | 20 |
| Sandstone, very fine to fine, tan; trace white shale; gray shale----- | 20 | 25 |
| Sandstone, very fine to fine; tan; trace white shale; gray shale----- | 25 | 30 |
| Sandstone, very fine to fine; gray; trace gray siltstone---- | 30 | 35 |
| Sandstone, fine to very fine, white----- | 35 | 40 |
| Sandstone, fine to very fine, white----- | 40 | 45 |
| Sandstone, fine to very fine, white----- | 45 | 50 |
| Siltstone, light-gray----- | 50 | 55 |
| Siltstone, light-gray----- | 55 | 60 |
| Siltstone, carbonaceous, gray; trace light-gray very fine sandstone----- | 60 | 65 |

Drill-hole W-NH-3-CD - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, carbonaceous, gray; trace light-gray very fine sandstone----- | 65 | 70 |
| Sandstone, fine to very fine, light-gray; trace coal----- | 70 | 75 |
| Sandstone, fine to very fine, light-gray; trace coal----- | 75 | 80 |
| Sandstone, fine to very fine, light-gray; trace coal----- | 80 | 85 |
| Sandstone, fine to very fine, light-gray; trace coal----- | 85 | 90 |
| Sandstone, fine to medium, light-gray; trace coal----- | 90 | 95 |
| Sandstone, fine to medium, light-gray; trace coal----- | 95 | 100 |
| Sandstone, fine to medium, light-gray; trace coal----- | 100 | 105 |
| Sandstone, fine to medium, light-gray; trace coal----- | 105 | 110 |
| Sandstone, fine to medium, light-gray; trace coal----- | 110 | 115 |
| Sandstone, fine to medium, light-gray; trace coal----- | 115 | 120 |
| Sandstone, fine to medium, light-gray; trace coal----- | 120 | 125 |
| Sandstone, fine to medium, light-gray; trace coal----- | 125 | 130 |
| Sandstone, fine to medium, light-gray; trace coal; trace white shale----- | 130 | 135 |
| Sandstone, fine to medium, light-gray; trace coal; trace white shale; trace tan-yellow siltstone----- | 135 | 140 |
| Sandstone, fine to medium, light-gray; trace carbonaceous shale; white shale; tan-yellow siltstone----- | 140 | 145 |
| Sandstone, fine to medium, light-gray; trace dark-gray carbonaceous siltstone; olive-gray sandy siltstone; white sandy siltstone----- | 145 | 150 |

Drill-hole W-NH-3-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine to medium, light-gray; trace coal----- | 150 | 155 |
| Sandstone, fine to medium, light-gray; trace gray shale----- | 155 | 160 |
| Sandstone, fine to very fine, gray; minor dark-gray carbon- aceous siltstone; light-gray sandy siltstone; trace tan- yellow medium sandstone----- | 160 | 165 |
| Sandstone, fine, gray; minor gray shale; carbonaceous shale; trace coal----- | 165 | 170 |
| Sandstone, fine, gray; minor gray shale; carbonaceous shale; trace coal----- | 170 | 175 |
| Sandstone, fine, gray; minor gray shale; carbonaceous shale; trace coal----- | 175 | 180 |
| Sandstone, minor dark-gray carbonaceous siltstone; trace chert----- | 180 | 185 |
| Sandstone, minor dark-gray carbonaceous siltstone; trace chert----- | 185 | 190 |
| Sandstone, minor dark-gray carbonaceous siltstone; trace chert----- | 190 | 195 |
| Sandstone, minor dark-gray carbonaceous siltstone; trace chert----- | 195 | 200 |
| Sandstone, minor dark-gray carbonaceous siltstone; trace chert----- | 200 | 205 |
| Sandstone, very fine, light-gray; minor gray shale; trace dark-gray carbonaceous siltstone; white shale; chert----- | 205 | 210 |

Drill-hole W-NH-3-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor gray shale; trace dark-gray carbonaceous siltstone; white shale; chert----- | 210 | 215 |
| Siltstone, carbonaceous, dark-gray; minor light-gray, fine to very fine sandstone; trace coal; chert----- | 215 | 220 |
| Siltstone, carbonaceous, dark-gray; minor light-gray fine to very fine sandstone; trace coal; chert; minor gray shale--- | 220 | 225 |
| Siltstone, carbonaceous, dark-gray; minor light-gray fine to very fine sandstone; trace coal; chert; minor gray shale--- | 225 | 230 |
| Siltstone, carbonaceous, dark-gray; minor light-gray fine to very fine sandstone; trace coal; chert; minor gray shale--- | 230 | 235 |
| Sandstone, very fine, light-gray; trace dark-gray carbonaceous siltstone----- | 235 | 240 |
| Sandstone, very fine, light-gray; trace dark-gray carbonaceous siltstone----- | 240 | 245 |
| Sandstone, very fine, light-gray; trace dark-gray carbonaceous siltstone----- | 245 | 250 |
| Siltstone, carbonaceous, dark-gray; minor gray shale; light-gray fine sandstone; trace coal----- | 250 | 255 |
| Siltstone, carbonaceous, dark-gray; minor gray shale; light-gray fine sandstone; trace coal----- | 255 | 260 |
| Shale, carbonaceous; minor gray shale----- | 260 | 265 |
| Shale, carbonaceous; minor gray shale----- | 265 | 270 |

Drill-hole W-NH-3-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, carbonaceous; minor gray shale----- | 270 | 275 |
| Shale, carbonaceous; minor gray shale; trace coal----- | 275 | 280 |
| Shale, carbonaceous; minor gray shale; trace coal----- | 280 | 285 |
| Sandstone, fine, light-gray; minor carbonaceous shale; trace coal----- | 285 | 290 |
| Sandstone, fine, light-gray; minor carbonaceous shale; trace coal; minor dark-gray carbonaceous siltstone; gray shale----- | 290 | 295 |
| Sandstone, fine, light-gray; minor carbonaceous shale; trace coal; minor dark-gray carbonaceous siltstone; gray shale----- | 295 | 300 |
| Sandstone, fine, light-gray; minor carbonaceous shale; trace coal; minor dark-gray carbonaceous siltstone; gray shale----- | 300 | 305 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous siltstone; trace coal----- | 305 | 310 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous siltstone; trace coal----- | 310 | 315 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous siltstone; trace coal----- | 315 | 320 |
| Siltstone, gray; minor carbonaceous shale; trace gray fine sandstone----- | 320 | 325 |
| Siltstone, gray; minor carbonaceous shale; trace gray fine sandstone----- | 325 | 330 |

Drill-hole W-NH-3-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; minor carbonaceous shale; trace gray fine sandstone----- | 330 | 335 |
| Siltstone, gray; minor carbonaceous shale; trace gray fine sandstone; trace white shale----- | 335 | 340 |
| Shale, silty, gray; minor carbonaceous shale; trace gray fine sandstone----- | 340 | 345 |
| Siltstone, slightly carbonaceous, dark-gray----- | 345 | 350 |
| Siltstone, gray----- | 350 | 355 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone----- | 355 | 360 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone----- | 360 | 365 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; trace coal----- | 365 | 370 |
| Sandstone, fine to medium, gray; minor dark-gray fine sandstone; trace carbonaceous shale----- | 370 | 375 |
| Sandstone, fine to medium, gray; minor dark-gray fine sandstone; trace carbonaceous shale; minor dark-gray carbonaceous siltstone; trace light-gray shale----- | 375 | 380 |
| Sandstone, fine to medium, gray; minor dark-gray fine sandstone; trace carbonaceous shale; minor dark-gray carbonaceous siltstone; trace light-gray shale----- | 380 | 385 |
| Sandstone, fine to medium, gray; minor dark-gray fine sandstone; trace carbonaceous shale; minor dark-gray carbonaceous siltstone; trace light-gray shale----- | 385 | 390 |
| Sandstone, medium, gray; trace dark-gray carbonaceous siltstone----- | 390 | 395 |

Drill-hole W-NH-3-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| No recovery----- | 395 | 400 |
| Sandstone, very fine, gray; trace coal----- | 400 | 405 |
| Sandstone, very fine, gray; trace coal----- | 405 | 410 |
| Sandstone, fine to very fine, light-gray; minor carbonaceous shale; gray shale; trace coal----- | 410 | 415 |
| Sandstone, fine to very fine, light-gray; minor carbonaceous shale; gray shale; trace coal----- | 415 | 420 |
| Siltstone, carbonaceous, black; minor gray very fine sand- stone; gray shale----- | 420 | 425 |
| Siltstone, carbonaceous, black; minor gray very fine sand- stone; gray shale----- | 425 | 430 |
| Siltstone, carbonaceous, black; minor gray very fine sand- stone; gray shale----- | 430 | 435 |
| Shale, dark-gray; trace light-gray very fine sandstone; carbonaceous shale----- | 435 | 440 |
| Sandstone, very fine, light-gray; minor dark-gray shale; trace yellow-orange medium sandstone----- | 440 | 445 |
| Sandstone, very fine, light-gray; minor dark-gray shale; trace yellow-orange medium sandstone----- | 445 | 450 |
| Sandstone, very fine, light-gray; minor dark-gray shale; trace yellow-orange medium sandstone; minor carbonaceous siltstone----- | 450 | 455 |
| Sandstone, very fine, light-gray; minor dark-gray shale; trace yellow-orange medium sandstone; minor carbonaceous siltstone----- | 455 | 460 |

Drill-hole W-NH-3-CD - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor gray shale; black carbonaceous siltstone; trace white shale----- | 460 | 465 |
| Sandstone, very fine, light-gray; minor gray shale; black carbonaceous siltstone; trace white shale----- | 465 | 470 |
| Sandstone, very fine, light-gray; minor gray shale; black carbonaceous siltstone; trace white shale----- | 470 | 475 |
| Sandstone, very fine, light-gray; minor gray shale; black carbonaceous siltstone; trace white shale----- | 475 | 480 |
| Sandstone, very fine, light-gray; minor gray shale; black carbonaceous siltstone; trace white shale----- | 480 | 485 |
| Sandstone, very fine, light-gray; minor gray shale; black carbonaceous siltstone; trace white shale; trace coal----- | 485 | 490 |
| Siltstone, carbonaceous, black; minor light-gray very fine sandstone----- | 490 | 495 |
| Sandstone, very fine, light-gray; minor black carbonaceous siltstone; gray shale; trace coal----- | 495 | 500 |
| Sandstone, very fine, light-gray; minor black carbonaceous siltstone; gray shale; trace coal----- | 500 | 505 |
| Sandstone, very fine, light-gray; minor black carbonaceous siltstone; gray shale; trace coal; minor coal----- | 505 | 510 |
| Sandstone, very fine, light-gray; minor black carbonaceous siltstone; gray shale; trace coal; minor coal----- | 510 | 515 |
| Sandstone, very fine, light-gray; minor dark-gray shale; carbonaceous shale; trace coal; chert----- | 515 | 520 |

Drill-hole W-NH-3-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor dark-gray shale; carbonaceous shale; trace coal; chert----- | 520 | 525 |
| Sandstone, very fine, light-gray; minor dark-gray shale; carbonaceous shale; trace coal; chert----- | 525 | 530 |
| Sandstone, very fine, light-gray; minor dark-gray shale; carbonaceous shale; trace coal; chert----- | 530 | 535 |
| Sandstone, very fine, light-gray; minor dark-gray shale; carbonaceous shale----- | 535 | 540 |
| Sandstone, very fine, light-gray; minor dark-gray shale; carbonaceous shale; trace coal----- | 540 | 545 |
| Sandstone, very fine, light-gray; minor dark-gray shale; carbonaceous shale; trace coal----- | 545 | 550 |
| Sandstone, very fine, light-gray; minor black carbonaceous siltstone; trace coal----- | 550 | 555 |
| Sandstone, very fine, light-gray; minor black carbonaceous siltstone; trace coal----- | 555 | 560 |
| Sandstone, very fine, light-gray; minor black carbonaceous siltstone; trace coal----- | 560 | 565 |
| Sandstone, very fine, light-gray; minor black carbonaceous siltstone; trace coal; minor gray shale----- | 565 | 570 |
| Shale, carbonaceous, dark-gray; minor gray very fine sandstone----- | 570 | 575 |

Drill-hole W-NH-3-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, carbonaceous, dark-gray; minor gray very fine sandstone; trace yellow medium sandstone----- | 575 | 580 |
| Shale, gray; minor gray very fine sandstone; trace coal; yellow medium sandstone----- | 580 | 585 |
| Shale, gray, minor gray very fine sandstone; trace coal; yellow medium sandstone----- | 585 | 590 |
| Sandstone, very fine, gray; minor gray shale; coal; trace white shale----- | 590 | 595 |
| Sandstone, very fine, gray; minor gray shale; coal; trace white shale----- | 595 | 600 |
| No recovery----- | 600 | 605 |
| No recovery; minor dark-gray shale; trace white shale; yellow-orange medium sandstone----- | 605 | 610 |
| Shale, gray; minor gray very fine sandstone; trace carbonaceous siltstone----- | 610 | 615 |
| Shale, gray; minor gray very fine sandstone; trace carbonaceous siltstone; trace coal----- | 615 | 620 |
| Shale, gray; minor gray very fine sandstone; trace carbonaceous siltstone; trace coal----- | 620 | 625 |
| Shale, gray; minor gray very fine sandstone; trace carbonaceous siltstone; trace coal; minor dark-gray shale----- | 625 | 630 |
| Shale, carbonaceous, dark-gray; minor gray shale; gray very fine sandstone----- | 630 | 635 |

Drill-hole W-NH-3-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, carbonaceous, dark-gray; minor gray shale; gray very fine sandstone; trace coal; chert----- | 635 | 640 |
| Shale, carbonaceous, dark-gray; minor gray shale; gray very fine sandstone; trace coal; chert----- | 640 | 645 |
| Shale, carbonaceous, dark-gray; minor gray shale; gray very fine sandstone; trace coal; chert----- | 645 | 650 |
| Sandstone, very fine, light-gray; minor yellow medium sandstone; gray shale----- | 650 | 655 |
| Shale, dark-gray; minor light-gray very fine sandstone----- | 655 | 660 |
| Shale, dark-gray; minor light-gray very fine sandstone----- | 660 | 665 |
| Shale, dark-gray; minor light-gray very fine sandstone----- | 665 | 670 |
| Shale, dark-gray; minor light-gray very fine sandstone; trace coal----- | 670 | 675 |
| Shale, dark-gray, minor light-gray very fine sandstone; trace coal----- | 675 | 680 |
| Siltstone, carbonaceous, dark-gray; minor gray shale----- | 680 | 685 |
| Siltstone, carbonaceous, dark-gray; minor gray shale----- | 685 | 690 |
| No recovery----- | 690 | 695 |
| Shale, gray; minor gray siltstone----- | 695 | 700 |
| Shale, gray; minor gray siltstone; trace coal; carbonaceous shale----- | 700 | 705 |
| Shale, gray; minor gray siltstone; trace coal; carbonaceous shale----- | 705 | 710 |
| Shale, gray; minor gray siltstone; trace carbonaceous shale-- | 710 | 715 |

Drill-hole W-NH-3-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor gray siltstone; trace carbonaceous shale-- | 715 | 720 |
| Shale, gray; minor gray siltstone; trace carbonaceous shale; minor light-gray siltstone----- | 720 | 725 |
| Shale, gray; minor gray siltstone; trace carbonaceous shale; minor light-gray siltstone----- | 725 | 730 |
| Shale, gray; minor gray siltstone; trace carbonaceous shale; minor light-gray siltstone----- | 730 | 735 |
| Siltstone, gray; minor black carbonaceous shale; trace gray shale; coal----- | 735 | 740 |
| Siltstone, gray; minor black carbonaceous shale; trace gray shale; coal; minor light-gray bentonitic shale----- | 740 | 745 |
| Siltstone, gray; minor black carbonaceous shale; trace gray shale; coal; minor light-gray bentonitic shale----- | 745 | 750 |
| Siltstone, gray; minor black carbonaceous shale; trace gray shale; coal; minor light-gray bentonitic shale----- | 750 | 755 |
| Siltstone, dark-gray; minor carbonaceous shale; trace light- gray bentonitic shale; light-gray siltstone----- | 755 | 760 |
| Siltstone, dark-gray; minor carbonaceous shale; trace light- gray bentonitic shale; light-gray siltstone; minor coal---- | 760 | 765 |
| Siltstone, dark-gray; minor carbonaceous shale; trace light- gray bentonitic shale; light-gray siltstone; minor coal---- | 765 | 770 |
| Siltstone, dark-gray; minor light-gray very fine sandstone; carbonaceous shale----- | 770 | 775 |
| Siltstone, dark-gray; minor light-gray very fine sandstone; carbonaceous shale----- | 775 | 780 |

Drill-hole W-NH-3-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, dark-gray; minor light-gray very fine sandstone; carbonaceous shale----- | 780 | 785 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone; trace carbonaceous shale; coal;----- | 785 | 790 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone; trace carbonaceous shale; coal----- | 790 | 795 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone; trace carbonaceous shale; coal----- | 795 | 800 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone; trace carbonaceous shale; coal----- | 800 | 805 |
| Shale, bentonitic, light shale; trace light-gray siltstone; light-gray very fine sandstone; white shale----- | 805 | 810 |
| Shale, bentonitic, light shale; trace light-gray siltstone; light-gray very fine sandstone; white shale----- | 810 | 815 |
| Sandstone, very fine, light-gray; minor gray shale; black carbonaceous shale; coal----- | 815 | 820 |
| Sandstone, very fine, light-gray; minor gray shale; black carbonaceous shale; coal; minor orange-red medium sandstone----- | 820 | 825 |
| Sandstone, very fine, light-gray; minor gray shale; black carbonaceous shale; coal; minor orange-red medium sandstone; minor white shale; dark-gray siltstone----- | 825 | 830 |
| Sandstone, very fine, light-gray; minor gray shale; black carbonaceous shale; coal; minor orange-red medium sandstone; minor white shale; dark-gray siltstone----- | 830 | 835 |

Drill-hole W-NH-3-CD - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor gray shale; black carbonaceous shale; trace white shale; orange medium sandstone; coal----- | 835 | 840 |
| Sandstone, very fine, light-gray; minor gray shale; black carbonaceous shale; trace white shale; orange medium sandstone; coal----- | 840 | 845 |
| Coal; minor carbonaceous shale; gray shale; light-gray very fine sandstone; orange-red medium sandstone----- | 845 | 850 |
| Coal; minor carbonaceous shale; gray shale; light-gray very fine sandstone; orange-red medium sandstone; trace white shale----- | 850 | 855 |
| Sandstone, very fine, light-gray; minor dark-gray carbonaceous siltstone; orange-red medium sandstone; gray shale; trace white shale; coal----- | 855 | 860 |
| Shale, gray; minor light-gray very fine sandstone; black carbonaceous shale; trace coal----- | 860 | 865 |
| Shale, gray; minor light-gray very fine sandstone; black carbonaceous shale; trace coal----- | 865 | 870 |
| Sandstone, very fine, light-gray; minor gray shale; carbonaceous shale; trace white shale; coal----- | 870 | 875 |
| Coal; minor light-gray very fine sandstone; trace gray shale; carbonaceous shale; white shale; tan medium sandstone----- | 875 | 880 |

Drill-hole W-NH-3-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, slightly carbonaceous; very fine, light-gray; minor black carbonaceous shale; gray shale; coal; trace white shale; yellow medium sandstone----- | 880 | 885 |
| Sandstone, slightly carbonaceous; very fine, light-gray; minor black carbonaceous shale; gray shale; coal; trace white shale; yellow medium sandstone----- | 885 | 890 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous siltstone; gray shale; coal----- | 890 | 895 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous siltstone; gray shale; coal----- | 895 | 900 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous siltstone; gray shale; coal----- | 900 | 905 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous siltstone; gray shale; coal----- | 905 | 910 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous siltstone; gray shale; coal----- | 910 | 915 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous siltstone; gray shale; coal----- | 915 | 920 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous siltstone; gray shale; coal----- | 920 | 925 |
| Sandstone, very fine, light-gray; minor gray shale; trace carbonaceous shale; coal----- | 925 | 930 |
| Sandstone, very fine, light-gray; minor gray shale; trace carbonaceous shale; coal----- | 930 | 935 |

Drill-hole W-NH-3-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor gray shale; trace carbonaceous shale; coal----- | 935 | 940 |
| Sandstone, very fine, light-gray; minor gray shale; trace carbonaceous shale; coal; minor coal----- | 940 | 945 |
| Sandstone, very fine, light-gray; minor gray shale; trace carbonaceous shale; coal; minor coal----- | 945 | 950 |
| Sandstone, very fine, light-gray; minor gray shale; orange- red medium sandstone; trace coal----- | 950 | 955 |
| Sandstone, very fine, light-gray; minor gray shale; orange- red medium sandstone; trace coal----- | 955 | 960 |
| Sandstone, very fine, light-gray; minor gray shale; orange- red medium sandstone; trace coal; minor carbonaceous shale----- | 960 | 965 |
| Shale, gray; minor light-gray very fine sandstone; trace white shale; coal----- | 965 | 970 |
| Shale, gray; minor might-gray very fine sandstone; trace white shale; coal----- | 970 | 975 |
| Sandstone, very fine, gray; minor gray carbonaceous shale; white siltstone; black carbonaceous siltstone; trace coal-- | 975 | 980 |
| Sandstone, very fine, gray; minor gray carbonaceous shale; white siltstone; black carbonaceous siltstone; trace coal-- | 980 | 985 |
| No recovery----- | 985 | 990 |

Drill-hole W-NH-3-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor gray carbonaceous shale; white siltstone; black carbonaceous siltstone; trace coal-- | 990 | 995 |
| Sandstone, very fine, light-gray; minor dark-gray carbonaceous shale; white shale; gray shale----- | 995 | 1,000 |
| No recovery----- | 1,000 | 1,005 |
| Sandstone, very fine, light-gray; minor dark-gray carbonaceous shale; white shale; gray shale; trace coal----- | 1,005 | 1,010 |
| Sandstone, very fine, light-gray; minor dark-gray carbonaceous shale; white shale; gray shale; trace coal----- | 1,010 | 1,015 |
| Sandstone, very fine, light-gray; minor dark-gray carbonaceous shale; white shale; gray shale; trace coal----- | 1,015 | 1,020 |
| Sandstone, very fine, light-gray; minor dark-gray carbonaceous shale; white shale; gray shale; trace coal----- | 1,020 | 1,025 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone; trace gray shale; coal; carbonaceous shale----- | 1,025 | 1,030 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone; trace gray shale; coal; carbonaceous shale----- | 1,030 | 1,035 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone; trace gray shale; coal; carbonaceous shale----- | 1,035 | 1,040 |
| Shale, gray; minor light-gray very fine sandstone; trace carbonaceous coal----- | 1,040 | 1,045 |
| Shale, gray; minor light-gray very fine sandstone; trace carbonaceous coal----- | 1,045 | 1,050 |

Drill-hole W-NH-3-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor light-gray very fine sandstone; trace carbonaceous coal----- | 1,050 | 1,055 |
| Shale, gray; minor light-gray very fine sandstone; trace carbonaceous coal----- | 1,055 | 1,060 |
| Sandstone, very fine, light-gray; minor gray siltstone; trace coal; carbonaceous shale; white shale; tan fine sandstone-- | 1,060 | 1,065 |
| Sandstone, very fine, light-gray; minor gray siltstone; trace coal; carbonaceous shale; white shale; tan fine sandstone-- | 1,065 | 1,070 |
| Sandstone, very fine, light-gray; minor gray siltstone; trace coal; carbonaceous shale; white shale; tan fine sandstone-- | 1,070 | 1,075 |
| Sandstone, very fine, light-gray; minor gray shale; dark-gray carbonaceous shale; yellow medium sandstone; trace white shale----- | 1,075 | 1,080 |
| Sandstone, very fine, light-gray; minor gray shale; dark-gray carbonaceous shale; yellow medium sandstone; trace white shale----- | 1,080 | 1,085 |
| Sandstone, very fine, light-gray; minor gray shale; dark-gray carbonaceous shale; yellow medium sandstone; trace white shale----- | 1,085 | 1,090 |
| Sandstone, very fine, light-gray; minor gray shale; dark-gray carbonaceous shale; yellow medium sandstone; trace white shale; trace coal----- | 1,090 | 1,095 |
| Sandstone, very fine, light-gray; minor gray shale; dark-gray carbonaceous shale; yellow medium sandstone; trace white shale; trace coal----- | 1,095 | 1,100 |

Drill-hole W-NH-3-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor light-gray fine sandstone; gray siltstone- | 1,100 | 1,105 |
| Shale, gray; minor light-gray fine sandstone; gray siltstone- | 1,105 | 1,110 |
| Shale, gray; minor light-gray fine sandstone; gray siltstone- | 1,110 | 1,115 |
| Shale, gray; minor light-gray fine sandstone; gray siltstone- | 1,115 | 1,120 |
| Shale, gray; minor light-gray fine sandstone; gray siltstone- | 1,120 | 1,125 |
| Shale, gray; minor light-gray fine sandstone; gray siltstone; minor tan concretions----- | 1,125 | 1,130 |
| Total depth sampled - 1,130 ft. | | |

Drill-hole W-NH-4-CD

NE¹/₄ NW¹/₄ sec. 30, T. 18 S., R. 7 E., Salt Lake Principal Meridian, Castledale quadrangle, Emery County, Utah; collar elevation 8,300 ft; begun September 21, 1976, abandoned October 4, 1976; sampled by L. F. Blanchard and J. V. Roberts.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Soil----- | 0 | 5 |
| Soil----- | 5 | 10 |
| Sandstone, fine, brownish-orange----- | 10 | 15 |
| Sandstone, fine, tan; minor gray mudstone----- | 15 | 20 |
| Sandstone, fine, tan; minor gray mudstone----- | 20 | 25 |
| Siltstone, gray-brown----- | 25 | 30 |
| Mudstone, brown; minor light brown, very fine sandstone----- | 30 | 35 |
| Mudstone, brown; minor black, carbonaceous mudstone----- | 35 | 40 |
| Sandstone, very fine, light-gray----- | 40 | 45 |
| Sandstone, very fine, light-gray----- | 45 | 50 |
| Sandstone, very fine, light-brown; trace carbonaceous mudstone----- | 50 | 55 |
| Sandstone, very fine, tan to gray; minor light brown mudstone----- | 55 | 60 |
| Mudstone, dark-gray; minor gray, very fine sandstone----- | 60 | 65 |
| Mudstone, dark-gray; minor gray, very fine sandstone----- | 65 | 70 |
| Mudstone, dark-gray; minor gray, very fine sandstone----- | 70 | 75 |
| Mudstone, dark-gray; minor gray, very fine sandstone----- | 75 | 80 |
| Mudstone, dark-gray; minor gray, very fine sandstone----- | 80 | 85 |
| Sandstone, very fine, gray; minor dark gray mudstone----- | 85 | 90 |

Drill-hole W-NH-4-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor dark gray mudstone----- | 90 | 95 |
| Sandstone, very fine, light-gray; trace dark gray mudstone---- | 95 | 100 |
| Sandstone, very fine, gray; dark gray mudstone----- | 100 | 105 |
| Sandstone, very fine, gray; dark gray mudstone----- | 105 | 110 |
| Sandstone, very fine, gray; dark gray mudstone----- | 110 | 115 |
| Sandstone, very fine, gray, dark gray mudstone----- | 115 | 120 |
| Sandstone, very fine, gray to light-brown; trace dark gray mudstone----- | 120 | 125 |
| Sandstone, very fine, gray to light-brown; trace dark gray mudstone----- | 125 | 130 |
| Sandstone, very fine, light-gray; minor carbonaceous shale; trace coal----- | 130 | 135 |
| Sandstone, very fine, light-gray----- | 135 | 140 |
| Sandstone, very fine, light-gray----- | 140 | 145 |
| Sandstone, very fine, brownish-gray; minor carbonaceous siltstone----- | 145 | 150 |
| Sandstone, very fine, brownish-gray; minor carbonaceous siltstone----- | 150 | 155 |
| Sandstone, fine, light-gray----- | 155 | 160 |
| Sandstone, fine, light-gray----- | 160 | 165 |
| Sandstone, fine, gray; minor carbonaceous siltstone----- | 165 | 170 |
| Sandstone, very fine, light-gray to white----- | 170 | 175 |
| Sandstone, very fine, light-gray to white----- | 175 | 180 |
| Sandstone, very fine, light-gray to white----- | 180 | 185 |

Drill-hole W-NH-4-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray to white----- | 185 | 190 |
| Sandstone, fine, dark-gray----- | 190 | 195 |
| Sandstone, fine, dark-gray----- | 195 | 200 |
| Sandstone, very fine, gray----- | 200 | 205 |
| Sandstone, very fine, gray----- | 205 | 210 |
| Sandstone, fine, gray- to dark-gray----- | 210 | 215 |
| Sandstone, fine, gray- to dark-gray----- | 215 | 220 |
| Sandstone, fine, gray- to dark-gray----- | 220 | 225 |
| Sandstone, very fine, light-gray----- | 225 | 230 |
| Sandstone, very fine, light-gray----- | 230 | 235 |
| Sandstone, very fine, light-gray----- | 235 | 240 |
| Sandstone, very fine, dark-gray; trace carbonaceous shale---- | 240 | 245 |
| Sandstone, very fine, dark-gray; trace carbonaceous shale---- | 245 | 250 |
| Sandstone, fine, gray----- | 250 | 255 |
| Sandstone, fine, gray----- | 255 | 260 |
| Sandstone, very fine to fine, light-gray ----- | 260 | 265 |
| Sandstone,very fine to fine, light-gray----- | 265 | 270 |
| Sandstone, very fine to fine, light gray ----- | 270 | 275 |
| Siltstone, gray----- | 275 | 280 |
| Sandstone, fine, gray; trace gray siltstone----- | 280 | 285 |
| Sandstone, fine, gray, trace gray siltstone----- | 285 | 290 |
| Sandstone, fine, gray; trace gray siltstone----- | 290 | 295 |
| Sandstone, fine, gray; trace gray siltstone----- | 295 | 300 |

Drill-hole W-NH-4-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray; trace gray siltstone----- | 300 | 305 |
| Sandstone, fine, gray; trace gray siltstone----- | 305 | 310 |
| Sandstone, fine, gray; trace gray siltstone----- | 310 | 315 |
| Sandstone, medium, gray----- | 315 | 320 |
| Sandstone, fine, gray----- | 320 | 325 |
| Sandstone, fine, gray----- | 325 | 330 |
| Sandstone, fine, gray----- | 330 | 335 |
| Sandstone, fine, brownish-gray; trace coal----- | 335 | 340 |
| Sandstone, fine, brownish-gray----- | 340 | 345 |
| Sandstone, fine, brownish-gray----- | 345 | 350 |
| Sandstone, fine, brownish-gray----- | 350 | 355 |
| Sandstone, fine, brownish-gray; trace coal----- | 355 | 360 |
| (Hole abandoned due to booting up and lost circulation. Rig skidded and new hole NH-4A drilled.) | | |
| Sandstone, fine, light-gray----- | 360 | 365 |
| Sandstone, fine, light-gray----- | 365 | 370 |
| Sandstone, fine, light-gray----- | 370 | 375 |
| Sandstone, fine, light-gray----- | 375 | 380 |
| Sandstone, fine, light-gray----- | 380 | 385 |
| Sandstone, fine, light-gray----- | 385 | 390 |
| Sandstone, fine, light-gray----- | 390 | 395 |
| Sandstone, fine, light-gray----- | 395 | 400 |
| Sandstone, fine, light-gray----- | 400 | 405 |

Drill-hole W-NH-4-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; minor carbonaceous shale----- | 405 | 410 |
| Siltstone, gray; minor carbonaceous shale----- | 410 | 415 |
| Siltstone, carbonaceous, dark-gray----- | 415 | 420 |
| Siltstone, carbonaceous----- | 420 | 425 |
| Sandstone, fine, gray; minor dark gray siltstone----- | 425 | 430 |
| No recovery----- | 430 | 435 |
| No recovery----- | 435 | 440 |
| No recovery----- | 440 | 445 |
| Shale, carbonaceous; minor carbonaceous siltstone----- | 445 | 450 |
| Shale, carbonaceous; minor carbonaceous siltstone----- | 450 | 455 |
| Shale, carbonaceous; minor carbonaceous siltstone----- | 455 | 460 |
| Sandstone, fine, gray; minor carbonaceous shale----- | 460 | 465 |
| Siltstone, gray; minor gray, very fine sandstone----- | 465 | 470 |
| Siltstone, gray; minor gray, very fine sandstone----- | 470 | 475 |
| Shale, carbonaceous; gray, fine sandstone----- | 475 | 480 |
| Shale, carbonaceous; gray, fine sandstone----- | 480 | 485 |
| No recovery----- | 485 | 490 |
| No recovery----- | 490 | 495 |
| No recovery----- | 495 | 500 |
| Siltstone, gray; gray, very fine sandstone----- | 500 | 505 |
| Sandstone, very fine, gray----- | 505 | 510 |
| Sandstone, very fine, gray----- | 510 | 515 |
| Sandstone, very fine, gray----- | 515 | 520 |

Drill-hole W-NH-4-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, dark-gray; gray, fine sandstone----- | 520 | 525 |
| Shale, dark-gray, silty; minor gray, silty shale----- | 525 | 530 |
| Shale, dark-gray, silty; minor gray, silty shale; plus trace carbonaceous shale----- | 530 | 535 |
| Sandstone, very fine, gray; minor dark gray, carbonaceous, very fine sandstone----- | 535 | 540 |
| Shale, carbonaceous; minor gray siltstone----- | 540 | 545 |
| Shale, carbonaceous; minor gray siltstone----- | 545 | 550 |
| Shale, carbonaceous; minor gray, very fine sandstone----- | 550 | 555 |
| Shale, carbonaceous; minor, gray, very fine sandstone----- | 555 | 560 |
| Shale, carbonaceous; minor, gray, very fine sandstone----- | 560 | 565 |
| Shale, carbonaceous; minor, gray, very fine sandstone----- | 565 | 570 |
| Shale, dark-gray; minor gray, silty shale----- | 570 | 575 |
| Shale, carbonaceous; trace gray siltstone----- | 575 | 580 |
| Shale, dark-gray; minor gray shale; minor carbonaceous shale- | 580 | 585 |
| Shale, dark-gray; minor gray shale; minor carbonaceous shale- | 585 | 590 |
| Shale, dark-gray; minor gray, very fine sandstone----- | 590 | 595 |
| Siltstone, gray; minor gray, very fine sandstone----- | 595 | 600 |
| Shale, carbonaceous; minor gray siltstone; minor gray, very fine sandstone----- | 600 | 605 |
| No recovery----- | 605 | 610 |
| No recovery----- | 610 | 615 |
| No recovery----- | 615 | 620 |
| No recovery----- | 620 | 625 |

Drill-hole W-NH-4-CD - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; minor gray shale; minor gray, very fine sandstone; trace carbonaceous shale----- | 625 | 630 |
| Siltstone, gray; minor gray shale; minor gray, very fine sandstone; trace carbonaceous shale----- | 630 | 635 |
| Siltstone, gray; minor gray shale; minor gray, very fine sandstone; trace carbonaceous shale----- | 635 | 640 |
| Siltstone, gray; minor gray shale; minor gray, very fine sandstone; trace carbonaceous shale----- | 640 | 645 |
| No recovery----- | 645 | 650 |
| No recovery----- | 650 | 655 |
| Shale, gray; trace carbonaceous shale----- | 655 | 660 |
| Sandstone, very fine, gray; minor dark gray siltstone; minor carbonaceous shale----- | 660 | 665 |
| Shale, carbonaceous; minor gray shale; minor gray, very fine sandstone----- | 665 | 670 |
| Shale, carbonaceous; minor gray shale; minor gray, very fine sandstone----- | 670 | 675 |
| Shale, carbonaceous; minor gray, very fine sandstone; trace coal----- | 675 | 680 |
| Shale, carbonaceous; minor gray, very fine sandstone; trace coal----- | 680 | 685 |
| Sandstone, gray, very fine; minor gray shale; minor carbon- aceous shale----- | 685 | 690 |

Drill-hole W-NH-4-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, carbonaceous; minor gray, very fine sandstone----- | 690 | 695 |
| Shale, carbonaceous; minor gray shale; minor gray, very fine sandstone----- | 695 | 700 |
| Shale, gray; minor gray, very fine sandstone; minor carbon- aceous shale----- | 700 | 705 |
| Shale, gray; minor gray, very fine sandstone; minor carbon- aceous shale----- | 705 | 710 |
| Mudstone, gray; minor gray, very fine sandstone; minor carbonaceous shale----- | 710 | 715 |
| Sandstone, very fine, gray; trace carbonaceous shale----- | 715 | 720 |
| Sandstone, very fine, gray; trace carbonaceous shale----- | 720 | 725 |
| Sandstone, very fine, gray; trace carbonaceous shale----- | 725 | 730 |
| Sandstone, very fine, gray; trace carbonaceous shale----- | 730 | 735 |
| Sandstone, very fine, gray; trace carbonaceous shale----- | 735 | 740 |
| Mudstone, gray; minor gray, very fine sandstone----- | 740 | 745 |
| Mudstone, gray; minor gray, very fine sandstone----- | 745 | 750 |
| Sandstone, very fine, gray; minor coal; minor mudstone----- | 750 | 755 |
| Mudstone, gray; minor gray, very fine sandstone; minor carbonaceous siltstone; trace coal----- | 755 | 760 |
| Total depth sampled - 760 ft | | |

Drill-hole W-NH-5-CD

SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 19, T. 18 S., R. 7 E., Salt Lake Principal Meridian, Castledale quadrangle, Emery County, Utah; collar elevation 8,325 ft; begun October 4, 1976, completed October 9, 1976; sampled by L. F. Blanchard and J. V. Roberts.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, yellow to tan----- | 0 | 5 |
| Sandstone, fine, yellow to tan----- | 5 | 10 |
| Sandstone, medium to coarse, tan----- | 10 | 15 |
| Sandstone, fine, tan----- | 15 | 20 |
| Sandstone, fine, tan----- | 20 | 25 |
| Sandstone, fine, tan----- | 25 | 30 |
| Sandstone, very fine, light-gray----- | 30 | 35 |
| Sandstone, fine to very fine, tan to orange; minor gray siltstone----- | 35 | 40 |
| Sandstone, fine to very fine, buff----- | 40 | 45 |
| Sandstone, fine, light-brown----- | 45 | 50 |
| Sandstone, fine, light-brown; trace silty, carbonaceous shale----- | 50 | 55 |
| Sandstone, fine, light-brown; trace silty, carbonaceous shale----- | 55 | 60 |
| Sandstone, fine, tan----- | 60 | 65 |
| Sandstone, fine, tan----- | 65 | 70 |
| Sandstone, fine, tan----- | 70 | 75 |
| Sandstone, fine, tan----- | 75 | 80 |
| Sandstone, fine, tan----- | 80 | 85 |

Drill-hole W-NH-5-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, tan----- | 85 | 90 |
| Sandstone, fine, tan; minor carbonaceous siltstone----- | 90 | 95 |
| Sandstone, fine, brown, carbonaceous----- | 95 | 100 |
| Sandstone, fine, light-gray----- | 100 | 105 |
| Sandstone, fine, light-gray----- | 105 | 110 |
| Sandstone, fine, light-gray----- | 110 | 115 |
| Sandstone, fine, light-gray----- | 115 | 120 |
| Sandstone, fine, gray; trace coal----- | 120 | 125 |
| Sandstone, fine, gray----- | 125 | 130 |
| Sandstone, fine, gray----- | 130 | 135 |
| Sandstone, fine, gray----- | 135 | 140 |
| Sandstone, fine, light-gray----- | 140 | 145 |
| Sandstone, fine, light-gray----- | 145 | 150 |
| Sandstone, fine, light-gray----- | 150 | 155 |
| Sandstone, fine, light-gray----- | 155 | 160 |
| Sandstone, fine, light-gray----- | 160 | 165 |
| Sandstone, fine, light-gray----- | 165 | 170 |
| Sandstone, fine, light-gray----- | 170 | 175 |
| Sandstone, fine, light-gray----- | 175 | 180 |
| Sandstone, fine, light-gray----- | 180 | 185 |
| Sandstone, fine, light-gray----- | 185 | 190 |
| Sandstone, medium, brown, carbonaceous----- | 190 | 195 |
| Sandstone, fine, dark-gray----- | 195 | 200 |
| Sandstone, fine, gray----- | 200 | 205 |

Drill-hole W-NH-5-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---------------------------------|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray----- | 205 | 210 |
| Sandstone, fine, gray----- | 210 | 215 |
| Sandstone, fine, gray----- | 215 | 220 |
| Sandstone, fine, gray----- | 220 | 225 |
| Sandstone, fine, gray----- | 225 | 230 |
| Sandstone, fine, gray----- | 230 | 235 |
| Sandstone, medium, gray----- | 235 | 240 |
| Sandstone, fine, gray----- | 240 | 245 |
| Sandstone, fine, gray----- | 245 | 250 |
| Sandstone, fine, gray----- | 250 | 255 |
| Sandstone, fine, dark-gray----- | 255 | 260 |
| Sandstone, fine, gray----- | 260 | 265 |
| Sandstone, fine, gray----- | 265 | 270 |
| Sandstone, fine, gray----- | 270 | 275 |
| Sandstone, fine, gray----- | 275 | 280 |
| Sandstone, fine, gray----- | 280 | 285 |
| Sandstone, fine, gray----- | 285 | 290 |
| Sandstone, fine, gray----- | 290 | 295 |
| Sandstone, fine, gray----- | 295 | 300 |
| Sandstone, fine, gray----- | 300 | 305 |
| Sandstone, fine, gray----- | 305 | 310 |
| Sandstone, fine, gray----- | 310 | 315 |
| Sandstone, fine, gray----- | 315 | 320 |
| Sandstone, fine, gray----- | 320 | 325 |

Drill-hole W-NH-5-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray----- | 325 | 330 |
| Sandstone, fine, gray----- | 330 | 335 |
| Sandstone, fine, gray----- | 335 | 340 |
| Sandstone, fine, gray----- | 340 | 345 |
| Sandstone, fine, gray----- | 345 | 350 |
| Sandstone, very fine, gray; minor gray siltstone----- | 350 | 355 |
| Siltstone, carbonaceous; carbonaceous shale----- | 355 | 360 |
| Siltstone, carbonaceous; minor fine, gray sandstone----- | 360 | 365 |
| Sandstone, fine, brown, carbonaceous----- | 365 | 370 |
| Sandstone, fine, brown, carbonaceous; plus minor gray siltstone----- | 370 | 375 |
| Shale, carbonaceous; minor gray siltstone; minor gray, fine, sandstone----- | 375 | 380 |
| Sandstone, fine, gray; minor carbonaceous shale----- | 380 | 385 |
| Sandstone, very fine, brown; minor carbonaceous siltstone; minor carbonaceous shale----- | 385 | 390 |
| Sandstone, very fine, brown; minor carbonaceous siltstone; minor carbonaceous shale----- | 390 | 395 |
| Sandstone, fine, brown; minor carbonaceous shale----- | 395 | 400 |
| Sandstone, fine, brown; minor carbonaceous shale----- | 400 | 405 |
| Sandstone, fine, brown; minor carbonaceous shale----- | 405 | 410 |
| Sandstone, fine, gray----- | 410 | 415 |
| Sandstone, fine, gray; minor brown, carbonaceous, silty shale- | 415 | 420 |
| Sandstone, fine, gray----- | 420 | 425 |

Drill-hole W-NH-5-CD - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray----- | 425 | 430 |
| Sandstone, fine, gray----- | 430 | 435 |
| Sandstone, fine, gray----- | 435 | 440 |
| Sandstone, fine, gray; minor brown, carbonaceous, silty shale----- | 440 | 445 |
| Sandstone, fine, gray----- | 445 | 450 |
| Sandstone, fine, gray----- | 450 | 455 |
| Sandstone, fine, gray----- | 455 | 460 |
| Siltstone, carbonaceous; minor gray, very fine sandstone----- | 460 | 465 |
| Siltstone, carbonaceous; minor gray, very fine sandstone----- | 465 | 470 |
| Siltstone, carbonaceous; minor gray, very fine sandstone----- | 470 | 475 |
| Sandstone, very fine, gray----- | 475 | 480 |
| Sandstone, fine, gray----- | 480 | 485 |
| Sandstone, fine, gray; trace coal----- | 485 | 490 |
| Sandstone, very fine, gray; trace black, carbonaceous silty shale----- | 490 | 495 |
| Siltstone, gray----- | 495 | 500 |
| Sandstone, fine, gray----- | 500 | 505 |
| Siltstone, light-brown----- | 505 | 510 |
| Siltstone, light-brown----- | 510 | 515 |
| Siltstone, light-gray----- | 515 | 520 |
| Siltstone, light-gray----- | 520 | 525 |
| Siltstone, light-gray----- | 525 | 530 |
| Siltstone, light-gray----- | 530 | 535 |

Drill-hole W-NH-5-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, light-gray----- | 535 | 540 |
| Sandstone, very fine, gray----- | 540 | 545 |
| Siltstone, gray----- | 545 | 550 |
| Siltstone, gray; minor carbonaceous shale; minor coal----- | 550 | 555 |
| Siltstone, brownish-gray----- | 555 | 560 |
| Siltstone, brownish-gray----- | 560 | 565 |
| Siltstone, brownish-gray----- | 565 | 570 |
| Siltstone, carbonaceous; trace coal----- | 570 | 575 |
| No recovery----- | 575 | 580 |
| No recovery----- | 580 | 585 |
| No recovery----- | 585 | 590 |
| No recovery----- | 590 | 595 |
| No recovery----- | 595 | 600 |
| No recovery----- | 600 | 610 |
| No recovery----- | 610 | 615 |
| Sandstone, very fine, light-gray; trace carbonaceous siltstone----- | 615 | 620 |
| Sandstone, very fine, light-gray; trace carbonaceous siltstone----- | 620 | 625 |
| Sandstone, very fine, light-gray; trace carbonaceous siltstone----- | 625 | 630 |
| Sandstone, very fine, light-gray; trace carbonaceous siltstone----- | 630 | 635 |
| Sandstone, very fine, light-gray; trace coal; trace carbonaceous siltstone----- | 635 | 640 |

Drill-hole W-NH-5-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; trace coal; trace carbonaceous siltstone----- | 640 | 645 |
| Sandstone, very fine, light-gray; trace coal; trace carbonaceous siltstone----- | 645 | 650 |
| Coal; trace light-gray, very fine sandstone; trace light-gray shale; trace gray shale; trace black, carbonaceous shale----- | 650 | 655 |
| Siltstone, carbonaceous, black; minor light-gray, very fine sandstone; minor black carbonaceous shale; trace coal; trace gray shale----- | 655 | 660 |
| Sandstone, very fine, light-gray; trace coal; trace gray shale----- | 660 | 665 |
| Sandstone, very fine, light-gray; trace coal; trace gray shale----- | 665 | 670 |
| Sandstone, very fine, light-gray; trace coal; trace gray shale----- | 670 | 675 |
| Shale, carbonaceous, black; minor light-gray, very fine sandstone; trace carbonaceous siltstone; trace gray shale; trace coal----- | 675 | 680 |
| Shale, carbonaceous, black; minor light-gray, very fine sandstone; trace carbonaceous siltstone; trace gray shale; trace coal----- | 680 | 685 |

Drill-hole W-NH-5-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, carbonaceous, black; minor light-gray, very fine sandstone; trace carbonaceous siltstone; trace gray shale; trace coal----- | 685 | 690 |
| Sandstone, very fine to silty, light-gray; minor black carbonaceous shale; trace gray shale----- | 690 | 695 |
| Sandstone, very fine to silty, light gray; minor black carbonaceous shale; trace gray shale----- | 695 | 700 |
| No recovery----- | 700 | 705 |
| No recovery----- | 705 | 710 |
| No recovery----- | 710 | 715 |
| Sandstone, very fine, light-gray; minor coal----- | 715 | 720 |
| Sandstone, very fine, gray; trace coal----- | 720 | 725 |
| Sandstone, very fine, gray; minor gray shale; minor carbonaceous shale; trace coal----- | 725 | 730 |
| Sandstone, very fine, gray; minor gray shale; minor carbonaceous shale; trace coal----- | 730 | 735 |
| Sandstone, very fine, gray; minor gray shale; minor carbonaceous shale; trace coal----- | 735 | 740 |
| Sandstone, very fine, gray; minor gray shale; minor carbonaceous shale; trace coal----- | 740 | 745 |
| Sandstone, very fine, gray; minor gray shale; minor carbonaceous shale; trace coal----- | 745 | 750 |

Drill-hole W-NH-5-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor gray shale; minor carbonaceous shale; trace coal----- | 750 | 755 |
| Sandstone, very fine, gray; minor gray shale; minor carbonaceous shale; trace coal----- | 755 | 760 |
| Sandstone, very fine, gray; minor gray shale; minor carbonaceous shale; trace coal----- | 760 | 765 |
| Sandstone, very fine, gray; minor gray shale; minor carbonaceous shale; trace coal----- | 765 | 770 |
| Shale, gray; minor black, carbonaceous shale; minor gray, very fine sandstone; minor gray siltstone; trace coal----- | 770 | 775 |
| Shale, gray, minor black, carbonaceous shale; minor gray, very fine sandstone; minor gray siltstone; trace coal----- | 775 | 780 |
| Shale, gray; minor black, carbonaceous shale; minor gray, very fine sandstone; minor gray siltstone; trace coal----- | 780 | 785 |
| Shale, dark-gray; trace carbonaceous shale; trace coal----- | 785 | 790 |
| Coal; trace gray shale; trace dark-gray carbonaceous shale; gray, very fine sandstone----- | 790 | 795 |
| Coal, trace gray shale; trace dark-gray carbonaceous shale; gray, very fine sandstone----- | 795 | 800 |
| Sandstone, very fine, gray; minor coal; trace carbonaceous shale; trace gray shale----- | 800 | 805 |

Drill-hole W-NH-5-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor coal; trace carbonaceous shale; trace gray shale----- | 805 | 810 |
| Shale, carbonaceous, black; minor coal; minor gray, very fine sandstone----- | 810 | 815 |
| Shale, carbonaceous black; minor coal; minor gray, very fine sandstone----- | 815 | 820 |
| Coal; minor black, carbonaceous shale; trace gray, very fine sandstone----- | 820 | 825 |
| Shale, gray; minor black carbonaceous shale; minor gray, very fine sandstone; trace coal----- | 825 | 830 |
| Shale, gray; minor black carbonaceous shale; minor gray, very fine sandstone; trace coal----- | 830 | 835 |
| Shale, gray, minor black carbonaceous shale; minor gray, very fine sandstone; trace coal----- | 835 | 840 |
| Shale, gray; trace gray, very fine sandstone; trace black carbonaceous shale; trace coal----- | 840 | 845 |
| Shale, gray; trace gray, very fine sandstone; trace black carbonaceous shale; trace coal----- | 845 | 850 |
| Shale, gray; trace gray, very fine sandstone; trace black carbonaceous shale; trace coal----- | 850 | 855 |
| Coal----- | 855 | 860 |
| Sandstone, very fine, gray; minor coal; trace gray shale; carbonaceous shale----- | 860 | 865 |

Drill-hole W-NH-5-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor coal; trace gray shale; carbonaceous shale----- | 865 | 870 |
| Sandstone, very fine, gray; minor coal; trace gray shale; carbonaceous shale----- | 870 | 875 |
| Sandstone, very fine, tan to gray; minor black carbonaceous shale; minor gray shale; minor gray siltstone; trace coal--- | 875 | 880 |
| No recovery----- | 880 | 885 |
| No recovery----- | 885 | 890 |
| Sandstone, very fine, gray; minor gray shale; minor gray siltstone; trace yellow, fine sandstone; trace coal----- | 890 | 895 |
| Sandstone, very fine, gray; minor gray shale; minor gray siltstone; trace yellow, fine sandstone; trace coal----- | 895 | 900 |
| Snadstone, very fine, gray; minor gray shale; minor gray siltstone; trace eyellow, fine sandstone; trace coal----- | 900 | 905 |
| Snadstone, very fine, gray; minor gray shale; minor gray siltstone; trace yellow, fine sandstone; trace coal----- | 905 | 910 |
| Siltstone, carbonaceous; minor dark-gray shale; minor gray, very fine sandstone; trace coal----- | 910 | 915 |
| Siltstone, carbonaceous; minor dark-gray shale; minor gray, very fine sandstone; trace coal----- | 915 | 920 |
| Siltstone, carbonaceous; minor dark-gray shale; minor gray, very fine sandstone; trace coal----- | 920 | 925 |
| Siltstone, carbonaceous; minor dark-gray shale; minor gray, very fine sandstone; trace coal----- | 925 | 930 |

Drill-hole W-NH-5-CD - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, carbonaceous; minor dark-gray shale; minor gray, very fine sandstone; trace coal----- | 930 | 935 |
| Coal; trace dark-gray carbonaceous shale; trace gray shale; trace gray, very fine sandstone----- | 935 | 940 |
| Sandstone, very fine, gray; minor coal. trace gray siltstone--- | 940 | 945 |
| Sandstone, fine to very fine, white; trace coal----- | 945 | 950 |
| Sandstone, fine to very fine, white; trace coal----- | 950 | 955 |
| Sandstone, fine to very fine, white; trace coal----- | 955 | 960 |
| Sandstone, fine to very fine, white; trace coal----- | 960 | 965 |
| Sandstone, fine to very fine, white; trace coal----- | 965 | 970 |
| Total depth sampled - 970 ft. | | |

Drill-hole W-NH-6-H

SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 18, T. 18 S., R. 7 E., Salt Lake Principal Meridian, Hiawatha quadrangle, Emery County, Utah; collar elevation 8,525 ft; begun October 10, 1976, completed October 13, 1976; sampled by L. F. Blanchard, J. V. Roberts, and E. G. Ellis.

[All measurements in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Soil; minor light-tan, fine sandstone----- | 0 | 5 |
| Soil; minor light-tan, fine sandstone----- | 5 | 10 |
| Soil; minor light-tan, fine sandstone----- | 10 | 15 |
| Sandstone, fine, light-tan----- | 15 | 20 |
| Sandstone, fine, light-tan----- | 20 | 25 |
| Sandstone, fine to very fine, light-gray----- | 25 | 30 |
| Sandstone, fine to very fine, light-gray----- | 30 | 35 |
| Sandstone, fine to very fine, light-gray----- | 35 | 40 |
| Sandstone, fine to very fine, light-gray----- | 40 | 45 |
| Sandstone, fine to very fine, light-gray----- | 45 | 50 |
| Sandstone, fine to very fine, light-gray----- | 50 | 55 |
| Sandstone, fine to very fine, light-gray----- | 55 | 60 |
| Sandstone, fine to very fine, light tan----- | 60 | 65 |
| Sandstone, fine to very fine, light tan----- | 65 | 70 |
| Sandstone, fine to very fine, light-gray----- | 70 | 75 |
| Sandstone, fine to very fine, light-gray----- | 75 | 80 |
| Sandstone, fine to very fine, light-tan-orange----- | 80 | 85 |
| Sandstone, fine to very fine, light-gray and tan-orange----- | 85 | 90 |
| Shale, dark-gray; minor carbonaceous shale----- | 90 | 95 |

Drill-hole W-NH-6-H - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, very light gray----- | 95 | 100 |
| Sandstone, very fine, very light gray----- | 100 | 105 |
| Sandstone, very fine, tan----- | 105 | 110 |
| Sandstone, very fine, tan----- | 110 | 115 |
| Sandstone, very fine, light-tan----- | 115 | 120 |
| Sandstone, fine, gray----- | 120 | 125 |
| Sandstone, fine, light-gray----- | 125 | 130 |
| Sandstone, very fine, light-tan----- | 130 | 135 |
| Sandstone, very fine, light-tan----- | 135 | 140 |
| Sandstone, very fine, very light gray----- | 140 | 145 |
| Sandstone, very fine, very light gray----- | 145 | 150 |
| Sandstone, very fine, very light gray----- | 150 | 155 |
| Sandstone, very fine, very light gray----- | 155 | 160 |
| Sandstone, very fine, very light tan gray----- | 160 | 165 |
| Sandstone, very fine, very light tan gray----- | 165 | 170 |
| Sandstone, very fine, very light tan gray----- | 170 | 175 |
| Sandstone, very fine, tan-orange; minor gray, very fine sandstone----- | 175 | 180 |
| Sandstone, very fine, orange and light-gray----- | 180 | 185 |
| Sandstone, very fine, orange and light-gray----- | 185 | 190 |
| Sandstone, very fine, light-gray----- | 190 | 195 |
| Sandstone, very fine, light-gray----- | 195 | 200 |
| Sandstone, very fine, light-gray----- | 200 | 205 |
| Sandstone, very fine, light-gray----- | 205 | 210 |

Drill-hole W-NH-6-H - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, light-gray----- | 210 | 215 |
| Sandstone, fine, light-gray----- | 215 | 220 |
| Sandstone, fine to very fine, light-tan-gray----- | 220 | 225 |
| Sandstone, fine to very fine, light-tan-gray----- | 225 | 230 |
| Sandstone, fine to very fine, light-tan-gray----- | 230 | 235 |
| Sandstone, very fine, light-gray; minor light-gray shale----- | 235 | 240 |
| Sandstone, very fine, light-gray; minor light-gray shale----- | 240 | 245 |
| Sandstone, very fine, light-gray; minor light-gray shale----- | 245 | 250 |
| Sandstone, very fine, light tan----- | 250 | 255 |
| Sandstone, very fine, light-tan----- | 255 | 260 |
| Sandstone, very fine, light-tan----- | 260 | 265 |
| Sandstone, very fine, light-tan----- | 265 | 270 |
| Sandstone, very fine, light-tan----- | 270 | 275 |
| Sandstone, very fine, light-tan; trace gray shale----- | 275 | 280 |
| Sandstone, very fine, light-tan; trace gray shale----- | 280 | 285 |
| Sandstone, very fine, gray----- | 285 | 290 |
| Sandstone, very fine, gray; minor tan, very fine sandstone; trace gray siltstone----- | 290 | 295 |
| Sandstone, very fine, gray; trace gray siltstone----- | 295 | 300 |
| Sandstone, very fine, tan; minor gray; very fine sandstone---- | 300 | 305 |
| Sandstone, very fine, tan; minor gray, very fine sandstone---- | 305 | 310 |
| Sandstone, very fine, tan; minor gray, very fine sandstone---- | 310 | 315 |
| Sandstone, very fine, tan; minor gray, very fine sandstone---- | 315 | 320 |
| Sandstone, very fine, tan; minor gray, very fine sandstone--- | 320 | 325 |

Drill-hole W-NH-6-H - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, tan; minor gray, very fine sandstone---- | 325 | 330 |
| Shale, gray; minor tan, fine sandstone; trace coal----- | 330 | 335 |
| Shale, gray; trace coal----- | 335 | 340 |
| Sandstone, fine to medium, tan; minor gray shale----- | 340 | 345 |
| Sandstone, fine to medium, tan----- | 345 | 350 |
| Sandstone, fine to medium, tan; minor gray shale; trace carbonaceous siltstone----- | 350 | 355 |
| Sandstone, very fine, light-gray----- | 355 | 360 |
| Sandstone, very fine, light-gray----- | 360 | 365 |
| Sandstone, very fine, light-gray----- | 365 | 370 |
| Sandstone, very fine, light-gray----- | 370 | 375 |
| Sandstone, very fine, light-gray----- | 375 | 380 |
| Siltstone, slightly carbonaceous, gray----- | 380 | 385 |
| Siltstone, slightly carbonaceous, gray; minor gray shale----- | 385 | 390 |
| Sandstone, very fine, light-gray----- | 390 | 395 |
| Sandstone, very fine, light-gray----- | 395 | 400 |
| Sandstone, very fine, light-gray----- | 400 | 405 |
| Sandstone, very fine, light-gray----- | 405 | 410 |
| Sandstone, very fine, light-gray; minor gray shale----- | 410 | 415 |
| Sandstone, very fine, light-gray; minor gray shale----- | 415 | 420 |
| Shale, slightly carbonaceous, dark-gray----- | 420 | 425 |
| Shale, slightly carbonaceous, dark-gray; minor light-gray, very fine sandstone----- | 425 | 430 |
| Shale, slightly carbonaceous; dark-gray; minor light-gray, very fine sandstone; minor black carbonaceous shale----- | 430 | 435 |

Drill-hole W-NH-6-H - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, slightly carbonaceous, dark-gray; minor light-gray, very fine sandstone; minor black carbonaceous shale----- | 435 | 440 |
| Shale, slightly carbonaceous, dark-gray; minor light-gray, very fine sandstone; minor black carbonaceous shale; trace coal----- | 440 | 445 |
| Shale, slightly carbonaceous, dark-gray; minor light-gray, very fine sandstone; minor black carbonaceous shale; trace coal----- | 445 | 450 |
| Shale, gray----- | 450 | 455 |
| Shale, gray----- | 455 | 460 |
| Shale, gray; minor dark-gray shale----- | 460 | 465 |
| Shale, gray; minor dark-gray shale; trace coal----- | 465 | 470 |
| Shale, gray; minor dark-gray shale; trace coal----- | 470 | 475 |
| Sandstone, very fine, light-gray; trace coal----- | 475 | 480 |
| Sandstone, very fine, light-gray; trace coal; minor light- gray siltstone----- | 480 | 485 |
| Sandstone, very fine, light-gray; trace coal; minor light- gray siltstone----- | 485 | 490 |
| Shale, gray; minor carbonaceous shale----- | 490 | 495 |
| Shale, gray; minor carbonaceous shale----- | 495 | 500 |
| Shale, gray; minor carbonaceous shale; trace coal----- | 500 | 505 |
| Siltstone, gray; minor gray shale----- | 505 | 510 |
| Sandstone, very fine, light-gray; trace gray shale----- | 510 | 515 |

Drill-hole W-NH-6-H - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; trace gray shale----- | 515 | 520 |
| Shale, gray; minor gray siltstone; trace light-gray, very fine sandstone----- | 520 | 525 |
| Shale, gray; minor gray siltstone; trace light-gray, very fine sandstone; trace coal----- | 525 | 530 |
| Sandstone, very fine, light-gray; minor gray shale; coal----- | 530 | 535 |
| Sandstone, very fine, light-gray; minor gray shale; coal----- | 535 | 540 |
| Shale, gray; minor gray siltstone; trace white shale; coal---- | 540 | 545 |
| Shale, gray; minor gray siltstone; trace white shale; coal; minor carbonaceous shale----- | 545 | 550 |
| Sandstone, very fine, light-gray; trace coal----- | 550 | 555 |
| Sandstone, very fine, light-gray; trace coal----- | 555 | 560 |
| Sandstone, very fine, light-gray; trace gray shale----- | 560 | 565 |
| Shale, gray; minor gray, very fine sandstone; gray siltstone-- | 565 | 570 |
| Shale, gray; minor gray, very fine sandstone; gray siltstone; trace coal----- | 570 | 575 |
| Shale, gray; minor gray, very fine sandstone; gray siltstone-- | 575 | 580 |
| Sandstone, very fine, gray; trace coal----- | 580 | 585 |
| Sandstone, very fine, gray; minor coal----- | 585 | 590 |
| Siltstone, gray; minor gray shale----- | 590 | 595 |
| Siltstone, gray; minor gray shale----- | 595 | 600 |
| Sandstone, very fine, gray----- | 600 | 605 |
| Sandstone, very fine, gray----- | 605 | 610 |

Drill-hole W-NH-6-H - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray----- | 610 | 615 |
| Sandstone, very fine, gray----- | 615 | 620 |
| Sandstone, very fine, gray----- | 620 | 625 |
| Sandstone, very fine, gray----- | 625 | 630 |
| Sandstone, very fine, gray----- | 630 | 635 |
| Sandstone, very fine, gray----- | 635 | 640 |
| Sandstone, very fine, gray----- | 640 | 645 |
| Sandstone, very fine, gray; trace coal----- | 645 | 650 |
| Shale, light-gray; minor light-gray, very fine sandstone----- | 650 | 655 |
| Shale, light-gray; minor light-gray, very fine sandstone----- | 655 | 660 |
| Shale, light-gray; minor light-gray, very fine sandstone----- | 660 | 665 |
| Sandstone, very fine, white; trace gray shale----- | 665 | 670 |
| Siltstone, gray; minor gray shale----- | 670 | 675 |
| Siltstone, gray; minor gray shale; trace coal----- | 675 | 680 |
| Siltstone, gray; minor gray shale----- | 680 | 685 |
| Siltstone, gray; minor gray shale----- | 685 | 690 |
| Shale, carbonaceous, black; minor gray shale; gray siltstone; trace coal----- | 690 | 695 |
| Shale, carbonaceous, black; minor gray shale; gray siltstone; trace coal----- | 695 | 700 |
| Shale, carbonaceous, black; minor gray shale; gray siltstone; trace coal----- | 700 | 705 |
| Sandstone, very fine, gray----- | 705 | 710 |

Drill-hole W-NH-6-H - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray----- | 710 | 715 |
| Sandstone, very fine, gray----- | 715 | 720 |
| Siltstone, gray----- | 720 | 725 |
| Siltstone, light-gray----- | 725 | 730 |
| Sandstone, very fine, light-gray----- | 730 | 735 |
| Sandstone, fine, gray----- | 735 | 740 |
| Sandstone, fine, gray----- | 740 | 745 |
| Sandstone, fine, gray----- | 745 | 750 |
| Sandstone, fine, gray----- | 750 | 755 |
| Siltstone, gray; minor gray shale----- | 755 | 760 |
| Siltstone, gray; minor gray shale----- | 760 | 765 |
| Siltstone, gray; minor gray shale----- | 765 | 770 |
| Shale, silty, gray----- | 770 | 775 |
| Shale, silty, gray----- | 775 | 780 |
| Shale, silty, gray----- | 780 | 785 |
| Shale, silty, gray----- | 785 | 790 |
| Shale, silty, gray----- | 790 | 795 |
| Siltstone, gray----- | 795 | 800 |
| Siltstone, gray----- | 800 | 805 |
| Siltstone, gray----- | 805 | 810 |
| Siltstone, gray----- | 810 | 815 |
| Siltstone, gray----- | 815 | 820 |
| Siltstone, gray----- | 820 | 825 |

Drill-hole W-NH-6-H - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; trace carbonaceous shale; coal---- | 825 | 830 |
| Sandstone, very fine, light-gray----- | 830 | 835 |
| Sandstone, very fine, light-gray----- | 835 | 840 |
| Sandstone, very fine, light-gray----- | 840 | 845 |
| Sandstone, very fine, light-gray----- | 845 | 850 |
| Sandstone, very fine, light-gray----- | 850 | 855 |
| Coal; minor light-gray, very fine sandstone----- | 855 | 860 |
| Sandstone, very fine, tan----- | 860 | 865 |
| Sandstone, very fine, tan----- | 865 | 870 |
| Sandstone, very fine, light-gray----- | 870 | 875 |
| Sandstone, very fine, tan----- | 875 | 880 |
| Sandstone, very fine, tan----- | 880 | 885 |
| Sandstone, very fine, tan----- | 885 | 890 |
| Sandstone, very fine, tan; minor coal; carbonaceous shale---- | 890 | 895 |
| Sandstone, very fine, tan----- | 895 | 900 |
| Sandstone, very fine, tan----- | 900 | 905 |
| Sandstone, very fine, tan----- | 905 | 910 |
| Sandstone, very fine, tan----- | 910 | 915 |
| Sandstone, very fine, tan----- | 915 | 920 |
| Sandstone, very fine, tan----- | 920 | 925 |
| Siltstone, tan----- | 925 | 930 |
| Siltstone, tan----- | 930 | 935 |
| Siltstone, tan----- | 935 | 940 |
| Coal; minor carbonaceous siltstone----- | 940 | 945 |

Drill-hole W-NH-6-H - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, light-gray----- | 945 | 950 |
| Siltstone, light-gray; minor coal; trace carbonaceous shale--- | 950 | 955 |
| Sandstone, very fine, light-gray----- | 955 | 960 |
| Siltstone, tan----- | 960 | 965 |
| Siltstone, tan----- | 965 | 970 |
| Siltstone, light-gray----- | 970 | 975 |
| Siltstone, light-gray----- | 975 | 980 |
| Siltstone, light-gray----- | 980 | 985 |
| Sandstone, very fine, light-gray----- | 985 | 990 |
| Siltstone, tan----- | 990 | 995 |
| Siltstone, carbonaceous; minor coal----- | 995 | 1,000 |
| Siltstone, tan----- | 1,000 | 1,005 |
| Siltstone, light-gray----- | 1,005 | 1,010 |
| Siltstone, light-gray----- | 1,010 | 1,015 |
| Siltstone, tan----- | 1,015 | 1,020 |
| Due to incomplete recovery, next sample is from 1,060 to 1,065 | | |
| Siltstone, gray; trace carbonaceous shale; coal----- | 1,060 | 1,065 |
| Siltstone, gray; trace carbonaceous shale; coal; minor gray shale----- | 1,065 | 1,070 |
| Siltstone, gray----- | 1,070 | 1,075 |
| Sandstone, very fine, light-gray----- | 1,075 | 1,080 |
| Sandstone, very fine, light-gray; minor coal----- | 1,080 | 1,085 |
| Sandstone, very fine, light-gray; trace gray siltstone; coal-- | 1,085 | 1,090 |

Drill-hole W-NH-6-H - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; trace gray siltstone; coal-- | 1,090 | 1,095 |
| Sandstone, very fine, light-gray; minor gray siltstone; coal-- | 1,095 | 1,100 |
| Siltstone, gray; minor light-gray, very fine sandstone; trace coal----- | 1,100 | 1,105 |
| Sandstone, very fine, light-gray; minor carbonaceous shale; coal----- | 1,105 | 1,110 |
| Sandstone, very fine, light-gray; minor carbonaceous shale; coal----- | 1,110 | 1,115 |
| Siltstone, gray; minor light-gray, very fine sandstone----- | 1,115 | 1,120 |
| Siltstone, gray; trace coal----- | 1,120 | 1,125 |
| Sandstone, very fine, light-gray; minor gray siltstone; trace coal----- | 1,125 | 1,130 |
| Sandstone, very fine, light-gray; trace carbonaceous shale---- | 1,130 | 1,135 |
| Sandstone, very fine, light-gray----- | 1,135 | 1,140 |
| Sandstone, very fine, light-gray----- | 1,140 | 1,145 |
| Sandstone, very fine, light-gray----- | 1,145 | 1,150 |
| Shale, carbonaceous; trace light-gray, very fine sandstone---- | 1,150 | 1,155 |
| Sandstone, very fine, light-gray; trace carbonaceous shale---- | 1,155 | 1,160 |
| No recovery----- | 1,160 | 1,165 |
| Sandstone, very fine, light-gray; trace carbonaceous shale---- | 1,165 | 1,170 |
| Sandstone, very fine, light-gray----- | 1,170 | 1,175 |
| Sandstone, very fine, light-gray; trace carbonaceous shale---- | 1,175 | 1,180 |
| Total depth sampled - 1,180 ft. | | |

Drill-hole W-NH-7-CD

NE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 20, T. 18 S., R. 7 E., Salt Lake Principal Meridian, Hiawatha quadrangle, Emery County, Utah; collar elevation 8,625 ft; begun October 11, 1976, completed October 13, 1976; sampled by L. F. Blanchard, J. V. Roberts, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|---------------------------------------|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, medium, light-yellow----- | 0 | 5 |
| Sandstone, medium, light-gray----- | 5 | 10 |
| Sandstone, medium, light-gray----- | 10 | 15 |
| Sandstone, medium, light-gray----- | 15 | 20 |
| Sandstone, medium, light-yellow----- | 20 | 25 |
| Sandstone, medium, light-yellow----- | 25 | 30 |
| Sandstone, fine, light-gray----- | 30 | 35 |
| Sandstone, fine, light-gray----- | 35 | 40 |
| Sandstone, fine, light-gray----- | 40 | 45 |
| Sandstone, fine, light-yellow----- | 45 | 50 |
| Sandstone, fine, light-yellow----- | 50 | 55 |
| Sandstone, fine, light-yellow----- | 55 | 60 |
| Sandstone, fine, light-yellow----- | 60 | 65 |
| Sandstone, very fine, light gray----- | 65 | 70 |
| Sandstone, very fine, light-gray----- | 70 | 75 |
| Sandstone, very fine, light-gray----- | 75 | 80 |
| Sandstone, fine, light-yellow----- | 80 | 85 |
| Sandstone, very fine, light-gray----- | 85 | 90 |
| Sandstone, very fine, light-gray----- | 90 | 95 |

Drill-hole W-NH-7-CD- continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray----- | 95 | 100 |
| Sandstone, very fine, light-gray; minor light-yellow, fine sandstone----- | 100 | 105 |
| Sandstone, very fine, light-yellow; trace carbonaceous shale-- | 105 | 110 |
| Sandstone, very fine, light-yellow; trace carbonaceous shale-- | 110 | 115 |
| Sandstone, very fine, light-yellow; trace carbonaceous shale-- | 115 | 120 |
| Sandstone, very fine, light-yellow----- | 120 | 125 |
| Sandstone, very fine, light-yellow----- | 125 | 130 |
| Sandstone, very fine, light-yellow----- | 130 | 135 |
| Sandstone, very fine, light-yellow----- | 135 | 140 |
| Sandstone, very fine, light-yellow----- | 140 | 145 |
| Sandstone, fine, light-yellow----- | 145 | 150 |
| Sandstone, fine, light-yellow----- | 150 | 155 |
| Sandstone, fine, light-yellow----- | 155 | 160 |
| Sandstone, fine, light-yellow----- | 160 | 165 |
| Sandstone, medium, light-yellow; minor gray, slightly car- bonaceous siltstone----- | 165 | 170 |
| Sandstone, medium, light-yellow; minor gray, slightly car- bonaceous siltstone----- | 170 | 175 |
| Sandstone, medium, light-yellow----- | 175 | 180 |
| Sandstone, medium, light-yellow----- | 180 | 185 |
| Sandstone, medium, light-yellow----- | 185 | 190 |
| Sandstone, medium, light-yellow; minor gray, slightly car- bonaceous siltstone----- | 190 | 195 |

Drill-hole W-NH-7-CD- continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, medium-light-yellow; minor gray, slightly carbonaceous siltstone----- | 195 | 200 |
| Sandstone, medium, light-yellow; minor gray, slightly carbonaceous siltstone----- | 200 | 205 |
| Sandstone, medium, light-yellow; minor gray, slightly carbonaceous siltstone; trace carbonaceous shale----- | 205 | 210 |
| Sandstone, medium, light-yellow; minor gray, slightly carbonaceous siltstone; trace carbonaceous shale----- | 210 | 215 |
| Sandstone, medium, light-yellow; minor gray, slightly carbonaceous siltstone; trace carbonaceous shale----- | 215 | 220 |
| Sandstone, fine, yellow-brown; trace gray siltstone----- | 220 | 225 |
| Sandstone, fine, yellow-brown; trace gray siltstone----- | 225 | 230 |
| Sandstone, fine, yellow-brown; trace gray siltstone----- | 230 | 235 |
| Sandstone, fine, yellow-brown; trace gray siltstone; trace light-gray, very fine sandstone----- | 235 | 240 |
| Siltstone, slightly carbonaceous, dark-gray; minor gray, very fine sandstone----- | 240 | 245 |
| Siltstone, slightly carbonaceous, dark-gray; minor gray, very fine sandstone----- | 245 | 250 |
| Siltstone, slightly carbonaceous, dark-gray; minor gray, very fine sandstone----- | 250 | 255 |
| Siltstone, slightly carbonaceous, dark-gray; minor gray, very fine sandstone----- | 255 | 260 |

Drill-hole W-NH-7-CD- continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor gray siltstone----- | 260 | 265 |
| Siltstone, sandy, light-gray; minor dark-gray, slightly carbonaceous siltstone; light-yellow, fine sandstone----- | 265 | 270 |
| Sandstone, fine, yellow-brown; minor dark-gray-black car- bonaceous siltstone; trace coal----- | 270 | 275 |
| Siltstone, gray; minor dark-gray, carbonaceous siltstone; gray siltstone; trace pyrite----- | 275 | 280 |
| Siltstone, gray; minor dark-gray, carbonaceous siltstone; gray siltstone; trace pyrite----- | 280 | 285 |
| Siltstone, carbonaceous, dark-gray; minor gray siltstone; trace coal; pyrite----- | 285 | 290 |
| Sandstone, fine, gray; minor gray, slightly carbonaceous siltstone----- | 290 | 295 |
| Sandstone, fine, gray; minor gray, slightly carbonaceous siltstone; trace pryite----- | 295 | 300 |
| Sandstone, fine, gray; minor gray; slightly carbonaceous siltstone; trace pyrite----- | 300 | 305 |
| Sandstone, fine, gray; minor gray; slightly carbonaceous siltstone; trace pryite----- | 305 | 310 |
| Siltstone, carbonaceous, dark-gray; minor gray, fine sand- stone; trace carbonaceous shale----- | 310 | 315 |
| Siltstone, carbonaceous, dark-gray; minor gray, fine sand- stone; trace carbonaceous shale----- | 315 | 320 |

Drill-hole W-NH-7-CD- continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, carbonaceous, dark-gray; minor gray, fine sandstone; trace carbonaceous shale----- | 320 | 325 |
| Siltstone, carbonaceous, dark-gray; minor gray, fine sandstone; trace carbonaceous shale----- | 325 | 330 |
| Sandstone, fine, gray; minor dark-gray, carbonaceous siltstone; carbonaceous shale; trace coal----- | 330 | 335 |
| Sandstone, slightly carbonaceous, very fine, gray; minor dark-gray, carbonaceous siltstone; trace coal----- | 335 | 340 |
| Sandstone, slightly carbonaceous, very fine, gray; minor dark-gray, carbonaceous siltstone; trace coal----- | 340 | 345 |
| Sandstone, slightly carbonaceous, very fine, gray; minor dark-gray, carbonaceous siltstone; trace coal----- | 345 | 350 |
| Sandstone, slightly carbonaceous, very fine, gray; minor dark-gray, carbonaceous siltstone; trace coal----- | 350 | 355 |
| Sandstone, slightly carbonaceous, very fine, gray; minor dark-gray, carbonaceous siltstone; trace coal----- | 355 | 360 |
| Siltstone, carbonaceous, dark-gray; minor gray, very fine sandstone; light-gray siltstone; light-yellow, fine sandstone----- | 360 | 365 |
| Siltstone, carbonaceous, dark-gray; minor gray, very fine sandstone; light-gray siltstone; light-yellow, fine sandstone----- | 365 | 370 |

Drill-hole W-NH-7-CD- continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, carbonaceous, dark-gray; minor gray, very fine sandstone; light-gray siltstone; light-yellow, fine sandstone----- | 370 | 375 |
| Siltstone, carbonaceous, dark-gray; minor gray, very fine sandstone; light-gray siltstone; light-yellow, fine sandstone----- | 375 | 380 |
| Sandstone, very fine, gray; trace dark-gray carbonaceous siltstone----- | 380 | 385 |
| Sandstone, very fine, gray; trace dark-gray carbonaceous siltstone----- | 385 | 390 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone; yellow-brown fine sandstone----- | 390 | 395 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone; yellow-brown fine sandstone----- | 395 | 400 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone----- | 400 | 405 |
| No recovery----- | 405 | 410 |
| No recovery----- | 410 | 415 |
| Sandstone, very fine, gray; minor light-gray carbonaceous siltstone----- | 415 | 420 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone----- | 420 | 425 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone----- | 425 | 430 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone----- | 430 | 435 |
| Siltstone, light-gray; minor black carbonaceous shale; trace dark-gray carbonaceous siltstone----- | 435 | 440 |

Drill-hole W-NH-7-CD- continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, light-gray; minor black carbonaceous shale; trace dark-gray carbonaceous siltstone----- | 440 | 445 |
| Siltstone, light-gray; minor black carbonaceous shale; trace dark-gray carbonaceous siltstone; trace coal----- | 445 | 450 |
| Siltstone, light-gray; minor black carbonaceous shale; trace dark-gray carbonaceous siltstone; trace coal----- | 450 | 455 |
| Siltstone, light-gray; minor black carbonaceous shale; trace dark-gray carbonaceous siltstone; trace coal----- | 455 | 460 |
| Sandstone, very fine, gray; minor dark-gray siltstone; carbonaceous shale----- | 460 | 465 |
| Sandstone, very fine, gray; minor dark-gray siltstone; carbonaceous shale----- | 465 | 470 |
| Sandstone, very fine, gray; minor dark-gray siltstone; carbonaceous shale----- | 470 | 475 |
| Sandstone, very fine, gray; minor dark-gray siltstone; carbonaceous shale; minor gray sandy siltstone----- | 475 | 480 |
| Sandstone, very fine, gray; minor dark-gray siltstone; carbonaceous shale; minor gray sandy siltstone; trace coal----- | 480 | 485 |
| Sandstone, very fine, gray; minor dark-gray siltstone; carbonaceous shale; minor gray sandy siltstone; trace coal----- | 485 | 490 |

Drill-hole W-NH-7-CD- continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, sandy, gray; minor dark-gray slightly carbonaceous siltstone----- | 490 | 495 |
| Siltstone, sandy, gray; minor dark-gray slightly carbonaceous siltstone----- | 495 | 500 |
| Siltstone, sandy, gray; minor dark-gray slightly carbonaceous siltstone----- | 500 | 505 |
| Siltstone, sandy, gray; minor dark-gray slightly carbonaceous siltstone; minor carbonaceous shale----- | 505 | 510 |
| Siltstone, sandy, gray; minor dark-gray slightly carbonaceous siltstone; minor carbonaceous shale----- | 510 | 515 |
| Siltstone, sandy, gray; minor dark-gray slightly carbonaceous siltstone; minor carbonaceous shale----- | 515 | 520 |
| Siltstone, sandy, gray; minor dark-gray slightly carbonaceous siltstone; minor carbonaceous shale; trace coal----- | 520 | 525 |
| Siltstone, sandy, gray; minor dark-gray slightly carbonaceous siltstone; minor carbonaceous shale; trace coal----- | 525 | 530 |
| Siltstone, sandy, gray; minor dark-gray slightly carbonaceous siltstone; minor carbonaceous shale; trace coal----- | 530 | 535 |
| Siltstone, sandy, gray; minor dark-gray slightly carbonaceous siltstone; minor carbonaceous shale; trace coal----- | 535 | 540 |
| Siltstone, sandy, gray; minor dark-gray slightly carbon- aceous siltstone; carbonaceous shale----- | 540 | 545 |

Drill-hole W-NH-7-CD- continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, sandy, gray; minor dark-gray slightly carbonaceous siltstone; carbonaceous shale----- | 545 | 550 |
| Siltstone, sandy, gray; minor dark-gray slightly carbonaceous siltstone; carbonaceous shale----- | 550 | 555 |
| Siltstone, sandy, gray; minor dark-gray slightly carbonaceous siltstone; carbonaceous shale----- | 555 | 560 |
| Siltstone, sandy, gray; minor dark-gray slightly carbonaceous siltstone; carbonaceous shale----- | 560 | 565 |
| Siltstone, carbonaceous, dark-gray; minor gray siltstone---- | 565 | 570 |
| Siltstone, carbonaceous, dark-gray; minor gray siltstone---- | 570 | 575 |
| Siltstone, carbonaceous, dark-gray; minor gray siltstone; minor gray, very fine sandstone----- | 575 | 580 |
| Siltstone, carbonaceous, dark-gray; minor gray siltstone; minor gray, very fine sandstone----- | 580 | 585 |
| Siltstone, carbonaceous, dark-gray; minor gray siltstone; minor gray, very fine sandstone; trace carbonaceous shale----- | 585 | 590 |
| Siltstone, carbonaceous, dark-gray; minor gray siltstone; minor gray, very fine sandstone; trace carbonaceous shale----- | 590 | 595 |
| Siltstone, carbonaceous, dark-gray; minor gray siltstone; minor gray, very fine sandstone; trace carbonaceous shale----- | 595 | 600 |

Drill-hole W-NH-7-CD- continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, carbonaceous, gray; minor dark-gray carbonaceous siltstone----- | 600 | 605 |
| Siltstone, carbonaceous, gray; minor dark-gray carbonaceous siltstone----- | 605 | 610 |
| Siltstone, carbonaceous, gray; minor dark-gray carbonaceous siltstone; trace light-gray shale----- | 610 | 615 |
| Siltstone, carbonaceous, gray; minor dark-gray carbonaceous siltstone----- | 615 | 620 |
| Siltstone, carbonaceous, gray; minor dark-gray carbonaceous siltstone----- | 620 | 625 |
| Siltstone, carbonaceous, gray; minor dark-gray carbonaceous siltstone----- | 625 | 630 |
| Siltstone, carbonaceous, gray; minor dark-gray carbonaceous siltstone----- | 630 | 635 |
| Siltstone, sandy, carbonaceous, dark-gray; minor gray-brown siltstone; trace pyrite----- | 635 | 640 |
| No recovery----- | 640 | 645 |
| Siltstone, sandy, dark-gray; minor gray sandy siltstone; coal----- | 645 | 650 |
| Siltstone, sandy, carbonaceous, dark-gray; minor gray, very fine sandstone----- | 650 | 655 |
| Siltstone, sandy, carbonaceous, dark-gray; minor gray, very fine sandstone----- | 655 | 660 |
| Siltstone, sandy, carbonaceous, dark-gray, minor gray, very fine sandstone----- | 660 | 665 |

Drill-hole W-NH-7-CD- continued

| <u>Lithologic description</u> | <u>From</u> | <u>To</u> |
|---|-------------|-----------|
| Siltstone, carbonaceous, dark-gray; minor gray very fine sandstone; trace coal----- | 665 | 670 |
| Siltstone, carbonaceous, dark-gray; minor gray very fine sandstone; trace coal----- | 670 | 675 |
| Siltstone, carbonaceous, dark-gray; minor gray very fine sandstone----- | 675 | 680 |
| Siltstone, carbonaceous, dark-gray; minor gray very fine sandstone----- | 680 | 685 |
| Siltstone, carbonaceous, dark-gray; minor gray very fine sandstone----- | 685 | 690 |
| Siltstone, carbonaceous, dark-gray; minor gray very fine sandstone----- | 690 | 695 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray shale; dark-gray carbonaceous shale----- | 695 | 700 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray shale; dark-gray carbonaceous shale----- | 700 | 705 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray shale; dark-gray carbonaceous shale; minor dark-gray carbonaceous siltstone----- | 705 | 710 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray shale; dark-gray carbonaceous shale; minor dark-gray carbonaceous siltstone; trace coal----- | 710 | 715 |
| Sandstone, carbonaceous, very fine, light-gray; minor black carbonaceous siltstone----- | 715 | 720 |

Drill-hole W-NH-7-CD- continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, carbonaceous, very fine, light-gray; minor black carbonaceous siltstone----- | 720 | 725 |
| Sandstone, carbonaceous, very fine, light-gray; minor black carbonaceous siltstone; carbonaceous shale----- | 725 | 730 |
| Siltstone, carbonaceous, gray; minor light-gray very fine sandstone; trace tan medium sandstone----- | 730 | 735 |
| Siltstone, carbonaceous, gray; minor light-gray very fine sandstone----- | 735 | 740 |
| Siltstone, carbonaceous, gray; minor light-gray very fine sandstone----- | 740 | 745 |
| Shale, carbonaceous, black; minor light-gray very fine sandstone; gray siltstone; trace coal----- | 745 | 750 |
| Shale, carbonaceous, black; minor light-gray very fine sandstone; gray siltstone; trace coal----- | 750 | 755 |
| Shale, carbonaceous, black; minor light-gray very fine sandstone; gray siltstone; trace coal----- | 755 | 760 |
| Shale, carbonaceous, black; minor light-gray very fine sandstone; gray siltstone; trace coal----- | 760 | 765 |
| Sandstone, very fine, light-gray; minor gray medium carbonaceous sandstone; light-tan medium sandstone; carbonaceous siltstone; trace coal----- | 765 | 770 |
| Coal; minor gray siltstone; trace light-gray very fine sandstone----- | 770 | 775 |

Drill-hole W-NH-7-CD- continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor dark-gray carbonaceous siltstone; coal; trace tan medium sandstone----- | 775 | 780 |
| Sandstone, very fine, light-gray; minor dark-gray carbonaceous siltstone; coal; trace tan medium sandstone----- | 780 | 785 |
| Sandstone, very fine, light-gray; minor dark-gray carbonaceous siltstone; coal; trace tan medium sandstone----- | 785 | 790 |
| Sandstone, very fine, light-gray; minor gray carbonaceous siltstone; black carbonaceous siltstone----- | 790 | 795 |
| Sandstone, very fine, light-gray; minor gray, carbonaceous siltstone; black carbonaceous siltstone----- | 795 | 800 |
| Sandstone, very fine, light-gray; minor gray carbonaceous siltstone; black carbonaceous siltstone; trace coal----- | 800 | 805 |
| Sandstone, very fine, light-gray; minor gray, carbonaceous siltstone; black carbonaceous siltstone; trace minor coal----- | 805 | 810 |
| Sandstone, very fine, light-gray; minor gray carbonaceous siltstone; black carbonaceous siltstone; trace coal----- | 810 | 815 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray siltstone; trace tan medium sandstone----- | 815 | 820 |
| Siltstone, carbonaceous, gray; minor light-gray very fine sandstone----- | 820 | 825 |
| Siltstone, carbonaceous, gray; minor light-gray very fine sandstone----- | 825 | 830 |
| Siltstone, carbonaceous, gray; minor light-gray very fine sandstone----- | 830 | 835 |

Drill-hole W-NH-7-CD- continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, carbonaceous, gray; minor light-gray very fine sandstone----- | 835 | 840 |
| Siltstone, carbonaceous, gray; minor light-gray very fine sandstone----- | 840 | 845 |
| Siltstone, carbonaceous, gray; minor light-gray very fine sandstone; minor light-tan medium sandstone; trace coal--- | 845 | 850 |
| Siltstone, carbonaceous, gray; minor light-gray very fine sandstone; trace coal----- | 850 | 855 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray carbonaceous siltstone; coal----- | 855 | 860 |
| Sandstone, carbonaceous, very fine, light-gray; minor dark-gray carbonaceous siltstone; trace gray medium sandstone; coal; pyrite----- | 860 | 865 |
| Sandstone, carbonaceous, very fine, light-gray; minor dark-gray carbonaceous siltstone; trace coal----- | 865 | 870 |
| Sandstone, carbonaceous, very fine, light-gray; minor dark-gray carbonaceous siltstone; trace coal----- | 870 | 875 |
| Sandstone, carbonaceous, very fine, light-gray; minor dark-gray carbonaceous siltstone; trace coal----- | 875 | 880 |
| Sandstone, carbonaceous, very fine, light-gray; minor dark-gray carbonaceous siltstone; trace coal----- | 880 | 885 |
| Sandstone, carbonaceous, very fine, light-gray; minor dark-gray carbonaceous siltstone; trace coal----- | 885 | 890 |

Drill-hole W-NH-7-CD- continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Coal; minor light-gray fine sandstone; gray carbonaceous siltstone----- | 890 | 895 |
| Coal; minor light-gray fine sandstone; gray carbonaceous siltstone----- | 895 | 900 |
| Sandstone, carbonaceous, fine, light-gray; minor black carbonaceous siltstone; light-tan medium sandstone; coal-- | 900 | 905 |
| Sandstone, carbonaceous, fine, light-gray; minor black carbonaceous siltstone; light-tan medium sandstone; coal-- | 905 | 910 |
| Sandstone, carbonaceous, fine, light-gray; minor black carbonaceous siltstone; light-tan medium sandstone; coal-- | 910 | 915 |
| Sandstone, very fine, light-gray; minor black carbonaceous siltstone; trace coal----- | 915 | 920 |
| Sandstone, very fine, light-gray; minor black carbonaceous siltstone; trace coal----- | 920 | 925 |
| Sandstone, very fine, light-gray; minor black carbonaceous siltstone; minor coal; yellow medium sandstone----- | 925 | 930 |
| Sandstone, very fine, light-gray; minor black carbonaceous siltstone; minor coal; yellow medium sandstone----- | 930 | 935 |
| Sandstone, very fine, light-gray; minor black carbonaceous siltstone; minor coal; yellow medium sandstone----- | 935 | 940 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray siltstone; black carbonaceous siltstone; trace coal----- | 940 | 945 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray siltstone; black carbonaceous siltstone; trace coal----- | 945 | 950 |

Drill-hole W-NH-7-CD- continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, carbonaceous, very fine, light-gray; minor gray siltstone; black carbonaceous siltstone; trace coal----- | 950 | 955 |
| No recovery----- | 955 | 960 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray siltstone; black carbonaceous siltstone; trace coal----- | 960 | 965 |
| Sandstone, very fine, light-gray; minor gray siltstone; dark-gray carbonaceous siltstone; trace coal----- | 965 | 970 |
| Sandstone, very fine, light-gray; minor gray siltstone; dark-gray carbonaceous siltstone; trace coal----- | 970 | 975 |
| Sandstone, very fine, light-gray; minor gray siltstone; dark-gray carbonaceous siltstone----- | 975 | 980 |
| Sandstone, very fine, light-gray; minor gray siltstone; dark-gray carbonaceous siltstone----- | 980 | 985 |
| Sandstone, very fine, gray; minor gray siltstone; trace dark-gray carbonaceous siltstone----- | 985 | 990 |
| Sandstone, very fine, gray; minor gray siltstone; trace dark-gray carbonaceous siltstone----- | 990 | 995 |
| Sandstone, very fine, gray; minor gray siltstone; trace dark-gray carbonaceous siltstone----- | 995 | 1,000 |
| Sandstone, very fine, gray; minor gray siltstone; trace dark-gray carbonaceous siltstone----- | 1,000 | 1,005 |
| Sandstone, very fine, gray; minor gray siltstone; trace dark-gray carbonaceous siltstone----- | 1,005 | 1,010 |

Drill-hole W-NH-7-CD- continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, sandy, gray; minor dark-gray carbonaceous siltstone; trace coal----- | 1,010 | 1,015 |
| Siltstone, sandy, gray; minor dark-gray carbonaceous siltstone; trace coal----- | 1,015 | 1,020 |
| Siltstone, sandy, gray; minor dark-gray carbonaceous siltstone; trace coal----- | 1,020 | 1,025 |
| Sandstone, very fine, light-gray; minor carbonaceous shale; trace dark-gray carbonaceous siltstone; coal----- | 1,025 | 1,030 |
| Sandstone, very fine, light-gray; minor carbonaceous shale; trace dark-gray carbonaceous siltstone; coal----- | 1,030 | 1,035 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; trace yellow-brown fine sandstone; coal----- | 1,035 | 1,040 |
| Sandstone, very fine, light-gray; trace dark-gray carbonaceous siltstone----- | 1,040 | 1,045 |
| Sandstone, very fine, light-gray; trace dark-gray carbonaceous siltstone----- | 1,045 | 1,050 |
| Sandstone, very fine, light-gray; trace dark-gray carbonaceous siltstone----- | 1,050 | 1,055 |
| Sandstone, very fine, light-gray; trace dark-gray carbonaceous siltstone----- | 1,055 | 1,060 |
| Sandstone, very fine, light-gray; trace dark-gray carbonaceous siltstone----- | 1,060 | 1,065 |
| Sandstone, very fine, light-gray; trace gray-brown siltstone; dark-gray carbonaceous siltstone----- | 1,065 | 1,070 |

Drill-hole W-NH-7-CD- continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; trace gray-brown siltstone; dark-gray carbonaceous siltstone----- | 1,070 | 1,075 |
| Sandstone, very fine, light-gray; trace brown siltstone; gray siltstone;----- | 1,075 | 1,080 |
| Sandstone, very fine, light-gray; trace brown siltstone; gray siltstone----- | 1,080 | 1,085 |
| Sandstone, very fine, light-gray; trace brown siltstone; gray siltstone----- | 1,085 | 1,090 |
| Sandstone, very fine, light-gray; trace brown siltstone; gray siltstone----- | 1,090 | 1,095 |
| Sandstone, very fine, light-gray; trace brown siltstone; gray siltstone----- | 1,095 | 1,100 |
| Total depth sampled - 1,100 ft. | | |

Drill-hole W-TP-1-AL

S 7 1/4 NW 1/4 sec. 20, T. 21 S., R. 5 E., Salt Lake Principal Meridian, Acord Lakes quadrangle, Sevier County, Utah; collar elevation 8,300 ft; begun October 29, 1966, completed November 5, 1976; sampled by L. F. Blanchard, J. V. Roberts, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine to medium, gray to yellow----- | 0 | 155 |
| Sandstone, coarse, light-brown; minor carbonaceous shale---- | 155 | 160 |
| No recovery----- | 160 | 200 |
| Sandstone, fine, gray; minor dark-gray shale----- | 200 | 205 |
| Sandstone, fine, gray; minor dark-gray shale----- | 205 | 210 |
| Sandstone, fine, gray; minor dark-gray shale----- | 210 | 215 |
| Sandstone, fine, gray; minor dark-gray shale----- | 215 | 220 |
| Sandstone, fine, gray; minor dark-gray shale----- | 220 | 225 |
| Sandstone, fine to medium, light-gray----- | 225 | 230 |
| Sandstone, fine to medium, light-gray----- | 230 | 235 |
| Sandstone, fine to medium, light-gray----- | 235 | 240 |
| No recovery----- | 240 | 245 |
| Sandstone, fine, gray; minor gray shale----- | 245 | 250 |
| Shale, gray----- | 250 | 255 |
| Shale, gray----- | 255 | 260 |
| No recovery----- | 260 | 265 |
| Siltstone, sandy, gray----- | 265 | 270 |
| No recovery----- | 270 | 275 |

Drill-hole W-TP-1-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| No recovery----- | 275 | 280 |
| Sandstone, very fine, gray----- | 280 | 285 |
| Sandstone, very fine, gray----- | 285 | 290 |
| No recovery----- | 290 | 295 |
| Sandstone, fine, gray; minor dark-gray siltstone----- | 295 | 300 |
| Siltstone, dark-gray; minor gray shale----- | 300 | 305 |
| Siltstone, dark-gray; minor gray shale; minor carbonaceous shale----- | 305 | 310 |
| Siltstone, dark-gray; minor gray shale; minor carbonaceous shale----- | 310 | 315 |
| Siltstone, dark-gray; minor gray shale; minor carbonaceous shale----- | 315 | 320 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; gray shale----- | 320 | 325 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; gray shale----- | 325 | 330 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; gray shale----- | 330 | 335 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; gray shale----- | 335 | 340 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; gray shale----- | 340 | 345 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; gray shale----- | 345 | 350 |

Drill-hole W-TP-1-AL - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; gray shale; trace gray fine sandstone----- | 350 | 355 |
| Siltstone, carbonaceous, dark-gray; minor gray very fine sandstone; gray siltstone----- | 355 | 360 |
| Siltstone, carbonaceous, dark-gray; minor gray very fine sandstone; gray siltstone----- | 360 | 365 |
| Siltstone, carbonaceous dark-gray; minor gray very fine sandstone; gray siltstone; trace carbonaceous shale----- | 365 | 370 |
| Sandstone, medium, gray; minor carbonaceous siltstone; carbonaceous shale; white shale----- | 370 | 375 |
| Sandstone, medium, gray; minor carbonaceous siltstone; carbonaceous shale; white shale----- | 375 | 380 |
| Sandstone, medium, gray; minor carbonaceous siltstone; carbonaceous shale; white shale----- | 380 | 385 |
| Sandstone, medium, gray; minor carbonaceous siltstone; carbonaceous shale; white shale----- | 385 | 390 |
| Coal; minor carbonaceous shale; trace gray medium sandstone- | 390 | 395 |
| Siltstone, carbonaceous, dark-gray; minor light-gray fine sandstone; trace coal; carbonaceous shale----- | 395 | 400 |
| Siltstone, carbonaceous, dark-gray; minor light-gray fine sandstone; trace carbonaceous shale----- | 400 | 405 |
| Shale, gray; minor gray carbonaceous siltstone----- | 405 | 410 |
| Shale, gray; minor gray carbonaceous siltstone; minor light- gray siltstone----- | 410 | 415 |

Drill-hole W-TP-1-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray, minor gray carbonaceous siltstone; minor light-gray siltstone----- | 415 | 420 |
| Sandstone, carbonaceous, fine, gray; minor dark-gray siltstone; dark-gray shale----- | 420 | 425 |
| Sandstone, carbonaceous, fine, gray; minor dark-gray siltstone; dark-gray shale; minor white shale----- | 425 | 430 |
| Coal; minor light-gray fine sandstone; gray siltstone; white shale----- | 430 | 435 |
| Coal; minor light-gray fine sandstone; gray siltstone; white shale; minor orange medium sandstone----- | 435 | 440 |
| Shale, carbonaceous, dark-gray; minor light-gray very fine sandstone; gray siltstone----- | 440 | 445 |
| Sandstone, very fine, light-gray; minor gray siltstone; dark-gray carbonaceous shale; trace white shale----- | 445 | 450 |
| Sandstone, very fine, light-gray; minor gray siltstone; dark-gray carbonaceous shale; trace white shale----- | 450 | 455 |
| Sandstone, very fine, light-gray; minor gray siltstone; dark-gray carbonaceous shale; trace white shale----- | 455 | 460 |
| Shale, carbonaceous, dark-gray; trace gray siltstone; gray very fine sandstone----- | 460 | 465 |
| Shale, carbonaceous, dark-gray; trace gray siltstone; gray very fine sandstone----- | 465 | 470 |
| Sandstone, very fine, light-gray; minor gray siltstone; dark-gray carbonaceous shale; trace coal----- | 470 | 475 |

Drill-hole #V-TP-1-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor gray siltstone; dark-gray carbonaceous shale; trace coal----- | 475 | 480 |
| Shale, white; minor light-gray very fine sandstone; gray siltstone; dark-gray carbonaceous shale; trace coal----- | 480 | 485 |
| Shale, white; minor light-gray very fine sandstone; gray siltstone; dark-gray carbonaceous shale; trace coal----- | 485 | 490 |
| Sandstone, very fine, gray; minor white shale; black carbonaceous siltstone; trace dark-gray carbonaceous shale----- | 490 | 495 |
| Sandstone, very fine, gray; minor white shale; black carbonaceous siltstone; trace dark-gray carbonaceous shale----- | 495 | 500 |
| Sandstone, carbonaceous, very fine, gray; minor gray siltstone; white shale; gray carbonaceous shale----- | 500 | 505 |
| Shale, white; minor gray carbonaceous very fine sandstone; trace dark-gray carbonaceous shale----- | 505 | 510 |
| Shale, gray; minor dark-gray carbonaceous shale; light-gray very fine sandstone; trace white shale----- | 510 | 515 |
| Shale, gray; minor dark-gray carbonaceous shale; light-gray very fine sandstone; trace white shale----- | 515 | 520 |
| Sandstone, very fine, light-gray; minor gray siltstone; dark-gray carbonaceous shale; trace dark-gray carbonaceous siltstone----- | 520 | 525 |

Drill-hole W-TP-1-AL - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, carbonaceous, very fine, light-gray; trace black carbonaceous shale; dark-gray carbonaceous siltstone----- | 525 | 530 |
| Sandstone, carbonaceous, very fine, light-gray; trace black carbonaceous shale; dark-gray carbonaceous siltstone; minor white shale----- | 530 | 535 |
| Shale, white; minor gray very fine carbonaceous sandstone; gray siltstone; trace dark-gray carbonaceous shale----- | 535 | 540 |
| Shale, white; minor gray very fine carbonaceous sandstone; gray siltstone; trace dark-gray carbonaceous shale----- | 540 | 545 |
| Shale, white; minor gray very fine carbonaceous sandstone; gray siltstone; trace dark-gray carbonaceous shale----- | 545 | 550 |
| Sandstone, carbonaceous, very fine, light-gray; minor white shale; black carbonaceous siltstone----- | 550 | 555 |
| Sandstone, carbonaceous, very fine, light-gray; minor white shale; black carbonaceous siltstone----- | 555 | 560 |
| Shale, gray; minor light-gray very fine sandstone----- | 560 | 565 |
| Sandstone, fine, light-gray; minor gray shale; dark-gray carbonaceous shale----- | 565 | 570 |
| Sandstone, fine, light-gray; minor gray shale; dark-gray carbonaceous shale; minor black carbonaceous siltstone---- | 570 | 575 |
| Shale, white; minor gray medium sandstone; trace black carbonaceous shale----- | 575 | 580 |
| Sandstone, carbonaceous, medium, gray; minor white shale; trace coal----- | 580 | 585 |

Drill-hole W-TP-1-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, carbonaceous, medium, gray; minor white shale; trace coal----- | 585 | 590 |
| Sandstone, very fine, light-gray; minor gray siltstone; dark- gray shale----- | 590 | 595 |
| Shale, gray; minor dark-gray carbonaceous shale; light- gray very fine sandstone; gray siltstone; trace coal----- | 595 | 600 |
| Shale, gray; minor dark-gray carbonaceous shale; light- gray very fine sandstone; gray siltstone; trace coal----- | 600 | 605 |
| Shale, white; minor gray shale; dark-gray very fine sand- stone; dark-gray carbonaceous shale----- | 605 | 610 |
| Shale, white; minor gray shale; dark-gray very fine sand- stone; dark-gray carbonaceous shale----- | 610 | 615 |
| Sandstone, very fine, light-gray; minor gray siltstone; dark-gray carbonaceous shale; trace tan shale----- | 615 | 620 |
| Sandstone, very fine, light-gray; minor gray siltstone; dark-gray carbonaceous shale; trace tan shale----- | 620 | 625 |
| Sandstone, very fine, light-gray; minor gray siltstone; dark-gray carbonaceous shale; trace tan shale----- | 625 | 630 |
| Siltstone, gray; minor light-gray very fine sandstone; dark-gray siltstone----- | 630 | 635 |
| Siltstone, gray; minor light-gray very fine sandstone; dark-gray siltstone; minor carbonaceous shale----- | 635 | 640 |
| Siltstone, gray; minor light-gray very fine sandstone; dark-gray siltstone; minor carbonaceous shale----- | 640 | 645 |

Drill-hole W-TP-1-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; minor light-gray very fine sandstone; dark-gray siltstone; minor carbonaceous shale----- | 645 | 650 |
| Siltstone, gray; minor light-gray very fine sandstone; dark-gray siltstone; minor carbonaceous shale----- | 650 | 655 |
| Shale, gray; minor dark-gray carbonaceous siltstone; trace gray very fine sandstone----- | 655 | 660 |
| Shale, gray; minor gray very fine carbonaceous sandstone; dark-gray carbonaceous siltstone; white shale----- | 660 | 665 |
| Siltstone, gray; minor gray fine sandstone; gray shale; carbonaceous shale----- | 665 | 670 |
| Siltstone, gray; minor gray fine sandstone; gray shale; carbonaceous shale----- | 670 | 675 |
| Sandstone, fine, light-gray; minor gray siltstone; trace dark-gray carbonaceous shale----- | 675 | 680 |
| Sandstone, fine, light-gray; minor gray siltstone; trace dark-gray carbonaceous shale----- | 680 | 685 |
| Sandstone, fine, light-gray; minor gray siltstone; trace dark-gray carbonaceous shale----- | 685 | 690 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone----- | 690 | 695 |
| Siltstone, gray; minor light-gray very fine carbonaceous siltstone----- | 695 | 700 |
| Siltstone, gray; minor light-gray very fine carbonaceous siltstone----- | 700 | 705 |

Drill-hole W-TP-1-AL - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor gray siltstone; trace white shale; black carbonaceous siltstone----- | 705 | 710 |
| Sandstone, very fine, gray; minor gray siltstone; trace white shale; black carbonaceous siltstone----- | 710 | 715 |
| Shale, white; minor light-gray very fine sandstone; dark-gray carbonaceous siltstone----- | 715 | 720 |
| Siltstone, gray; minor light-gray very fine sandstone; white shale; trace dark-gray siltstone----- | 720 | 725 |
| Siltstone, gray; minor light-gray very fine sandstone; white shale; trace dark-gray siltstone----- | 725 | 730 |
| Siltstone, gray; minor light-gray very fine sandstone; white shale; trace dark-gray siltstone----- | 730 | 735 |
| Shale, white; minor gray siltstone----- | 735 | 740 |
| Shale, white; minor gray siltstone----- | 740 | 745 |
| Shale, white; minor gray siltstone; minor carbonaceous shale----- | 745 | 750 |
| Sandstone, very fine, gray; minor light-gray shale; gray siltstone; trace tan shale----- | 750 | 755 |
| Siltstone, sandy, gray; minor carbonaceous siltstone; gray very fine sandstone; trace white shale----- | 755 | 760 |
| Siltstone, sandy, gray; minor carbonaceous siltstone; gray very fine sandstone; trace white shale----- | 760 | 765 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous siltstone; dark-gray carbonaceous shale; gray shale----- | 205 765 | 770 |

Drill-hole W-TP-1-AL - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor dark-gray carbonaceous siltstone; dark-gray carbonaceous shale; gray shale; minor gray siltstone----- | 770 | 775 |
| Sandstone, very fine, light-gray; minor dark-gray carbonaceous siltstone; dark-gray carbonaceous shale; gray shale; minor gray siltstone; trace light-orange very fine sandstone---- | 775 | 780 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor dark-gray carbonaceous siltstone; trace light gray shale----- | 780 | 785 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor dark-gray carbonaceous siltstone; trace light-gray shale; minor gray shale----- | 785 | 790 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor dark-gray carbonaceous siltstone; trace light-gray shale; minor gray shale----- | 790 | 795 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor dark-gray carbonaceous siltstone; trace light-gray shale; minor gray shale----- | 795 | 800 |
| Siltstone, sandy, gray; minor dark-gray carbonaceous shale; gray very fine sandstone----- | 800 | 805 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; light-gray very fine sandstone; gray shale----- | 805 | 810 |
| Siltstone, sandy, gray; minor light-gray shale; light-gray very fine sandstone----- | 810 | 815 |

Drill-hole W-TP-1-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, sandy, gray; minor light-gray shale; light-gray very fine sandstone----- | 815 | 820 |
| Shale, bentonitic, light-gray; minor gray siltstone; trace dark-gray carbonaceous siltstone----- | 820 | 825 |
| Shale, bentonitic, light-gray; minor gray siltstone; trace dark-gray carbonaceous siltstone; trace gray shale----- | 825 | 830 |
| Shale, bentonitic, light-gray; minor gray siltstone; trace dark-gray carbonaceous siltstone; trace gray shale----- | 830 | 835 |
| Shale, white; minor gray fine sandstone; gray siltstone---- | 835 | 840 |
| Shale, white; minor gray fine sandstone; gray siltstone---- | 840 | 845 |
| Shale, white; minor gray fine sandstone; gray siltstone; minor carbonaceous shale----- | 845 | 850 |
| Shale, white; minor gray fine sandstone; gray siltstone---- | 850 | 855 |
| Shale, gray-brown; minor gray siltstone----- | 855 | 860 |
| Shale, gray-brown; minor gray siltstone; trace carbon- aceous shale----- | 860 | 865 |
| Siltstone, gray; minor gray shale; trace carbonaceous shale----- | 865 | 870 |
| Siltstone, gray; minor gray shale; trace carbonaceous shale----- | 870 | 875 |
| Sandstone, very fine, gray; minor gray siltstone----- | 875 | 880 |
| Sandstone, very fine, gray; minor gray siltstone----- | 880 | 885 |
| Sandstone, very fine, gray; minor gray siltstone; trace white shale----- | 885 | 890 |

Drill-hole W-TP-1-AL - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, sandy, gray; trace white shale----- | 890 | 895 |
| Siltstone, sandy, gray; trace white shale----- | 895 | 900 |
| Sandstone, very fine, gray; minor white shale; trace carbonaceous shale----- | 900 | 905 |
| Siltstone, gray; minor gray very fine sandstone; trace gray shale----- | 905 | 910 |
| Siltstone, gray; minor gray very fine sandstone; trace gray shale----- | 910 | 915 |
| Sandstone, very fine, gray; trace carbonaceous shale----- | 915 | 920 |
| Sandstone, very fine, gray; trace carbonaceous shale; trace white shale----- | 920 | 925 |
| Sandstone, very fine, gray; trace carbonaceous shale; trace white shale----- | 925 | 930 |
| Sandstone, very fine, gray; trace carbonaceous shale; trace white shale; trace coal----- | 930 | 935 |
| Sandstone, very fine, gray; trace white shale; gray siltstone----- | 935 | 940 |
| Sandstone, very fine, gray; trace white shale; gray siltstone----- | 940 | 945 |
| Sandstone, very fine, gray; trace white shale; gray siltstone; trace coal----- | 945 | 950 |
| Sandstone, very fine, gray; minor white shale; trace carbonaceous shale----- | 950 | 955 |

Drill-hole W-TP-1-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor white shale; trace carbonaceous shale----- | 955 | 960 |
| Sandstone, very fine, gray; minor white shale; trace carbonaceous shale----- | 960 | 965 |
| Siltstone, gray; minor gray very fine sandstone----- | 965 | 970 |
| Siltstone, gray; minor gray very fine sandstone; trace gray shale----- | 970 | 975 |
| No recovery----- | 975 | 980 |
| No recovery----- | 980 | 985 |
| No recovery----- | 985 | 990 |
| Siltstone, carbonaceous, dark-gray; minor gray shale----- | 990 | 995 |
| Total depth sampled - 995 ft. | | |

Drill-hole W-TP-2-EW

NW¼NE¼ sec. 28, T. 21 S., R. 5 E., Salt Lake Principal Meridian, Emery West quadrangle, Sevier County, Utah; collar elevation 8,480 ft; begun October 29, 1976, completed November 1, 1976; sampled by L. F. Blanchard, J. V. Roberts, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| No recovery----- | 0 | 5 |
| Sandstone, fine to medium, gray, white, yellow----- | 5 | 240 |
| Sandstone, fine, gray; minor gray siltstone----- | 240 | 245 |
| Sandstone, fine, gray; minor gray siltstone----- | 245 | 250 |
| Sandstone, fine, gray; minor gray siltstone; minor dark- gray siltstone----- | 250 | 255 |
| Sandstone, fine, gray; minor gray siltstone; minor dark- gray siltstone----- | 255 | 260 |
| Sandstone, fine, gray; minor gray siltstone; minor dark- gray siltstone----- | 260 | 265 |
| Siltstone, sandy, gray----- | 265 | 270 |
| Siltstone, sandy, gray; minor gray shale----- | 270 | 275 |
| Siltstone, sandy, gray; minor gray shale----- | 275 | 280 |
| Siltstone, sandy, gray; minor gray shale----- | 280 | 285 |
| Shale, gray; minor dark-gray siltstone; trace carbonaceous shale----- | 285 | 290 |
| Sandstone, fine, gray; trace gray siltstone----- | 290 | 295 |
| Sandstone, fine, gray; trace gray siltstone----- | 295 | 300 |

Drill-hole W-TP-2-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray----- | 300 | 305 |
| Sandstone, very fine, gray----- | 305 | 310 |
| Sandstone, very fine, gray----- | 310 | 315 |
| Sandstone, very fine, gray----- | 315 | 320 |
| Sandstone, very fine, gray----- | 320 | 325 |
| Sandstone, very fine, light-gray; trace gray siltstone----- | 325 | 330 |
| Sandstone, very fine, light-gray; trace gray siltstone----- | 330 | 335 |
| Sandstone, very fine, light-gray; trace gray siltstone----- | 335 | 340 |
| Siltstone, sandy, gray----- | 340 | 345 |
| Siltstone, sandy, gray----- | 345 | 350 |
| Siltstone, sandy, gray----- | 350 | 355 |
| Siltstone, sandy, gray----- | 355 | 360 |
| Siltstone, sandy, gray; minor carbonaceous shale----- | 360 | 365 |
| Siltstone, sandy, gray; minor carbonaceous shale----- | 365 | 370 |
| Siltstone, sandy, gray----- | 370 | 375 |
| Sandstone, very fine, gray----- | 375 | 380 |
| Sandstone, very fine, gray----- | 380 | 385 |
| Sandstone, very fine, gray----- | 385 | 390 |
| Sandstone, very fine, gray; trace white shale----- | 390 | 395 |
| Sandstone, very fine, gray; trace white shale----- | 395 | 400 |
| Sandstone, very fine, gray; trace white shale----- | 400 | 405 |
| Sandstone, very fine, gray; trace white shale----- | 405 | 410 |
| Sandstone, fine, gray; minor gray siltstone----- | 410 | 415 |
| Sandstone, fine, gray; minor gray siltstone----- | 415 | 420 |

Drill-hole W-TP-2-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray; minor gray siltstone----- | 420 | 425 |
| No recovery----- | 425 | 430 |
| Sandstone, fine, gray----- | 430 | 435 |
| No recovery----- | 435 | 440 |
| No recovery----- | 440 | 445 |
| No recovery----- | 445 | 450 |
| Siltstone, gray; trace dark-gray siltstone; white shale---- | 450 | 455 |
| Siltstone, gray; trace dark-gray siltstone; white shale---- | 455 | 460 |
| Siltstone, gray; trace dark-gray siltstone; white shale; trace carbonaceous shale----- | 460 | 465 |
| Siltstone, gray; trace dark-gray siltstone; white shale; trace carbonaceous shale----- | 465 | 470 |
| No recovery----- | 470 | 545 |
| Sandstone, fine, gray----- | 545 | 550 |
| Sandstone, fine, gray----- | 550 | 555 |
| Sandstone, fine, gray----- | 555 | 560 |
| Sandstone, fine, gray----- | 560 | 565 |
| Sandstone, fine, gray----- | 565 | 570 |
| Sandstone, fine, gray----- | 570 | 575 |
| No recovery----- | 575 | 580 |
| Sandstone, fine, gray----- | 580 | 585 |
| Sandstone, fine, gray; trace gray siltstone----- | 585 | 590 |
| Sandstone, fine, gray; trace gray siltstone----- | 590 | 595 |

Drill-hole W-TP-2-EW - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray; trace gray siltstone----- | 595 | 600 |
| Sandstone, fine, gray; trace gray siltstone----- | 600 | 605 |
| Sandstone, fine, gray; trace gray siltstone----- | 605 | 610 |
| Sandstone, fine, gray; trace gray siltstone----- | 610 | 615 |
| Sandstone, fine, gray; trace gray siltstone; trace white shale----- | 615 | 620 |
| No recovery----- | 620 | 625 |
| No recovery----- | 625 | 630 |
| Sandstone, fine, gray; trace white shale----- | 630 | 635 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; trace white shale----- | 635 | 640 |
| Sandstone, fine to medium, gray; minor dark-gray, carbon- aceous siltstone----- | 640 | 645 |
| Shale, carbonaceous, dark-gray; minor light-gray----- | 645 | 650 |
| Siltstone, gray; trace black carbonaceous shale----- | 650 | 655 |
| Siltstone, gray; trace black carbonaceous shale----- | 655 | 660 |
| Siltstone, gray; trace black carbonaceous shale----- | 660 | 665 |
| Sandstone, fine to medium, gray----- | 665 | 670 |
| Siltstone, light-gray; trace carbonaceous shale----- | 670 | 675 |
| Siltstone, carbonaceous, brown; minor light-gray siltstone- | 675 | 680 |
| Siltstone, gray; minor white shale----- | 680 | 685 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone---- | 685 | 690 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone---- | 690 | 695 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone---- | 695 | 700 |

Drill-hole W-TP-2-EW - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; minor dark-gray carbonaceous siltstone---- | 700 | 705 |
| Siltstone, gray----- | 705 | 710 |
| No recovery----- | 710 | 715 |
| Sandstone, very fine, gray----- | 715 | 720 |
| Siltstone, gray; minor gray shale; trace white shale----- | 720 | 725 |
| No recovery----- | 725 | 730 |
| No recovery----- | 730 | 735 |
| Siltstone, gray; minor black carbonaceous shale----- | 735 | 740 |
| No recovery----- | 740 | 745 |
| Sandstone, very fine, gray; minor gray siltstone----- | 745 | 750 |
| Sandstone, very fine, gray; minor gray siltstone; minor carbonaceous shale----- | 750 | 755 |
| No recovery----- | 755 | 815 |
| Siltstone, gray----- | 815 | 820 |
| Sandstone, fine, gray----- | 820 | 825 |
| Siltstone, gray; minor white shale; trace carbonaceous shale----- | 825 | 830 |
| Siltstone, gray; minor white shale; trace carbonaceous shale----- | 830 | 835 |
| No recovery----- | 835 | 840 |
| No recovery----- | 840 | 845 |
| No recovery----- | 845 | 850 |
| No recovery----- | 850 | 855 |
| Siltstone, dark-gray; minor light-gray siltstone; trace carbonaceous shale----- | 855 | 860 |

Drill-hole W-TP-2-EW - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, dark-gray; minor light-gray siltstone; trace carbonaceous shale----- | 860 | 865 |
| Siltstone, dark-gray; minor light-gray siltstone; trace carbonaceous shale----- | 865 | 870 |
| Siltstone, dark-gray; minor light-gray siltstone; trace carbonaceous shale----- | 870 | 875 |
| Siltstone, gray----- | 875 | 880 |
| Siltstone, gray----- | 880 | 885 |
| Siltstone, gray; minor black carbonaceous shale----- | 885 | 890 |
| Siltstone, gray----- | 890 | 895 |
| Siltstone, gray; trace carbonaceous shale; gray shale----- | 895 | 900 |
| Shale, gray; minor carbonaceous shale----- | 900 | 905 |
| Shale, gray; minor carbonaceous shale----- | 905 | 910 |
| Siltstone, gray; trace carbonaceous shale----- | 910 | 915 |
| Siltstone, gray----- | 915 | 920 |
| Siltstone, gray----- | 920 | 925 |
| Siltstone, gray; trace black carbonaceous shale----- | 925 | 930 |
| Siltstone, gray; trace black carbonaceous shale----- | 930 | 935 |
| Shale, bentonitic, gray----- | 935 | 940 |
| Shale, bentonitic, gray; minor gray siltstone----- | 940 | 945 |
| Shale, bentonitic, gray; minor gray siltstone----- | 945 | 950 |
| Shale, bentonitic, gray----- | 950 | 955 |
| Shale, bentonitic, gray----- | 955 | 960 |

Drill-hole W-TP-2-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; trace white shale; carbonaceous shale----- | 960 | 965 |
| Siltstone, gray; trace white shale; carbonaceous shale----- | 965 | 970 |
| Shale, bentonitic, gray----- | 970 | 975 |
| Shale, bentonitic, gray----- | 975 | 980 |
| Siltstone, gray----- | 980 | 985 |
| Siltstone, dark-gray----- | 985 | 990 |
| No recovery----- | 990 | 995 |
| No recovery----- | 995 | 1,000 |
| No recovery----- | 1,000 | 1,005 |
| Siltstone, dark-gray----- | 1,005 | 1,010 |
| No recovery----- | 1,010 | 1,015 |
| Total depth sampled - 1,015 ft. | | |

Drill-hole W-TP-3-EW

NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 23, T. 21 S., R. 5 E., Salt Lake Principal Meridian, Emery West quadrangle, Sevier County, Utah; collar elevation 8,650 ft; begun October 30, 1976, abandoned November 1, 1976; sampled by L. F. Blanchard, J. V. Roberts, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine to medium, white to yellow to orange----- | 0 | 190 |
| Sandstone, fine, gray; minor white shale; trace coal----- | 190 | 195 |
| Sandstone, fine, gray; minor white shale----- | 195 | 200 |
| Siltstone, carbonaceous, dark-gray; minor gray very fine sandstone----- | 200 | 205 |
| Siltstone, carbonaceous, dark-gray; minor gray very fine sandstone----- | 205 | 210 |
| Siltstone, gray; minor dark-gray siltstone----- | 210 | 215 |
| Siltstone, gray; minor dark-gray siltstone----- | 215 | 220 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone----- | 220 | 225 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone----- | 225 | 230 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone; trace gray siltstone----- | 230 | 235 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone; yellow fine sandstone----- | 235 | 240 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone; yellow fine sandstone----- | 240 | 245 |
| Siltstone, carbonaceous, sandy, dark-gray; minor gray fine sandstone----- | 245 | 250 |

Drill-hole W-TP-3-EW - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, carbonaceous, sandy, dark-gray; minor gray fine sandstone----- | 250 | 255 |
| Sandstone, very fine, yellow-gray; minor carbonaceous siltstone; trace light-gray very fine sandstone----- | 255 | 260 |
| No recovery----- | 260 | 265 |
| Sandstone, very fine, yellow-gray; minor carbonaceous siltstone; trace light-gray very fine sandstone----- | 265 | 270 |
| Shale, carbonaceous; minor gray fine sandstone; trace coal----- | 270 | 275 |
| Shale, carbonaceous; minor gray fine sandstone; trace coal----- | 275 | 280 |
| Sandstone, very fine, light-gray; minor carbonaceous siltstone----- | 280 | 285 |
| Sandstone, very fine, light-gray; minor carbonaceous siltstone----- | 285 | 290 |
| Sandstone, very fine, light-gray; minor carbonaceous siltstone; trace carbonaceous shale----- | 290 | 295 |
| Sandstone, very fine, light-gray; minor carbonaceous siltstone----- | 295 | 300 |
| Siltstone, slightly carbonaceous, sandy, gray; trace coal-- | 300 | 305 |
| Siltstone, gray; trace gray sandy carbonaceous siltstone--- | 305 | 310 |
| Siltstone, gray; trace gray sandy carbonaceous siltstone; trace gray very fine sandstone----- | 310 | 315 |

Drill-hole W-TP-3-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray; trace dark-gray carbonaceous siltstone----- | 315 | 320 |
| Sandstone, fine, gray; trace dark-gray carbonaceous siltstone----- | 320 | 325 |
| Sandstone, fine, gray; trace dark-gray carbonaceous siltstone----- | 325 | 330 |
| Sandstone, fine, gray; trace dark-gray carbonaceous siltstone; trace coal----- | 330 | 335 |
| Sandstone, very fine, gray; minor gray siltstone; dark- gray carbonaceous siltstone----- | 335 | 340 |
| Sandstone, very fine, gray; minor gray siltstone; dark- gray carbonaceous siltstone----- | 340 | 345 |
| Sandstone, very fine, gray; minor gray siltstone; dark- gray carbonaceous siltstone----- | 345 | 350 |
| Sandstone, very fine, gray; minor gray siltstone; dark- gray carbonaceous siltstone----- | 350 | 355 |
| Siltstone, carbonaceous, dark-gray; minor gray siltstone; trace gray very fine sandstone----- | 355 | 360 |
| Siltstone, carbonaceous, dark-gray; minor gray siltstone; trace gray very fine sandstone----- | 360 | 365 |
| Siltstone, carbonaceous, dark-gray; trace gray siltstone---- | 365 | 370 |
| Siltstone, carbonaceous, dark-gray; trace gray siltstone; trace coal----- | 370 | 375 |
| Sandstone, very fine, light-gray; minor gray siltstone; gray shale----- | 375 | 380 |

Drill-hole W-TP-3-EW - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor gray siltstone; gray shale----- | 380 | 385 |
| Sandstone, very fine, light-gray; minor gray siltstone; gray shale; trace dark-gray carbonaceous siltstone----- | 385 | 390 |
| Siltstone, gray; minor gray very fine sandstone; trace yellow very fine sandstone; coal----- | 390 | 395 |
| Siltstone, gray; minor gray very fine sandstone; trace yellow very fine sandstone; coal----- | 395 | 400 |
| Siltstone, gray----- | 400 | 405 |
| Siltstone, gray; trace yellow shale----- | 405 | 410 |
| Sandstone, very fine, gray; minor gray siltstone; trace yellow shale; coal----- | 410 | 415 |
| Sandstone, very fine, gray; minor gray siltstone; trace yellow shale; coal----- | 415 | 420 |
| Siltstone, gray; trace gray shale----- | 420 | 425 |
| Sandstone, very fine, gray; minor gray siltstone; trace coal----- | 425 | 430 |
| Sandstone, very fine, gray; minor gray siltstone----- | 430 | 435 |
| Sandstone, very fine, gray; minor gray siltstone----- | 435 | 440 |
| Sandstone, very fine, white; minor gray carbonaceous siltstone----- | 440 | 445 |
| Sandstone, very fine, white; minor gray carbonaceous siltstone----- | 445 | 450 |
| Sandstone, very fine, white; minor gray carbonaceous siltstone----- | 450 | 455 |

Drill-hole W-TP-3-EW - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; trace carbonaceous shale----- | 455 | 460 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; trace carbonaceous shale----- | 460 | 465 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone----- | 465 | 470 |
| Sandstone, fine, brown-gray; minor gray siltstone----- | 470 | 475 |
| Sandstone, fine, brown-gray; minor gray siltstone----- | 475 | 480 |
| Sandstone, fine, brown-gray; minor gray siltstone; trace carbonaceous shale----- | 480 | 485 |
| Sandstone, fine, brown-gray; minor gray siltstone; trace carbonaceous shale----- | 485 | 490 |
| Sandstone, very fine, white; trace carbonaceous shale; gray shale----- | 490 | 495 |
| Sandstone, very fine, white; trace carbonaceous shale; gray shale; trace coal----- | 495 | 500 |
| Siltstone, gray; minor white very fine sandstone----- | 500 | 505 |
| Siltstone, gray; minor white very fine sandstone----- | 505 | 510 |
| Siltstone, gray; minor white very fine sandstone; trace coal----- | 510 | 515 |
| Sandstone, very fine, light-gray; minor gray siltstone----- | 515 | 520 |
| Sandstone, very fine, light-gray; minor gray siltstone----- | 520 | 525 |
| Sandstone, very fine, light-gray; trace gray siltstone----- | 525 | 530 |
| Sandstone, very fine, light-gray; trace gray siltstone----- | 530 | 535 |
| Sandstone, very fine, yellow-white; minor gray shale; trace carbonaceous shale----- | 535 | 540 |

Drill-hole W-TP-3-EW - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, yellow-white; minor gray shale; trace carbonaceous shale; trace coal----- | 540 | 545 |
| Siltstone, gray; minor light-gray very fine sandstone; gray shale----- | 545 | 550 |
| Sandstone, very fine, light-gray; trace gray siltstone----- | 550 | 555 |
| Sandstone, very fine, light-gray; trace gray siltstone----- | 555 | 560 |
| Siltstone, sandy, gray; trace dark-gray carbonaceous siltstone----- | 560 | 565 |
| Siltstone, sandy, gray; trace dark-gray carbonaceous siltstone----- | 565 | 570 |
| Siltstone, sandy, gray; trace dark-gray; carbonaceous siltstone; trace of carbonaceous shale----- | 570 | 575 |
| Siltstone, gray; minor gray shale----- | 575 | 580 |
| Siltstone, gray; minor gray shale----- | 580 | 585 |
| Sandstone, very fine, gray; minor gray siltstone; trace carbonaceous shale----- | 585 | 590 |
| Sandstone, very fine, gray; minor gray siltstone; trace carbonaceous shale----- | 590 | 595 |
| Sandstone, very fine, gray; minor gray siltstone; trace carbonaceous shale; trace gray shale----- | 595 | 600 |
| Sandstone, very fine, white; trace gray siltstone----- | 600 | 605 |
| Sandstone, very fine, white; trace gray siltstone----- | 605 | 610 |
| Sandstone, very fine, white; trace gray siltstone; trace carbonaceous shale----- | 610 | 615 |

Drill-hole W-TP-3-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; trace gray fine sandstone; yellow medium sandstone; coal; red-brown fine sandstone----- | 615 | 620 |
| Siltstone, gray; trace gray fine sandstone; yellow medium sandstone; coal; red-brown fine sandstone----- | 620 | 625 |
| Siltstone, gray; trace gray fine sandstone; yellow medium sandstone; coal; red-brown fine sandstone----- | 625 | 630 |
| Sandstone, very fine, brown; trace yellow shale; carbonaceous shale; and gray siltstone----- | 630 | 635 |
| Sandstone, very fine, brown; trace yellow shale; carbonaceous shale; and gray siltstone; trace coal----- | 635 | 640 |
| Sandstone, very fine, light-gray; minor gray siltstone; trace dark-gray carbonaceous siltstone----- | 640 | 645 |
| Sandstone, very fine, light-brown; trace gray shale; carbonaceous shale; yellow shale----- | 645 | 650 |
| No recovery----- | 650 | 655 |
| No recovery----- | 655 | 660 |
| Siltstone, sandy, gray; minor light-gray very fine sandstone; trace carbonaceous shale----- | 660 | 665 |
| Siltstone, sandy, gray; minor light-gray very fine sandstone; trace carbonaceous shale----- | 665 | 670 |
| Sandstone, very fine, light-gray; minor gray siltstone----- | 670 | 675 |
| Sandstone, very fine, light-gray; minor gray siltstone----- | 675 | 680 |

Drill-hole W-TP-3-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor gray siltstone; trace yellow shale----- | 680 | 685 |
| No recovery----- | 685 | 690 |
| No recovery----- | 690 | 695 |
| No recovery----- | 695 | 700 |
| Sandstone, fine, gray; minor dark-gray carbonaceous silt- stone; yellow fine sandstone----- | 700 | 705 |
| Sandstone, fine, gray; minor dark-gray carbonaceous silt- stone; yellow fine sandstone; trace carbonaceous shale---- | 705 | 710 |
| Sandstone, fine, gray; minor dark-gray carbonaceous silt- stone yellow fine sandstone; trace carbonaceous shale---- | 710 | 715 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; trace carbonaceous shale----- | 715 | 720 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; trace carbonaceous shale----- | 720 | 725 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; trace carbonaceous shale----- | 725 | 730 |
| Siltstone, gray; minor light-gray fine sandstone; trace carbonaceous shale; yellow fine sandstone----- | 730 | 735 |
| Siltstone, gray; minor light-gray fine sandstone; trace carbonaceous shale; yellow fine sandstone----- | 735 | 740 |
| Siltstone, gray; minor light-gray fine sandstone; trace carbonaceous shale; yellow fine sandstone----- | 740 | 745 |
| Siltstone, gray, minor dark-gray carbonaceous siltstone; trace carbonaceous shale; light-gray fine sandstone----- | 745 | 750 |

Drill-hole W-TP-3-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; trace carbonaceous shale; light-gray fine sandstone----- | 750 | 755 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; trace carbonaceous shale; light-gray fine sandstone; trace coal----- | 755 | 760 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone; gray siltstone----- | 760 | 765 |
| Shale, gray; minor dark-gray siltstone; trace yellow medium sandstone----- | 765 | 770 |
| Shale, gray; minor dark-gray siltstone; trace yellow medium sandstone----- | 770 | 775 |
| Siltstone, sandy, gray; trace coal----- | 775 | 780 |
| Siltstone, sandy, gray----- | 780 | 785 |
| Siltstone, sandy, gray----- | 785 | 790 |
| Siltstone, sandy, gray; trace gray very fine sandstone----- | 790 | 795 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone----- | 795 | 800 |
| Siltstone, carbonaceous, dark-gray; minor gray siltstone; coal----- | 800 | 805 |
| Siltstone, carbonaceous dark-gray; minor gray siltstone; coal; minor gray very fine sandstone; trace pyrite----- | 805 | 810 |
| Siltstone, carbonaceous, dark-gray; minor gray siltstone; gray very fine sandstone; trace coal; pyrite----- | 810 | 815 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; coal----- | 815 | 820 |

Drill-hole W-TP-3-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; coal----- | 820 | 825 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; trace coal----- | 825 | 830 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; trace coal; minor coal----- | 830 | 835 |
| Siltstone, gray, minor dark-gray carbonaceous siltstone; trace coal; minor coal----- | 835 | 840 |
| Sandstone, very fine, gray; trace coal; dark-gray carbonaceous siltstone----- | 840 | 845 |
| Siltstone, gray; trace dark-gray carbonaceous siltstone----- | 845 | 850 |
| Siltstone, gray; trace dark-gray carbonaceous siltstone----- | 850 | 855 |
| Sandstone, very fine, gray; minor dark-gray siltstone; trace gray siltstone----- | 855 | 860 |
| Total depth sampled - 860 ft. | | |

Drill-hole W-TP-4-EW

SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 14, T. 21 S., R. 5 E., Salt Lake Principal Meridian, Emery West quadrangle, Sevier County, Utah; collar elevation 8,465 ft; begun November 1, 1976, completed November 7, 1976; sampled by L. F. Blanchard, J. V. Roberts, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| No recovery----- | 0 | 355 |
| Sandstone, medium, light-gray----- | 355 | 360 |
| Sandstone, medium, light-gray----- | 360 | 365 |
| Sandstone, medium, light-gray----- | 365 | 370 |
| Sandstone, fine, light-gray----- | 370 | 375 |
| Sandstone, fine, light-gray; minor light-gray medium sandstone----- | 375 | 380 |
| Sandstone, fine, light-gray; minor light-gray medium sandstone----- | 380 | 385 |
| Sandstone, fine, light-gray; minor light-gray medium sandstone----- | 385 | 390 |
| Sandstone, fine, light-gray; minor light-gray medium sandstone----- | 390 | 395 |
| Sandstone, fine, light-gray; minor light-gray medium sandstone; minor gray shale----- | 395 | 400 |
| Siltstone, carbonaceous, dark-gray; minor gray sandy siltstone----- | 400 | 405 |

Drill-hole W-TP-4-EW - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor gray carbonaceous siltstone; trace pyrite; coal----- | 405 | 410 |
| Sandstone, very fine, gray; minor gray carbonaceous siltstone; trace pyrite; coal; minor gray shale----- | 410 | 415 |
| Sandstone, very fine, gray; minor gray carbonaceous siltstone; trace pyrite; coal; minor gray shale----- | 415 | 420 |
| Sandstone, very fine, gray; minor gray carbonaceous siltstone; trace pyrite; coal; minor gray shale; minor gray siltstone----- | 420 | 425 |
| Sandstone, very fine, gray; minor gray carbonaceous siltstone; trace pyrite; coal; minor gray shale; minor gray siltstone----- | 425 | 430 |
| Sandstone, very fine, gray; minor gray carbonaceous siltstone; trace pyrite; coal; minor gray shale; minor gray siltstone----- | 430 | 435 |
| Sandstone, very fine, gray; minor gray carbonaceous siltstone; trace pyrite; coal; minor gray shale; minor gray siltstone----- | 435 | 440 |
| Sandstone, very fine, gray; minor gray carbonaceous siltstone; trace pyrite; coal; minor gray shale; minor gray siltstone----- | 440 | 445 |
| Sandstone, very fine, gray; minor gray carbonaceous siltstone; trace pyrite; coal; minor gray shale; minor gray siltstone----- | 445 | 450 |

Drill-hole W-TP-4-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor gray carbonaceous siltstone; trace pyrite; coal; minor gray shale; minor gray siltstone----- | 450 | 455 |
| Sandstone, very fine, gray; minor gray carbonaceous siltstone; trace pyrite; coal; minor gray shale; minor gray siltstone----- | 455 | 460 |
| Sandstone, very fine, gray; minor gray carbonaceous siltstone; trace pyrite; coal; minor gray shale; minor gray siltstone----- | 460 | 465 |
| Sandstone, very fine, gray; minor gray carbonaceous siltstone; trace pyrite; coal; minor gray shale; minor gray siltstone----- | 465 | 470 |
| Sandstone, very fine, gray; minor gray siltstone; trace black carbonaceous shale; pyrite; gray fine sandstone---- | 470 | 475 |
| Sandstone, very fine, gray; minor gray siltstone; trace black carbonaceous shale; pyrite; gray fine sandstone---- | 475 | 480 |
| Sandstone, very fine, gray; minor gray siltstone; trace black carbonaceous shale; pyrite; gray fine sandstone---- | 480 | 485 |
| Sandstone, very fine, gray; minor gray siltstone; trace black carbonaceous shale; pyrite; gray fine sandstone---- | 485 | 490 |
| Sandstone, very fine, gray; minor gray siltstone; coal----- | 490 | 495 |
| Sandstone, very fine, gray; minor gray siltstone; coal; trace pyrite----- | 495 | 500 |

Drill-hole W-TP-4-EW - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; minor dark-gray slightly carbonaceous siltstone; trace brown-red medium sandstone----- | 500 | 505 |
| Siltstone, gray; minor tan-gray carbonaceous siltstone; gray carbonaceous siltstone----- | 505 | 510 |
| Siltstone, gray; minor tan-gray carbonaceous siltstone; gray carbonaceous siltstone; trace coal----- | 510 | 515 |
| Siltstone, gray; minor tan-gray carbonaceous siltstone; gray carbonaceous siltstone----- | 515 | 520 |
| Siltstone, gray; minor dark-gray fine sandstone----- | 520 | 525 |
| Siltstone, gray; minor dark-gray fine sandstone; trace pyrite----- | 525 | 530 |
| Siltstone, gray; minor dark-gray fine sandstone; trace pyrite; trace coal----- | 530 | 535 |
| Siltstone, gray; minor dark-gray fine sandstone; trace pyrite; trace coal----- | 535 | 540 |
| Siltstone, gray; minor dark-gray fine sandstone; trace pyrite; trace coal----- | 540 | 545 |
| Siltstone, gray; minor dark-gray fine sandstone; trace pyrite; trace coal----- | 545 | 550 |
| Siltstone, gray; minor dark-gray fine sandstone; trace pyrite; trace coal; trace light-gray shale----- | 550 | 555 |
| Siltstone, gray; minor dark-gray fine sandstone; trace pyrite; coal----- | 555 | 560 |

Drill-hole W-TP-4-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; minor dark-gray fine sandstone; trace pyrite; coal----- | 560 | 565 |
| Sandstone, fine to medium, light-gray; minor gray siltstone; dark-gray carbonaceous siltstone; coal----- | 565 | 570 |
| Sandstone, fine to medium, light-gray; minor gray silt- stone; dark-gray carbonaceous siltstone; trace coal----- | 570 | 575 |
| Sandstone, fine to medium, light-gray; minor gray siltstone; dark-gray carbonaceous siltstone; coal----- | 575 | 580 |
| Sandstone, fine to medium, light-gray; minor gray siltstone; dark-gray carbonaceous siltstone----- | 580 | 585 |
| Siltstone, gray; minor gray very fine sandstone; trace coal; carbonaceous shale----- | 585 | 590 |
| Sandstone, very fine, gray; minor gray siltstone; dark- gray carbonaceous siltstone----- | 590 | 595 |
| Sandstone, very fine, gray; minor gray siltstone; dark- gray carbonaceous siltstone----- | 595 | 600 |
| Sandstone, very fine, gray; minor gray siltstone; dark- gray carbonaceous siltstone----- | 600 | 605 |
| Sandstone, slightly carbonaceous, fine, gray----- | 605 | 610 |
| Sandstone, slightly carbonaceous, fine, gray; trace tan siltstone----- | 610 | 615 |
| Sandstone, slightly carbonaceous, fine, gray; trace tan siltstone----- | 615 | 620 |

Drill-hole W-TP-4-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray; minor dark-gray carbonaceous shale; dark-gray carbonaceous siltstone; trace coal----- | 620 | 625 |
| Sandstone, fine, gray; minor dark-gray carbonaceous shale; dark-gray carbonaceous siltstone; trace coal; trace orange medium sandstone----- | 625 | 630 |
| Sandstone, fine, gray; minor dark-gray carbonaceous shale; dark-gray carbonaceous siltstone; trace coal; trace orange medium sandstone----- | 630 | 635 |
| Sandstone, fine, gray; minor dark-gray carbonaceous shale; dark-gray carbonaceous siltstone; trace coal; trace orange medium sandstone----- | 635 | 640 |
| Sandstone, fine, gray; minor dark-gray carbonaceous shale; dark-gray carbonaceous siltstone; trace coal; trace orange medium sandstone----- | 640 | 645 |
| Siltstone, gray; minor tan siltstone; dark-gray carbonaceous siltstone; gray very fine slightly carbonaceous siltstone-- | 645 | 650 |
| Siltstone, gray; minor tan siltstone; dark-gray carbonaceous siltstone; gray very fine slightly carbonaceous siltstone-- | 650 | 655 |
| Shale, carbonaceous; minor gray siltstone; gray very fine sandstone; coal----- | 655 | 660 |
| Shale, carbonaceous; minor gray siltstone; gray very fine sandstone; coal----- | 660 | 665 |
| Shale, carbonaceous; minor gray siltstone; gray very fine sandstone; trace coal----- | 665 | 670 |

Drill-hole W-TP-4-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; minor dark-gray carbonaceous shale; gray very fine sandstone; dark-gray very fine carbonaceous sandstone----- | 670 | 675 |
| Siltstone, gray; minor dark-gray carbonaceous shale; gray very fine sandstone; dark-gray very fine carbonaceous sandstone----- | 675 | 680 |
| Siltstone, gray; minor dark-gray carbonaceous shale; gray very fine sandstone; dark-gray very fine carbonaceous sandstone; trace coal----- | 680 | 685 |
| Siltstone, tan-gray; minor dark-gray carbonaceous shale; light-gray very fine sandstone; trace coal----- | 685 | 690 |
| Siltstone, tan-gray; minor dark-gray carbonaceous shale; light-gray very fine sandstone; trace coal----- | 690 | 695 |
| Siltstone, tan-gray; minor dark-gray carbonaceous shale; light-gray very fine sandstone; trace coal; trace orange- brown medium sandstone----- | 695 | 700 |
| Siltstone, tan-gray; minor dark-gray carbonaceous shale; light-gray very fine sandstone; trace coal; trace orange- brown medium sandstone; trace pyrite----- | 700 | 705 |
| Siltstone, tan-gray; minor dark-gray carbonaceous shale; light-gray very fine sandstone; trace coal; trace orange- brown medium sandstone; trace pyrite----- | 705 | 710 |

Drill-hole W-TP-4-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; dark-gray carbonaceous shale; trace tan siltstone----- | 710 | 715 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; dark-gray carbonaceous shale; trace tan siltstone----- | 715 | 720 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone; trace gray shale----- | 720 | 725 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone; trace gray shale----- | 725 | 730 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone; trace gray shale----- | 730 | 735 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone; trace gray shale----- | 735 | 740 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone; trace gray shale----- | 740 | 745 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; gray fine sandstone; trace coal----- | 745 | 750 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale; orange medium sandstone----- | 750 | 755 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale; orange medium sandstone; trace coal---- | 755 | 760 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale; orange medium sandstone; trace coal---- | 760 | 765 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale; orange medium sandstone; trace coal----- | 765 | 770 |

Drill-hole W-TP-4-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor coal; trace light-gray shale----- | 770 | 775 |
| Sandstone, very fine, gray; minor coal; trace light-gray shale----- | 775 | 780 |
| Sandstone, very fine, gray; minor coal; trace light-gray shale----- | 780 | 785 |
| Sandstone, very fine, gray; minor coal; trace light-gray shale; trace orange medium sandstone----- | 785 | 790 |
| Sandstone, very fine, gray; minor coal; trace light-gray shale; trace orange medium sandstone----- | 790 | 795 |
| Sandstone, very fine, gray; minor coal; trace light-gray shale; trace orange medium sandstone----- | 795 | 800 |
| Sandstone, very fine, gray; minor coal; trace light-gray shale; trace orange medium sandstone----- | 800 | 805 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone; trace coal----- | 805 | 810 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone; trace coal; trace orange medium sandstone----- | 810 | 815 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone; trace coal; trace orange medium sandstone----- | 815 | 820 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone; trace coal; trace orange medium sandstone----- | 820 | 825 |

Drill-hole W-TP-4-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone; trace coal; trace orange medium sandstone----- | 825 | 830 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; light-gray shale; tan shale; trace light-gray fine sand- stone; coal----- | 830 | 835 |
| Total depth sampled - 835 ft. | | |

Drill-hole W-TP-5-EW

SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 16, T. 21 S., R. 5 E., Salt Lake Principal Meridian, Emery West quadrangle, Sevier County, Utah; collar elevation 8,350 ft; begun November 4, 1976, completed November 7, 1976; sampled by L. F. Blanchard, J. V. Roberts, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine to medium, buff to light-gray----- | 0 | 5 |
| Sandstone, fine to medium, buff to light-gray----- | 5 | 200 |
| Sandstone, fine, yellow-gray; trace gray shale----- | 200 | 205 |
| Shale, gray; minor carbonaceous shale; trace yellow fine sandstone----- | 205 | 210 |
| Sandstone, fine, gray; trace carbonaceous shale----- | 210 | 215 |
| Sandstone, fine, gray; trace carbonaceous shale----- | 215 | 220 |
| Shale, gray; trace carbonaceous shale----- | 220 | 225 |
| Shale, gray; trace carbonaceous shale----- | 225 | 230 |
| Sandstone, fine, white----- | 230 | 235 |
| Sandstone, fine, white----- | 235 | 240 |
| No recovery----- | 240 | 245 |
| No recovery----- | 245 | 250 |
| No recovery----- | 250 | 255 |
| No recovery----- | 255 | 260 |
| Sandstone, fine, white----- | 260 | 265 |
| Siltstone, gray; minor light-gray shale----- | 265 | 270 |
| Shale, gray; minor carbonaceous shale----- | 270 | 275 |
| Shale, gray; minor carbonaceous shale----- | 275 | 280 |

Drill-hole W-TP-5-EW - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray----- | 280 | 285 |
| Shale, gray; light-gray siltstone----- | 285 | 290 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous siltstone; gray shale----- | 290 | 295 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous siltstone; gray shale----- | 295 | 300 |
| Siltstone, carbonaceous, dark-gray; minor gray very fine sandstone; trace gray shale----- | 300 | 305 |
| Siltstone, carbonaceous, dark-gray; minor gray very fine sandstone; trace gray shale----- | 305 | 310 |
| Sandstone, fine, gray; trace gray carbonaceous siltstone; gray shale----- | 310 | 315 |
| Sandstone, fine, gray; trace gray carbonaceous siltstone; gray shale; trace carbonaceous shale----- | 315 | 320 |
| Shale, gray; minor gray siltstone----- | 320 | 325 |
| Shale, gray; minor gray siltstone; minor dark-gray carbonaceous siltstone----- | 325 | 330 |
| Siltstone, sandy, light-gray----- | 330 | 335 |
| Siltstone, dark-gray; minor gray siltstone; trace pyrite---- | 335 | 340 |
| Siltstone, dark-gray; minor gray siltstone----- | 340 | 345 |
| Shale, carbonaceous, black; trace gray siltstone----- | 345 | 350 |
| Sandstone, very fine, gray; trace black carbonaceous shale--- | 350 | 355 |
| Shale, carbonaceous; trace gray very fine sandstone; coal---- | 355 | 360 |

Drill-hole W-TP-5-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, carbonaceous; trace gray very fine sandstone----- | 360 | 365 |
| Siltstone, carbonaceous, gray----- | 365 | 370 |
| Shale, gray; minor gray carbonaceous siltstone----- | 370 | 375 |
| Shale, gray; minor gray carbonaceous siltstone----- | 375 | 380 |
| Sandstone, very fine, gray; trace gray shale----- | 380 | 385 |
| Sandstone, very fine, gray; trace gray shale----- | 385 | 390 |
| Sandstone, very fine, gray; trace gray shale----- | 390 | 395 |
| Sandstone, fine, gray----- | 395 | 400 |
| Sandstone, fine, gray----- | 400 | 405 |
| Sandstone, fine, gray----- | 405 | 410 |
| Sandstone, fine, gray; minor carbonaceous shale----- | 410 | 415 |
| Siltstone, gray; trace coal----- | 415 | 420 |
| Siltstone, gray; trace coal----- | 420 | 425 |
| Shale, gray; minor carbonaceous shale----- | 425 | 430 |
| Shale, gray; minor carbonaceous shale; minor gray siltstone----- | 430 | 435 |
| Siltstone, gray; trace carbonaceous shale; white shale----- | 435 | 440 |
| Siltstone, gray; trace carbonaceous shale; white shale----- | 440 | 445 |
| No recovery----- | 445 | 450 |
| No recovery----- | 450 | 455 |
| No recovery----- | 455 | 460 |
| Sandstone, fine, gray; trace gray siltstone----- | 460 | 465 |
| Sandstone, fine, gray; trace gray siltstone----- | 465 | 470 |
| Sandstone, fine, gray; trace gray siltstone----- | 470 | 475 |

Drill-hole W-TP-5-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| No recovery----- | 475 | 480 |
| Sandstone, fine, light-gray; trace coal; gray shale----- | 480 | 485 |
| Sandstone, fine, light-gray; trace gray shale----- | 485 | 490 |
| Sandstone, fine, light-gray; trace gray shale----- | 490 | 495 |
| Sandstone, fine, light-gray; trace gray shale; trace carbonaceous shale----- | 495 | 500 |
| Sandstone, fine, light-gray; trace gray shale; trace carbonaceous shale----- | 500 | 505 |
| No recovery----- | 505 | 510 |
| Shale, gray; trace light-gray very fine sandstone----- | 510 | 515 |
| Shale, gray; trace light-gray very fine sandstone----- | 515 | 520 |
| Shale, gray; trace light-gray very fine sandstone----- | 520 | 525 |
| Shale, gray; minor gray siltstone----- | 525 | 530 |
| Shale, gray; minor gray siltstone; trace white shale----- | 530 | 535 |
| Shale, gray; minor gray siltstone; trace white shale----- | 535 | 540 |
| Shale, gray; minor gray siltstone; trace white shale----- | 540 | 545 |
| Shale, gray----- | 545 | 550 |
| Shale, gray----- | 550 | 555 |
| Shale, gray----- | 555 | 560 |
| Siltstone, gray----- | 560 | 565 |
| Siltstone, gray; trace carbonaceous shale----- | 565 | 570 |
| Siltstone, gray; trace carbonaceous shale----- | 570 | 575 |
| Siltstone, gray; trace carbonaceous shale; minor dark-gray carbonaceous siltstone----- | 575 | 580 |

Drill-hole W-TP-5-EW - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, light-gray; minor dark-gray carbonaceous siltstone---- | 580 | 585 |
| Shale, light-gray; minor dark-gray carbonaceous siltstone---- | 585 | 590 |
| Shale, gray; minor gray siltstone----- | 590 | 595 |
| Shale, light-gray; minor gray siltstone----- | 595 | 600 |
| Shale, light-gray; minor gray siltstone----- | 600 | 605 |
| No recovery----- | 605 | 610 |
| Shale, bentonitic, light-gray----- | 610 | 615 |
| No recovery----- | 615 | 620 |
| Sandstone, very fine, light-gray----- | 620 | 625 |
| Sandstone, very fine, gray----- | 625 | 630 |
| Sandstone, very fine, gray; trace light-gray shale----- | 630 | 635 |
| Shale, bentonitic, silty, gray----- | 635 | 640 |
| Sandstone, very fine, gray----- | 640 | 645 |
| Sandstone, very fine, gray; trace carbonaceous shale; white shale----- | 645 | 650 |
| Sandstone, very fine, gray; minor gray bentonitic shale----- | 650 | 655 |
| Sandstone, very fine, gray; minor gray bentonitic shale----- | 655 | 660 |
| Shale, gray----- | 660 | 665 |
| Shale, gray; trace carbonaceous shale----- | 665 | 670 |
| Shale, gray; trace carbonaceous shale----- | 670 | 675 |
| Shale, gray; trace carbonaceous shale; trace white shale----- | 675 | 680 |
| Shale, gray; trace carbonaceous shale; trace shite shale; trace coal----- | 680 | 685 |

Drill-hole W-TP-5-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, bentonitic, light-gray----- | 685 | 690 |
| Shale, gray----- | 690 | 695 |
| Sandstone, very fine, gray; minor gray shale----- | 695 | 700 |
| Shale, light-gray----- | 700 | 705 |
| Shale, gray----- | 705 | 710 |
| No recovery----- | 710 | 715 |
| Shale, gray----- | 715 | 720 |
| No recovery----- | 720 | 725 |
| Shale, light-gray----- | 725 | 730 |
| Siltstone, gray----- | 730 | 735 |
| Siltstone, gray----- | 735 | 740 |
| Siltstone, gray----- | 740 | 745 |
| Siltstone, light-gray----- | 745 | 750 |
| Siltstone, light-gray----- | 750 | 755 |
| Siltstone, light-gray----- | 755 | 760 |
| Siltstone, light-gray----- | 760 | 765 |
| Siltstone, light-gray; trace coal----- | 765 | 770 |
| Siltstone, light-gray----- | 770 | 775 |
| Sandstone, very fine, light-gray----- | 775 | 780 |
| Sandstone, very fine, light-gray; trace carbonaceous shale--- | 780 | 785 |
| Siltstone, gray----- | 785 | 790 |
| Sandstone, very fine, gray----- | 790 | 795 |
| Shale, gray; minor gray very fine sandstone; trace tan shale; coal----- | 795 | 800 |

Drill-hole W-TP-5-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor gray very fine sandstone; trace tan shale; coal; minor gray siltstone----- | 800 | 805 |
| Shale, gray; minor gray very fine sandstone; trace tan shale; coal; minor gray siltstone----- | 805 | 810 |
| Shale, gray; minor gray siltstone; trace gray very fine sandstone; tan shale; coal----- | 810 | 815 |
| Sandstone, very fine, gray; trace coal; gray shale----- | 815 | 820 |
| No recovery----- | 820 | 825 |
| Shale, gray; minor gray very fine sandstone; trace tan shale; white shale; coal----- | 825 | 830 |
| Shale, gray; minor gray very fine sandstone; trace tan shale; white shale; coal----- | 830 | 835 |
| Shale, gray; minor gray very fine sandstone; dark-gray carbonaceous shale----- | 835 | 840 |
| Shale, gray; minor gray very fine sandstone; dark-gray carbonaceous shale; minor white shale; trace coal----- | 840 | 845 |
| Shale, gray; minor gray very fine sandstone; dark-gray carbonaceous shale; minor white shale; trace coal----- | 845 | 850 |
| Shale, gray; minor gray very fine sandstone; dark-gray carbonaceous shale; minor white shale; trace coal; minor tan shale----- | 850 | 855 |
| No recovery----- | 855 | 860 |

Drill-hole W-TP-5-EW - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor gray very fine sandstone; dark-gray carbonaceous shale; white shale; tan shale; trace coal----- | 860 | 865 |
| Shale, gray; minor gray very fine sandstone; dark-gray carbonaceous shale; white shale; tan shale; trace coal; minor gray siltstone----- | 865 | 870 |
| Shale, gray; minor gray very fine sandstone; dark-gray carbonaceous shale; white shale; tan shale; trace coal; minor gray siltstone----- | 870 | 875 |
| Shale, gray; minor dark-gray carbonaceous shale; gray very fine sandstone; tan shale----- | 875 | 880 |
| Shale, carbonaceous, brown; minor dark-gray carbonaceous shale; trace gray very fine sandstone----- | 880 | 885 |
| No recovery----- | 885 | 890 |
| Sandstone, very fine, gray; minor gray shale; dark-gray carbonaceous shale----- | 890 | 895 |
| Sandstone, very fine, gray; minor gray shale; dark-gray carbonaceous shale----- | 895 | 900 |
| Sandstone, very fine, gray; minor gray shale; dark-gray carbonaceous shale----- | 900 | 905 |
| No recovery----- | 905 | 910 |
| Shale, gray; minor gray very fine sandstone; dark-gray carbonaceous shale; trace white shale; tan shale----- | 910 | 915 |
| Shale, gray; minor gray very fine sandstone; dark-gray carbonaceous shale; trace white shale; tan shale----- | 915 | 920 |

Drill-hole W-TP-5-EW - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| No recovery----- | 920 | 925 |
| Shale, gray; minor coal; tan shale; trace white shale----- | 925 | 930 |
| No recovery----- | 930 | 935 |
| No recovery----- | 935 | 940 |
| Shale, gray; minor coal; tan shale; trace white shale----- | 940 | 945 |
| No recovery----- | 945 | 950 |
| Sandstone, very fine, gray; minor gray shale; dark-gray carbonaceous shale; trace white shale; coal----- | 950 | 955 |
| Sandstone, very fine, gray; minor gray shale; dark-gray carbonaceous shale; trace white shale; coal----- | 955 | 960 |
| Sandstone, very fine, gray; minor gray shale; dark-gray carbonaceous shale; trace white shale----- | 960 | 965 |
| Sandstone, very fine, gray; minor gray shale; dark-gray carbonaceous shale; trace white shale; trace coal----- | 965 | 970 |
| Sandstone, very fine, gray; minor gray shale; dark-gray carbonaceous shale; trace white shale; trace coal----- | 970 | 975 |
| Total depth sampled - 975 ft. | | |

Drill-hole W-TP-6-FP

SE 1/4 sec. 9, T. 21 S., R. 5 E., Salt Lake Principal Meridian, Flagstaff Peak quadrangle, Sevier County, Utah; collar elevation 8,350 ft; begun November 5, 1976, abandoned November 10, 1976; sampled by L. F. Blanchard, J. V. Roberts, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Soil----- | 0 | 5 |
| Soil----- | 5 | 10 |
| Sandstone, fine, light-yellow----- | 10 | 15 |
| Sandstone, fine, light-yellow; minor light-brown mudstone---- | 15 | 20 |
| Sandstone, fine, light-yellow; minor light-brown mudstone---- | 20 | 25 |
| Sandstone, fine, brown; minor dark-brown mudstone----- | 25 | 30 |
| Sandstone, fine to very fine, gray----- | 30 | 35 |
| Sandstone, fine to very fine, gray; trace coal----- | 35 | 40 |
| Sandstone, coarse, buff; minor carbonaceous shale; trace coal----- | 40 | 45 |
| Sandstone, coarse, salmon; minor light-yellow coarse sandstone----- | 45 | 50 |
| Sandstone, coarse, salmon----- | 50 | 55 |
| Sandstone, fine, buff; minor light-yellow fine sandstone---- | 55 | 60 |
| Sandstone, fine, yellow----- | 60 | 65 |
| Sandstone, fine, yellow----- | 65 | 70 |
| Sandstone, fine, yellow; trace salmon coarse sandstone----- | 70 | 75 |
| Sandstone, fine, light-pink----- | 75 | 80 |

Drill-hole W-TP-6-FP - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, white----- | 80 | 85 |
| Sandstone, fine, yellow; minor white fine sandstone----- | 85 | 90 |
| Sandstone, fine, yellow; minor white fine sandstone----- | 90 | 95 |
| Sandstone, fine, tan----- | 95 | 100 |
| Sandstone, fine, yellow----- | 100 | 105 |
| Sandstone, fine, yellow----- | 105 | 110 |
| Sandstone, fine, yellow----- | 110 | 115 |
| Sandstone, fine, yellow----- | 115 | 120 |
| Sandstone, fine, yellow----- | 120 | 125 |
| Sandstone, fine, yellow----- | 125 | 130 |
| Sandstone, fine, yellow----- | 130 | 135 |
| Sandstone, fine, yellow----- | 135 | 140 |
| Sandstone, fine, orange----- | 140 | 145 |
| Sandstone, fine, tan----- | 145 | 150 |
| Sandstone, fine, tan; minor yellow fine sandstone----- | 150 | 155 |
| Sandstone, fine, yellow----- | 155 | 160 |
| Sandstone, fine, yellow----- | 160 | 165 |
| Sandstone, fine, yellow----- | 165 | 170 |
| Sandstone, fine, yellow----- | 170 | 175 |
| Sandstone, fine, yellow----- | 175 | 180 |
| Sandstone, medium, yellow----- | 180 | 185 |
| Sandstone, medium, yellow----- | 185 | 190 |
| Sandstone, fine, yellow-tan----- | 190 | 200 |
| Sandstone, fine, yellow-tan----- | 200 | 205 |

Drill-hole W-TP-6-FP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, yellow-tan----- | 205 | 210 |
| Sandstone, fine, yellow----- | 210 | 215 |
| Sandstone, fine, white----- | 215 | 220 |
| Sandstone, fine, white----- | 220 | 225 |
| Sandstone, medium, tan----- | 225 | 230 |
| Sandstone, very fine, tan; minor carbonaceous siltstone----- | 230 | 235 |
| Sandstone, fine, light-brown----- | 235 | 240 |
| Sandstone, fine, dark-gray----- | 240 | 245 |
| Sandstone, fine, dark-gray----- | 245 | 250 |
| Sandstone, fine, gray; minor carbonaceous shale----- | 250 | 255 |
| Sandstone, very fine, gray; minor gray siltstone----- | 255 | 260 |
| Sandstone, very fine, gray; minor gray siltstone----- | 260 | 265 |
| Sandstone, fine, light-gray----- | 265 | 270 |
| Sandstone, fine, light-gray----- | 270 | 275 |
| Sandstone, medium to coarse, light-gray; minor carbonaceous siltstone; trace coal----- | 275 | 280 |
| Sandstone, medium, light-gray----- | 280 | 285 |
| Shale, carbonaceous----- | 285 | 290 |
| Sandstone, very fine, gray; minor gray siltstone----- | 290 | 295 |
| Shale, carbonaceous, dark-gray; minor gray very fine sandstone----- | 295 | 300 |
| Shale, gray; minor gray siltstone----- | 300 | 305 |
| Siltstone, gray----- | 305 | 310 |
| Sandstone, very fine, gray----- | 310 | 315 |

Drill-hole W-TP-6-FP - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray----- | 315 | 320 |
| Sandstone, very fine, gray----- | 320 | 325 |
| Sandstone, very fine, gray----- | 325 | 330 |
| Sandstone, very fine, gray; minor gray siltstone----- | 330 | 335 |
| Sandstone, fine, gray; minor carbonaceous siltstone----- | 335 | 340 |
| Sandstone, very fine, gray; minor carbonaceous siltstone---- | 340 | 345 |
| Sandstone, very fine, gray; minor carbonaceous siltstone----- | 345 | 350 |
| Sandstone, very fine, gray----- | 350 | 355 |
| Sandstone, very fine, gray----- | 355 | 360 |
| Sandstone, very fine, gray; minor dark-gray siltstone----- | 360 | 365 |
| Sandstone, very fine, gray; minor gray siltstone----- | 365 | 370 |
| Sandstone, fine to very fine, gray----- | 370 | 375 |
| Siltstone, gray----- | 375 | 380 |
| Sandstone, very fine, gray----- | 380 | 385 |
| Sandstone, fine, gray----- | 385 | 390 |
| Sandstone, fine, gray----- | 390 | 395 |
| Sandstone, fine, gray----- | 395 | 400 |
| Sandstone, fine, gray----- | 400 | 405 |
| Sandstone, fine, gray; trace coal; carbonaceous shale----- | 405 | 410 |
| Sandstone, fine, gray----- | 410 | 415 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone----- | 415 | 420 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone----- | 420 | 425 |

Drill-hole W-TP-6-FP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, carbonaceous, dark-gray; minor gray fine sand- stone; trace coal----- | 425 | 430 |
| Siltstone, carbonaceous, dark-gray; minor gray fine sand- stone; trace coal----- | 430 | 435 |
| Siltstone, carbonaceous, dark-gray; minor gray fine sand- stone; trace coal----- | 435 | 440 |
| Siltstone, carbonaceous, dark-gray; minor gray fine sand- stone; trace coal----- | 440 | 445 |
| Siltstone, carbonaceous, dark-gray; minor gray fine sand- stone; trace coal----- | 445 | 450 |
| Sandstone, very fine, gray----- | 450 | 455 |
| Sandstone, very fine, gray----- | 455 | 460 |
| Sandstone, very fine, gray----- | 460 | 465 |
| Sandstone, fine, gray----- | 465 | 470 |
| Sandstone, fine, dark-gray----- | 470 | 475 |
| Sandstone, fine, light-gray; trace gray siltstone----- | 475 | 480 |
| Sandstone, fine, light-gray; trace gray siltstone----- | 480 | 485 |
| Sandstone, fine, brown----- | 485 | 490 |
| Sandstone, fine, light-brown----- | 490 | 495 |
| Sandstone, fine, light-brown----- | 495 | 500 |
| Sandstone, fine, light-gray----- | 500 | 505 |
| Sandstone, fine, light-gray----- | 505 | 510 |
| Sandstone, fine, light-gray; trace coal----- | 510 | 515 |

Drill-hole W-TP-6-FP - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, carbonaceous; minor gray very fine sandstone----- | 515 | 520 |
| Sandstone, very fine, light-gray; trace carbonaceous siltstone----- | 520 | 525 |
| Sandstone, very fine, light-gray----- | 525 | 530 |
| Sandstone, very fine, light-gray----- | 530 | 535 |
| Sandstone, very fine, light-gray----- | 535 | 540 |
| Sandstone, very fine, light-gray----- | 540 | 545 |
| Sandstone, fine, gray; minor gray siltstone; dark-gray carbonaceous siltstone----- | 545 | 550 |
| Sandstone, fine, gray; minor gray siltstone; dark-gray carbonaceous siltstone----- | 550 | 555 |
| Sandstone, fine, gray; minor gray siltstone; dark-gray carbonaceous siltstone----- | 555 | 560 |
| Sandstone, fine, gray; minor gray siltstone; dark-gray carbonaceous siltstone----- | 560 | 565 |
| Sandstone, fine, gray; minor gray siltstone; dark-gray carbonaceous siltstone----- | 565 | 570 |
| Sandstone, very fine, gray----- | 570 | 575 |
| Sandstone, very fine, gray; trace gray siltstone----- | 575 | 580 |
| Sandstone, fine, gray----- | 580 | 585 |
| Sandstone, fine, gray----- | 585 | 590 |
| Sandstone, fine, gray----- | 590 | 595 |
| Sandstone, fine, gray----- | 595 | 600 |
| Sandstone, fine, gray; trace coal----- | 600 | 605 |

Drill-hole W-TP-6-FP - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, carbonaceous; minor gray fine sandstone; coal----- | 605 | 610 |
| Siltstone, carbonaceous; minor gray fine sandstone; coal----- | 610 | 615 |
| Siltstone, carbonaceous; minor gray fine sandstone; coal----- | 615 | 620 |
| Sandstone, fine, gray; minor gray carbonaceous shale; trace coal----- | 620 | 625 |
| Sandstone, fine, gray----- | 625 | 630 |
| Sandstone, fine, gray----- | 630 | 635 |
| Sandstone, fine, gray----- | 635 | 640 |
| Sandstone, fine, gray----- | 640 | 645 |
| Sandstone, fine, gray----- | 645 | 650 |
| Sandstone, fine, gray----- | 650 | 655 |
| Sandstone, fine, gray; minor gray carbonaceous siltstone----- | 655 | 660 |
| Sandstone, fine, gray; minor gray carbonaceous siltstone----- | 660 | 665 |
| Sandstone, fine, gray----- | 665 | 670 |
| Sandstone, fine, gray----- | 670 | 675 |
| Sandstone, fine, gray----- | 675 | 680 |
| Sandstone, fine, gray----- | 680 | 685 |
| Sandstone, fine, gray----- | 685 | 690 |
| Sandstone, fine, gray----- | 690 | 695 |
| Sandstone, fine, gray; minor gray carbonaceous siltstone----- | 695 | 700 |
| Sandstone, fine, gray; minor gray carbonaceous siltstone----- | 700 | 705 |
| Sandstone, very fine, gray; minor gray carbonaceous siltstone | 705 | 710 |
| Sandstone, fine, gray; minor gray carbonaceous siltstone----- | 710 | 715 |
| Sandstone, fine, gray; minor gray carbonaceous siltstone----- | 715 | 720 |

Drill-hole W-TP-6-FP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray----- | 720 | 725 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone----- | 725 | 730 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone; trace coal----- | 730 | 735 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone----- | 735 | 740 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone----- | 740 | 745 |
| Total depth sampled - 745 ft. | | |

Drill-hole W-OWP-1-OWP

NE¼NW¼ sec. 27, T. 23 S., R. 4 E., Salt Lake Principal Meridian, Old Woman Plateau quadrangle, Sevier County, Utah; collar elevation 8,080 ft; begun October 18, 1976, completed October 19, 1976; sampled by J. V. Roberts and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Soil----- | 0 | 5 |
| Soil----- | 5 | 10 |
| Sandstone, fine, yellow-brown; minor brown-gray siltstone (weathered)----- | 10 | 15 |
| Sandstone, fine, yellow-brown; minor brown-gray siltstone (weathered)----- | 15 | 20 |
| Sandstone, very fine, olive-brown----- | 20 | 25 |
| Sandstone, very fine, olive-brown----- | 25 | 30 |
| Shale, carbonaceous, dark-gray; minor gray siltstone----- | 30 | 35 |
| Shale, carbonaceous; dark-gray; minor gray siltstone----- | 35 | 40 |
| Shale, gray; minor dark-gray carbonaceous shale----- | 40 | 45 |
| Shale, gray; minor dark-gray carbonaceous shale----- | 45 | 50 |
| Shale, gray----- | 50 | 55 |
| Sandstone, fine, light-gray----- | 55 | 60 |
| Sandstone, fine, light-gray----- | 60 | 65 |
| Sandstone, very fine, light-gray; minor light-gray siltstone----- | 65 | 70 |
| Shale, gray; minor dark-gray carbonaceous shale----- | 70 | 75 |
| Shale, gray; minor dark-gray carbonaceous shale----- | 75 | 80 |
| Shale, gray; minor dark-gray carbonaceous shale----- | 80 | 85 |

Drill-hole W-OWP-1-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor dark-gray carbonaceous shale----- | 85 | 90 |
| Sandstone, very fine, light-gray; minor dark-gray carbonaceous shale----- | 90 | 95 |
| Sandstone, very fine, light-gray----- | 95 | 100 |
| Sandstone, very fine, light-gray----- | 100 | 105 |
| Sandstone, very fine, light-gray; trace gray siltstone----- | 105 | 110 |
| Sandstone, very fine, light-gray; trace gray siltstone----- | 110 | 115 |
| Sandstone, very fine, light-gray; trace gray siltstone----- | 115 | 120 |
| Shale, carbonaceous, dark-gray; minor light-gray very fine sandstone----- | 120 | 125 |
| Shale, gray; minor gray siltstone; trace dark-gray carbonaceous shale----- | 125 | 130 |
| Shale, gray; minor gray siltstone; trace dark-gray carbonaceous shale----- | 130 | 135 |
| Shale, gray; minor gray siltstone----- | 135 | 140 |
| Shale, gray; minor gray siltstone----- | 140 | 145 |
| Siltstone, gray; minor gray very fine sandstone----- | 145 | 150 |
| Siltstone, gray; minor gray very fine sandstone; trace dark-gray shale----- | 150 | 155 |
| Shale, gray; minor dark-gray carbonaceous siltstone----- | 155 | 160 |
| Shale, gray; minor black carbonaceous shale----- | 160 | 165 |
| Shale, gray; minor black carbonaceous shale----- | 165 | 170 |
| Siltstone, carbonaceous, dark-gray; minor gray fine sand- stone; trace coal----- | 170 | 175 |

Drill-hole W-OWP-1-OWP - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, carbonaceous, dark-gray; minor gray fine sandstone; trace coal----- | 175 | 180 |
| Siltstone, carbonaceous, dark-gray; minor gray fine sandstone; trace coal; trace dark-gray shale----- | 180 | 185 |
| Siltstone; minor dark-gray shale; trace coal----- | 185 | 190 |
| Siltstone, dark-gray; minor gray very fine sandstone----- | 190 | 195 |
| Siltstone, dark-gray; minor gray very fine sandstone----- | 195 | 200 |
| Siltstone, dark-gray; minor gray very fine sandstone----- | 200 | 205 |
| Shale, dark-gray; minor gray sandy siltstone----- | 205 | 210 |
| Sandstone, very fine, slightly carbonaceous, gray----- | 210 | 215 |
| Sandstone, very fine, slightly carbonaceous, gray----- | 215 | 220 |
| Siltstone, carbonaceous, dark-gray----- | 220 | 225 |
| Siltstone, carbonaceous, dark-gray; trace coal----- | 225 | 230 |
| Siltstone, carbonaceous; dark-gray; trace coal----- | 230 | 235 |
| Siltstone, carbonaceous, dark-gray----- | 235 | 240 |
| Siltstone, carbonaceous, dark-gray; minor gray very fine sandstone; trace coal----- | 240 | 245 |
| Sandstone, carbonaceous, very fine, gray; trace coal; dark-gray carbonaceous siltstone----- | 245 | 250 |
| Sandstone, carbonaceous, very fine, gray; trace coal; dark-gray carbonaceous siltstone----- | 250 | 255 |
| Sandstone, very fine, gray; minor gray shale; trace coal----- | 255 | 260 |
| Sandstone, very fine, gray; minor gray shale; trace coal----- | 260 | 265 |
| Sandstone, very fine, gray; minor gray shale; trace coal----- | 265 | 270 |

Drill-hole W-OWP-1-OWP - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor gray shale; trace coal; trace dark-gray carbonaceous siltstone; light-gray bentonitic shale----- | 270 | 275 |
| Sandstone, carbonaceous, very fine, gray; minor gray sandy siltstone; light-gray bentonitic shale; trace coal----- | 275 | 280 |
| Sandstone, carbonaceous, very fine, gray; minor gray sandy siltstone; light-gray bentonitic shale; trace coal----- | 280 | 285 |
| Shale, gray; minor gray siltstone----- | 285 | 290 |
| Shale, gray; minor gray siltstone; minor dark-gray carbon- aceous shale----- | 290 | 295 |
| Shale, gray; minor gray siltstone; minor dark-gray carbon- aceous shale----- | 295 | 300 |
| Shale, gray; minor gray siltstone; minor dark-gray carbon- aceous shale; minor light-gray very fine sandstone----- | 300 | 305 |
| Shale, gray; minor gray siltstone; minor dark-gray carbon- aceous shale; minor light-gray very fine sandstone----- | 305 | 310 |
| Shale, gray; minor gray siltstone; minor dark-gray carbon- aceous shale; minor light-gray very fine sandstone----- | 310 | 315 |
| Shale, gray; minor gray siltstone; minor dark-gray carbon- aceous shale; minor light-gray very fine sandstone; trace coal----- | 315 | 320 |
| Shale, gray; minor gray siltstone; minor dark-gray carbon- aceous shale; minor light-gray very fine sandstone; trace coal----- | 320 | 325 |

Drill-hole W-OWP-1-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor gray siltstone; minor dark-gray carbonaceous shale; minor light-gray very fine sandstone; trace coal----- | 325 | 330 |
| Sandstone, carbonaceous, very fine, light-gray; minor black carbonaceous siltstone; dark-gray carbonaceous shale; trace coal----- | 330 | 335 |
| Shale, gray; minor black carbonaceous shale; light-gray very fine sandstone----- | 335 | 340 |
| Shale, gray; minor black carbonaceous shale; light-gray very fine sandstone----- | 340 | 345 |
| Shale, carbonaceous, black; minor dark-gray carbonaceous siltstone; gray very fine sandstone----- | 345 | 350 |
| Sandstone, carbonaceous, very fine, light-gray; minor dark-gray shale; dark-gray carbonaceous siltstone; black carbonaceous shale----- | 350 | 355 |
| Sandstone, carbonaceous, very fine, light-gray; minor dark-gray shale; dark-gray carbonaceous siltstone; black carbonaceous shale----- | 355 | 360 |
| Sandstone, carbonaceous, very fine, light-gray; minor dark-gray shale; dark-gray carbonaceous siltstone; black carbonaceous shale----- | 360 | 365 |
| Sandstone, carbonaceous, very fine, light-gray; minor black carbonaceous shale; gray siltstone----- | 365 | 370 |

Drill-hole W-OWP-1-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, carbonaceous, very fine, light-gray; minor black carbonaceous shale; gray siltstone----- | 370 | 375 |
| Sandstone, carbonaceous, very fine, light-gray; minor black carbonaceous shale; gray siltstone; minor light-gray medium sandstone----- | 375 | 380 |
| Sandstone, carbonaceous, very fine, light-gray; minor black carbonaceous shale; gray siltstone; minor dark-gray medium sandstone----- | 380 | 385 |
| No recovery----- | 385 | 390 |
| No recovery----- | 390 | 395 |
| No recovery----- | 395 | 400 |
| No recovery----- | 400 | 405 |
| Sandstone, very fine, light-gray; minor gray shale; dark-gray carbonaceous siltstone----- | 405 | 410 |
| Sandstone, very fine, light-gray; minor gray shale; dark-gray carbonaceous siltstone----- | 410 | 415 |
| Sandstone, very fine, light-gray; minor gray shale; dark-gray carbonaceous siltstone----- | 415 | 420 |
| Sandstone, very fine, light-gray; minor gray shale; dark-gray carbonaceous siltstone----- | 420 | 425 |
| Sandstone, very fine, light-gray; minor gray shale; dark-gray carbonaceous siltstone----- | 425 | 430 |
| Sandstone, very fine, light-gray; minor gray shale; dark-gray carbonaceous siltstone----- | 430 | 435 |

Drill-hole W-OWP-1-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| No recovery----- | 435 | 440 |
| No recovery----- | 440 | 445 |
| Siltstone, carbonaceous, gray; minor light-gray very fine sandstone; coal----- | 445 | 450 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray siltstone; dark-gray carbonaceous siltstone; trace coal---- | 450 | 455 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray siltstone; dark-gray carbonaceous siltstone; trace coal---- | 455 | 460 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray siltstone; dark-gray carbonaceous siltstone; trace coal---- | 460 | 465 |
| Coal; minor gray siltstone; dark-gray carbonaceous siltstone- | 465 | 470 |
| Coal; minor gray siltstone; dark-gray carbonaceous siltstone- | 470 | 475 |
| Shale, bentonitic, gray; minor gray very fine carbonaceous sandstone; trace coal----- | 475 | 480 |
| Siltstone, carbonaceous, gray; minor dark-gray carbonaceous siltstone; trace light-gray very fine sandstone; coal----- | 480 | 485 |
| Siltstone, carbonaceous, gray; minor dark-gray carbonaceous siltstone; trace light-gray very fine sandstone; coal----- | 485 | 490 |
| Siltstone, carbonaceous, gray; minor dark-gray carbonaceous siltstone; trace light-gray very fine sandstone; coal----- | 490 | 495 |
| Siltstone, carbonaceous, gray; minor dark-gray carbonaceous siltstone; trace light-gray very fine sandstone; coal----- | 495 | 500 |
| Siltstone, carbonaceous, gray; minor dark-gray carbonaceous siltstone; trace light-gray very fine sandstone; coal----- | 500 | 505 |

Drill-hole W-OWP-1-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, carbonaceous, gray; minor dark-gray carbonaceous siltstone; trace light-gray very fine sandstone; coal----- | 505 | 510 |
| Siltstone, carbonaceous, gray; minor dark-gray carbonaceous siltstone; trace light-gray very fine sandstone; coal----- | 510 | 515 |
| Siltstone, carbonaceous, gray; minor dark-gray carbonaceous siltstone; trace light-gray very fine sandstone; coal----- | 515 | 520 |
| Sandstone, carbonaceous, very fine, light-gray; minor dark- gray carbonaceous siltstone; gray shale; trace coal----- | 520 | 525 |
| Sandstone, carbonaceous, very fine, light-gray; minor dark- gray carbonaceous siltstone; gray shale; trace coal; minor gray siltstone; trace pyrite----- | 525 | 530 |
| Coal; minor light-gray siltstone; dark-gray carbonaceous siltstone; light-gray very fine sandstone----- | 530 | 535 |
| Coal; minor light-gray siltstone; dark-gray carbonaceous siltstone; light-gray very fine sandstone----- | 535 | 540 |
| Siltstone, sandy, light-gray; minor dark-gray carbonaceous siltstone; light-gray very fine sandstone; trace coal----- | 540 | 545 |
| Siltstone, sandy, light-gray; minor dark-gray carbonaceous siltstone; light-gray very fine sandstone; trace coal----- | 545 | 550 |
| Siltstone, sandy, light-gray; minor dark-gray carbonaceous siltstone; light-gray very fine sandstone; trace coal; trace orange-brown medium sandstone----- | 550 | 555 |
| Siltstone, sandy, light-gray; minor dark-gray carbonaceous siltstone; light-gray very fine sandstone; trace coal; trace orange-brown medium sandstone; minor tan shale----- | 555 | 560 |

Drill-hole W-OWP-1-OWP - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, sandy, light-gray; minor dark-gray carbonaceous siltstone; light-gray very fine sandstone; trace coal; trace orange-brown medium sandstone; minor tan shale----- | 560 | 565 |
| Siltstone, sandy, light-gray; minor dark-gray carbonaceous siltstone; light-gray very fine sandstone; trace coal; trace orange-brown medium sandstone; minor tan shale----- | 565 | 570 |
| Coal; minor gray siltstone; light-gray very fine sandstone; gray shale----- | 570 | 575 |
| Coal; minor gray siltstone; light-gray very fine sandstone; gray shale----- | 575 | 580 |
| Coal; minor gray siltstone; light-gray very fine sandstone; gray shale----- | 580 | 585 |
| Coal; minor gray siltstone; light-gray very fine sandstone; gray shale----- | 585 | 590 |
| Siltstone, carbonaceous, dark-gray; minor light-gray sandy carbonaceous siltstone; trace coal----- | 590 | 595 |
| Sandstone, very fine, light-gray; minor gray shale; trace coal----- | 595 | 600 |
| Sandstone, very fine, light-gray; minor gray shale; trace coal----- | 600 | 605 |
| Sandstone, very fine, light-gray; minor gray shale; trace coal; minor dark-gray carbonaceous shale----- | 605 | 610 |
| Sandstone, very fine, light-gray; minor gray shale; trace coal; minor dark-gray carbonaceous shale----- | 610 | 615 |

Drill-hole W-OWP-1-OWP - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor gray shale; trace coal; minor dark-gray carbonaceous shale----- | 615 | 620 |
| Sandstone, very fine, light-gray; minor gray shale; trace coal; minor dark-gray carbonaceous shale----- | 620 | 625 |
| Sandstone, very fine, light-gray; minor gray shale; trace coal; minor dark-gray carbonaceous shale----- | 625 | 630 |
| Sandstone, very fine, light-gray; minor gray shale; trace coal; minor dark-gray carbonaceous shale----- | 630 | 635 |
| Sandstone, very fine, light-gray; minor gray shale; trace coal; minor dark-gray carbonaceous shale----- | 635 | 640 |
| Sandstone, very fine, light-gray; minor gray shale; trace coal; minor dark-gray carbonaceous shale----- | 640 | 645 |
| Sandstone, very fine, light-gray; minor gray shale; trace coal; minor dark-gray carbonaceous shale----- | 645 | 650 |
| Sandstone, very fine, light-gray; minor gray shale; trace coal; minor dark-gray carbonaceous shale----- | 650 | 655 |
| Sandstone, very fine, light-gray; minor gray shale; trace coal; minor dark-gray carbonaceous shale----- | 655 | 660 |
| Sandstone, very fine, light-gray; minor gray shale; trace coal; minor dark-gray carbonaceous shale----- | 660 | 665 |
| Shale, carbonaceous, dark-gray; minor light-gray very fine carbonaceous sandstone; dark-gray carbonaceous siltstone; trace coal----- | 665 | 670 |

Drill-hole W-OWP-1-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, carbonaceous, dark-gray; minor light-gray very fine carbonaceous sandstone; dark-gray carbonaceous siltstone; trace coal----- | 670 | 675 |
| Shale, carbonaceous, dark-gray; minor light-gray very fine carbonaceous sandstone; dark-gray carbonaceous siltstone; trace coal----- | 675 | 680 |
| Shale, carbonaceous, dark-gray; minor light-gray very fine carbonaceous sandstone; dark-gray carbonaceous siltstone; trace coal----- | 680 | 685 |
| Siltstone, carbonaceous, black; minor coal; gray shale; gray very fine sandstone----- | 685 | 690 |
| Shale, carbonaceous, gray; minor light-gray very fine sandstone; dark-gray carbonaceous siltstone; trace orange medium sandstone----- | 690 | 695 |
| No recovery----- | 695 | 700 |
| No recovery----- | 700 | 705 |
| No recovery----- | 705 | 710 |
| Sandstone, very fine, light-gray; trace gray shale; coal----- | 710 | 715 |
| Sandstone, very fine, light-gray; trace gray shale; coal----- | 715 | 720 |
| Sandstone, very fine, light-gray; trace gray shale; coal----- | 720 | 725 |
| Sandstone, very fine, light-gray; trace gray shale; coal----- | 725 | 730 |
| Sandstone, very fine, light-gray; trace gray shale; coal----- | 730 | 735 |
| No recovery----- | 735 | 740 |

Total depth sampled - 740 ft.

Drill-hole W-OWP-2-OWP

NW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 16, T. 23 S., R. 4 E., Salt Lake Principal Meridian, Old Woman Plateau quadrangle, Sevier County, Utah; collar elevation 8,150 ft; begun October 15, 1976, abandoned October 20, 1976; sampled by L. F. Blanchard, J. V. Roberts, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Soil----- | 0 | 5 |
| Soil----- | 5 | 10 |
| Soil----- | 10 | 15 |
| Soil; minor red-brown conglomeratic sandstone----- | 15 | 20 |
| Sandstone, conglomeratic, red-brown----- | 20 | 25 |
| Sandstone, medium, tan----- | 25 | 30 |
| Sandstone, medium, tan----- | 30 | 35 |
| Sandstone, conglomeratic, pink----- | 35 | 40 |
| Sandstone, conglomeratic, buff----- | 40 | 45 |
| Sandstone, conglomeratic, buff----- | 45 | 50 |
| Sandstone, conglomeratic, buff----- | 50 | 55 |
| Sandstone, conglomeratic, buff----- | 55 | 60 |
| Sandstone, medium, buff----- | 60 | 65 |
| Sandstone, fine, buff----- | 65 | 70 |
| Sandstone, fine, buff----- | 70 | 75 |
| Sandstone, fine, buff----- | 75 | 80 |
| Sandstone, fine, buff----- | 80 | 85 |
| Sandstone, fine, buff----- | 85 | 90 |

Drill-hole W-OWP-2-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, medium, tan----- | 90 | 95 |
| Sandstone, medium, buff----- | 95 | 100 |
| Sandstone, medium, buff----- | 100 | 105 |
| Sandstone, fine to very fine, light-brown----- | 105 | 110 |
| Sandstone, medium, light-tan----- | 110 | 115 |
| Sandstone, medium, light-tan----- | 115 | 120 |
| Shale, gray; minor black carbonaceous shale; trace light- tan medium sandstone----- | 120 | 125 |
| Shale, gray; minor black carbonaceous shale; trace light- tan medium sandstone; trace coal----- | 125 | 130 |
| Shale, gray; minor black carbonaceous shale; trace light- tan medium sandstone; trace coal----- | 130 | 135 |
| Shale, gray; minor black carbonaceous shale; trace light- tan medium sandstone; trace coal----- | 135 | 140 |
| Shale, gray; minor black carbonaceous shale; trace light- tan medium sandstone; trace coal; minor light-gray very fine sandstone----- | 140 | 145 |
| Shale, gray; minor black carbonaceous shale; trace light- tan medium sandstone; trace coal; minor light-gray very fine sandstone----- | 145 | 150 |
| No recovery----- | 150 | 155 |
| No recovery----- | 155 | 160 |
| Sandstone, medium, tan----- | 160 | 165 |
| Siltstone, gray----- | 165 | 170 |

Drill-hole W-OWP-2-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray----- | 170 | 175 |
| Sandstone, very fine, light-gray; minor gray siltstone----- | 175 | 180 |
| Sandstone, very fine, light-gray minor gray siltstone----- | 180 | 185 |
| Shale, gray; minor gray very fine sandstone----- | 185 | 190 |
| Shale, gray; minor gray very fine sandstone----- | 190 | 195 |
| No recovery----- | 195 | 200 |
| No recovery----- | 200 | 205 |
| Shale, gray; minor gray very fine sandstone----- | 205 | 210 |
| Shale, gray; minor gray very fine sandstone----- | 210 | 215 |
| Sandstone, medium, gray-brown----- | 215 | 220 |
| Sandstone, medium, gray-brown----- | 220 | 225 |
| Sandstone, medium, gray-brown----- | 225 | 230 |
| Sandstone, medium, gray-brown----- | 230 | 235 |
| Sandstone, medium, gray-brown----- | 235 | 240 |
| Shale, gray; minor gray fine sandstone----- | 240 | 245 |
| Shale, gray; minor gray fine sandstone----- | 245 | 250 |
| Shale, gray; minor gray fine sandstone----- | 250 | 255 |
| Shale, gray; minor gray fine sandstone----- | 255 | 260 |
| Shale, gray; minor gray fine sandstone----- | 260 | 265 |
| Shale, gray; minor gray fine sandstone----- | 265 | 270 |
| Shale, gray; minor gray fine sandstone----- | 270 | 275 |
| Shale, gray; minor gray fine sandstone----- | 275 | 280 |
| No recovery----- | 280 | 285 |
| No recovery----- | 285 | 290 |

Drill-hole W-OWP-2-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| No recovery----- | 290 | 295 |
| Shale, gray; minor gray fine sandstone----- | 295 | 300 |
| Shale, gray; minor gray fine sandstone----- | 300 | 305 |
| Shale, gray; minor gray fine sandstone----- | 305 | 310 |
| No recovery----- | 310 | 315 |
| No recovery----- | 315 | 320 |
| Shale, gray; minor gray fine sandstone----- | 320 | 325 |
| Shale, gray; minor gray fine sandstone----- | 325 | 330 |
| No recovery----- | 330 | 335 |
| No recovery----- | 335 | 340 |
| No recovery----- | 340 | 345 |
| No recovery----- | 345 | 350 |
| No recovery----- | 350 | 355 |
| No recovery----- | 355 | 360 |
| No recovery----- | 360 | 365 |
| No recovery----- | 365 | 370 |
| No recovery----- | 370 | 375 |
| No recovery----- | 375 | 380 |
| No recovery----- | 380 | 385 |
| Shale, gray; minor gray siltstone; trace orange-brown very fine sandstone----- | 385 | 390 |
| Shale, gray; minor gray siltstone; trace orange-brown very fine sandstone----- | 390 | 395 |
| No recovery----- | 395 | 400 |

Drill-hole W-OWP-2-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| No recovery----- | 400 | 405 |
| Shale, gray; minor gray carbonaceous siltstone----- | 405 | 410 |
| Shale, gray; minor gray carbonaceous siltstone----- | 410 | 415 |
| Shale, gray; minor gray carbonaceous siltstone----- | 415 | 420 |
| Shale, gray; minor gray carbonaceous siltstone----- | 420 | 425 |
| No recovery----- | 425 | 430 |
| Siltstone, sandy, gray----- | 430 | 435 |
| Siltstone, sandy, gray----- | 435 | 440 |
| Siltstone, sandy, gray; trace dark-gray carbonaceous siltstone----- | 440 | 445 |
| No recovery----- | 445 | 450 |
| Sandstone, very fine, light-gray; trace dark-gray carbon- aceous siltstone; dark-gray shale----- | 450 | 455 |
| Sandstone, very fine, light-gray; trace dark-gray carbon- aceous siltstone; dark-gray shale----- | 455 | 460 |
| Sandstone, very fine, light-gray; trace dark-gray carbon- aceous siltstone; dark-gray shale----- | 460 | 465 |
| Sandstone, very fine, light-gray; trace dark-gray carbon- aceous siltstone; dark-gray shale----- | 465 | 470 |
| Sandstone, very fine, light-gray; trace dark-gray carbon- aceous siltstone; dark-gray shale----- | 470 | 475 |
| No recovery----- | 475 | 480 |
| No recovery----- | 480 | 485 |
| No recovery----- | 485 | 490 |

Drill-hole W-OWP-2-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| No recovery----- | 490 | 495 |
| No recovery----- | 495 | 500 |
| Sandstone, very fine, light-gray; trace dark-gray carbon- aceous shale----- | 500 | 505 |
| No recovery----- | 505 | 510 |
| No recovery----- | 510 | 515 |
| No recovery----- | 515 | 520 |
| Sandstone, very fine, light-gray; trace dark-gray carbon- aceous shale----- | 520 | 525 |
| Sandstone, very fine, light-gray; trace dark-gray carbon- aceous shale----- | 525 | 530 |
| Sandstone, very fine, light-gray; trace dark-gray carbon- aceous shale----- | 530 | 535 |
| Total depth sampled - 535 ft. | | |

Drill-hole W-OWP-2.5-OWP

SE¹/₄NE¹/₄ sec. 9, T. 23 S., R. 4 E., Salt Lake Principal Meridian, Old Woman Plateau quadrangle, Sevier County, Utah; collar elevation 8,260 ft; begun October 14, 1976, abandoned October 19, 1976; sampled by J. V. Roberts and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Soil----- | 0 | 5 |
| Sandstone, conglomeratic, red-brown----- | 5 | 10 |
| Sandstone, conglomeratic, yellow----- | 10 | 15 |
| Sandstone, conglomeratic, yellow----- | 15 | 20 |
| Sandstone, conglomeratic, yellow----- | 20 | 25 |
| Sandstone, fine, light-whitish-yellow; minor yellow con- glomeratic sandstone----- | 25 | 30 |
| Sandstone, fine, light-whitish-yellow; minor yellow con- glomeratic sandstone----- | 30 | 35 |
| Sandstone, fine, light-yellow----- | 35 | 40 |
| Sandstone, fine, light-yellow----- | 40 | 45 |
| Sandstone, fine, whitish-yellow----- | 45 | 50 |
| Sandstone, very fine, white----- | 50 | 55 |
| Sandstone, very fine, white----- | 55 | 60 |
| Sandstone, very fine, white----- | 60 | 65 |
| Sandstone, very fine, white----- | 65 | 70 |
| Sandstone, very fine, white----- | 70 | 75 |
| Sandstone, very fine, white----- | 75 | 80 |
| Sandstone, fine, light-yellow----- | 80 | 85 |

Drill-hole W-OWP-2.5-OWP - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray----- | 85 | 90 |
| Sandstone, fine, light-yellow; minor dark-gray carbonaceous siltstone----- | 90 | 95 |
| Siltstone, carbonaceous, dark-gray----- | 95 | 100 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone----- | 100 | 105 |
| Sandstone, fine, gray; minor dark-gray carbonaceous siltstone----- | 105 | 110 |
| Sandstone, very fine, gray----- | 110 | 115 |
| Sandstone, very fine, gray; minor yellow fine sandstone; dark-gray carbonaceous siltstone----- | 115 | 120 |
| Sandstone, very fine, gray; minor yellow fine sandstone; dark-gray carbonaceous siltstone----- | 120 | 125 |
| Sandstone, very fine, gray; minor yellow fine sandstone; dark-gray carbonaceous siltstone----- | 125 | 130 |
| Sandstone, very fine, gray; minor yellow fine sandstone; dark-gray carbonaceous siltstone----- | 130 | 135 |
| Siltstone, sandy, gray----- | 135 | 140 |
| Siltstone, sandy, gray----- | 140 | 145 |
| Sandstone, very fine, gray----- | 145 | 150 |
| Sandstone, very fine, gray----- | 150 | 155 |
| Siltstone, sandy, gray----- | 155 | 160 |
| Siltstone, sandy, gray----- | 160 | 165 |

Drill-hole W-OWP-2.5-OWP - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray-yellow; trace gray sandy | | |
| siltstone----- | 165 | 170 |
| Sandstone, very fine, gray-yellow; trace gray sandy | | |
| siltstone----- | 170 | 175 |
| Siltstone, sandy, gray----- | 175 | 180 |
| Siltstone, sandy, gray----- | 180 | 185 |
| Siltstone, sandy, gray----- | 185 | 190 |
| Siltstone, sandy, gray----- | 190 | 195 |
| Siltstone, sandy, gray----- | 195 | 200 |
| Siltstone, sandy, gray----- | 200 | 205 |
| Siltstone, sandy, gray----- | 205 | 210 |
| Siltstone, sandy, gray----- | 210 | 215 |
| Siltstone, sandy, gray----- | 215 | 220 |
| Siltstone, sandy, gray----- | 220 | 225 |
| Sandstone, very fine, gray----- | 225 | 230 |
| Sandstone, very fine, gray----- | 230 | 235 |
| Sandstone, very fine, gray----- | 235 | 240 |
| Siltstone, sandy, gray----- | 240 | 245 |
| Siltstone, sandy, gray----- | 245 | 250 |
| Siltstone, sandy, gray----- | 250 | 255 |
| Siltstone, sandy, gray----- | 255 | 260 |
| Siltstone, sandy, gray----- | 260 | 265 |
| Siltstone, sandy, gray----- | 265 | 270 |
| Siltstone, sandy, light-gray----- | 270 | 275 |

Drill-hole W-OWP-2.5-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, sandy, light-gray----- | 275 | 280 |
| Siltstone, sandy, light-gray; minor dark-gray carbonaceous shale----- | 280 | 285 |
| Shale, carbonaceous, dark-gray; minor dark-gray carbonaceous siltstone; trace pyrite----- | 285 | 290 |
| Siltstone, carbonaceous, dark-gray----- | 290 | 295 |
| Siltstone, sandy, gray----- | 295 | 300 |
| Siltstone, sandy, gray----- | 300 | 305 |
| No recovery----- | 305 | 310 |
| Siltstone, gray----- | 310 | 315 |
| Siltstone, gray----- | 315 | 320 |
| Siltstone, gray----- | 320 | 325 |
| Siltstone, gray----- | 325 | 330 |
| Siltstone, gray----- | 330 | 335 |
| Siltstone, gray----- | 335 | 340 |
| Shale, silty, gray----- | 340 | 345 |
| Shale, silty, gray----- | 345 | 350 |
| Shale, silty, gray; trace dark-gray carbonaceous shale----- | 350 | 355 |
| Shale, silty, gray----- | 355 | 360 |
| Shale, silty, gray----- | 360 | 365 |
| Shale, carbonaceous, black----- | 365 | 370 |
| Shale, gray; minor gray sandy siltstone; trace black carbon- aceous shale----- | 370 | 375 |
| Shale, gray; minor gray sandy siltstone; trace black carbon- aceous shale----- | 375 | 380 |

Drill-hole W-OWP-2.5-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor gray sandy siltstone; trace black; carbonaceous shale----- | 380 | 385 |
| Shale, gray; minor gray sandy siltstone; trace black carbonaceous shale----- | 385 | 390 |
| Shale, gray; minor gray sandy siltstone; trace black carbonaceous shale----- | 390 | 395 |
| No recovery----- | 395 | 400 |
| Shale, gray; trace black carbonaceous shale; gray siltstone-- | 400 | 405 |
| Shale, gray; trace black carbonaceous shale; gray siltstone-- | 405 | 410 |
| Shale, gray; trace black carbonaceous shale; gray siltstone-- | 410 | 415 |
| Shale, gray; trace black carbonaceous shale; gray siltstone-- | 415 | 420 |
| Shale, gray; trace black carbonaceous shale; gray siltstone-- | 420 | 425 |
| Shale, gray; trace black carbonaceous shale; gray siltstone-- | 425 | 430 |
| Shale, gray; trace black carbonaceous shale; gray siltstone-- | 430 | 435 |
| Shale, gray; trace black carbonaceous shale; gray siltstone-- | 435 | 440 |
| Shale, gray; trace black carbonaceous shale; gray siltstone-- | 440 | 445 |
| No recovery----- | 445 | 450 |
| No recovery----- | 450 | 455 |
| No recovery----- | 455 | 460 |
| Shale, gray; minor dark-gray carbonaceous shale; light-gray very fine sandstone; trace white shale; coal----- | 460 | 465 |
| Shale, gray----- | 465 | 470 |
| Shale, gray; trace coal----- | 470 | 475 |
| Shale, gray; trace coal----- | 475 | 480 |

Drill-hole W-OWP-2.5-OWP - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; trace coal; minor dark-gray carbonaceous shale-- | 480 | 485 |
| Shale, gray; trace coal; minor dark-gray carbonaceous shale-- | 485 | 490 |
| Shale, gray, trace coal; minor dark-gray carbonaceous shale-- | 490 | 495 |
| Shale, gray, trace coal; minor dark-gray carbonaceous shale-- | 495 | 500 |
| Shale, gray, trace coal; minor dark-gray carbonaceous shale-- | 500 | 505 |
| Shale, gray, trace coal; minor dark-gray carbonaceous shale-- | 505 | 510 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale----- | 510 | 515 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale----- | 515 | 520 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale----- | 520 | 525 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale----- | 525 | 530 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale----- | 530 | 535 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale----- | 535 | 540 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale----- | 540 | 545 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale----- | 545 | 550 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale----- | 550 | 555 |

Drill-hole W-OWP-2.5-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale----- | 555 | 560 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale----- | 560 | 565 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale----- | 565 | 570 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale----- | 570 | 575 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale----- | 575 | 580 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale----- | 580 | 585 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale----- | 585 | 590 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous shale----- | 590 | 595 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray siltstone; black carbonaceous shale----- | 595 | 600 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray siltstone; black carbonaceous shale; trace orange medium sandstone----- | 600 | 605 |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray siltstone; black carbonaceous shale; trace orange medium sandstone; trace coal----- | 605 | 610 |

Drill-hole W-OWP-2.5-OWP - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, slightly carbonaceous, very fine, light-gray; minor gray siltstone; black carbonaceous shale; trace orange medium sandstone; trace coal; trace light-pink medium sandstone----- | 610 | 615 |
| Siltstone, gray; minor black carbonaceous shale; light-gray very fine sandstone----- | 615 | 620 |
| Siltstone, gray; minor light-gray very fine sandstone----- | 620 | 625 |
| Siltstone, gray; minor light-gray very fine sandstone; minor black carbonaceous shale----- | 625 | 630 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray siltstone; coal----- | 630 | 635 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray siltstone; coal----- | 635 | 640 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray siltstone; coal----- | 640 | 645 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray siltstone; coal----- | 645 | 650 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray siltstone; coal----- | 650 | 655 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray siltstone; coal----- | 655 | 660 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray siltstone; coal----- | 660 | 665 |
| Sandstone, carbonaceous, very fine, light-gray; minor gray siltstone; coal----- | 665 | 670 |

Drill-hole W-OWP-2.5-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine to medium, light-gray; minor gray siltstone; dark-gray carbonaceous siltstone; gray shale----- | 670 | 675 |
| Sandstone, fine to medium, light-gray; minor gray siltstone; dark-gray carbonaceous siltstone; gray shale; minor gray very fine carbonaceous sandstone----- | 675 | 680 |
| Sandstone, fine to medium, light-gray; minor gray siltstone; dark-gray carbonaceous siltstone; gray shale; minor gray very fine carbonaceous sandstone----- | 680 | 685 |
| Sandstone, fine to medium, light-gray; minor gray siltstone; dark-gray carbonaceous siltstone; gray shale; minor gray very fine carbonaceous sandstone----- | 685 | 690 |
| Sandstone, fine to medium, light-gray; minor gray siltstone; dark-gray carbonaceous siltstone; gray shale; minor gray very fine carbonaceous sandstone----- | 690 | 695 |
| Sandstone, fine to medium, light-gray; minor gray siltstone; dark-gray carbonaceous siltstone; gray shale; minor gray very fine carbonaceous sandstone----- | 695 | 700 |
| Sandstone, carbonaceous, very fine, gray; minor black carbon- aceous siltstone; gray siltstone----- | 700 | 705 |
| Sandstone, carbonaceous, very fine, gray; minor black carbon- aceous siltstone; gray siltstone----- | 705 | 710 |
| Sandstone, very fine, gray; minor gray shale; dark-gray carbonaceous shale----- | 710 | 715 |

Drill-hole W-OWP-2.5-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor gray shale; dark-gray carbonaceous shale----- | 715 | 720 |
| Sandstone, very fine, gray; minor gray shale; dark-gray carbonaceous shale; trace coal----- | 720 | 725 |
| Coal; minor gray siltstone; gray very fine sandstone; trace gray carbonaceous shale----- | 725 | 730 |
| Shale, gray; minor coal; gray carbonaceous shale----- | 730 | 735 |
| Shale, gray; minor coal; gray carbonaceous shale----- | 735 | 740 |
| Sandstone, slightly carbonaceous, very fine, gray; minor gray shale; trace coal----- | 740 | 745 |
| Sandstone, slightly carbonaceous, very fine, gray; minor gray shale; trace coal----- | 745 | 750 |
| Siltstone, gray-brown; minor dark-gray carbonaceous shale; gray sandy siltstone----- | 750 | 755 |
| Siltstone, gray-brown; minor dark-gray carbonaceous shale; gray sandy siltstone; trace coal----- | 755 | 760 |
| Siltstone, gray-brown; minor dark-gray carbonaceous shale; gray sandy siltstone; trace coal----- | 760 | 765 |
| Siltstone, gray-brown; minor dark-gray carbonaceous shale; gray sandy siltstone; trace coal----- | 765 | 770 |
| Siltstone, gray-brown; minor dark-gray carbonaceous shale; gray sandy siltstone; trace coal----- | 770 | 775 |
| Siltstone, gray-brown; minor dark-gray carbonaceous shale; gray sandy siltstone; trace coal----- | 775 | 780 |

Drill-hole W-OWP-2.5-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous siltstone; trace coal----- | 780 | 785 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous siltstone; trace coal----- | 785 | 790 |
| andstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous siltstone; trace coal; trace light-brown siltstone----- | 790 | 795 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous siltstone; trace coal; trace light-brown siltstone----- | 795 | 800 |
| Sandstone, very fine, gray; minor gray siltstone; dark-gray carbonaceous siltstone; trace coal; trace light-brown siltstone----- | 800 | 805 |
| Shale, gray; minor coal; gray siltstone----- | 805 | 810 |
| Shale, gray; minor coal; gray siltstone----- | 810 | 815 |
| Sandstone, very fine, light-gray; minor gray shale; dark-gray carbonaceous shale; trace gray siltstone----- | 815 | 820 |
| Sandstone, very fine, light-gray; minor gray shale; dark-gray carbonaceous shale; trace gray siltstone----- | 820 | 825 |
| Sandstone, very fine, light-gray; minor gray shale; dark-gray carbonaceous shale; trace gray siltstone; trace light-brown siltstone----- | 825 | 830 |

Drill-hole W-OWP-2.5-OWP - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor gray shale; dark-gray carbonaceous shale; trace gray siltstone; trace light-brown siltstone----- | 830 | 835 |
| Sandstone, very fine, light-gray; minor gray shale; dark-gray carbonaceous shale; trace gray siltstone; trace light-brown siltstone----- | 835 | 840 |
| Shale, gray; minor coal; dark-gray carbonaceous siltstone---- | 840 | 845 |
| Sandstone, very fine, gray; minor gray carbonaceous siltstone; coal; trace gray shale----- | 845 | 850 |
| Shale, gray; minor dark-gray carbonaceous siltstone; gray very fine siltstone; trace coal----- | 850 | 855 |
| Total depth sampled - 855 ft. | | |

Drill-hole W-OWP-3-OWP

NW¼NE¼ sec. 10, T. 23 S., R. 4 E., Salt Lake Principal Meridian, Old Woman Plateau quadrangle, Sevier County, Utah; collar elevation 8,370 ft; begun October 14, 1976, completed October 26, 1976; sampled by L. F. Blanchard, J. V. Roberts, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, red-brown----- | 0 | 5 |
| Sandstone, fine, red-brown----- | 5 | 10 |
| Conglomerate, yellow; trace red-brown fine sandstone----- | 10 | 15 |
| Sandstone, very fine, light-yellow----- | 15 | 20 |
| Sandstone, fine, white----- | 20 | 25 |
| Sandstone, fine, white----- | 25 | 30 |
| Sandstone, fine, white----- | 30 | 35 |
| Sandstone, fine, white----- | 35 | 40 |
| Sandstone, medium, whitish-yellow; minor light-gray siltstone----- | 40 | 45 |
| Sandstone, medium, whitish-yellow; minor light-gray siltstone----- | 45 | 50 |
| Sandstone, fine, light-yellow----- | 50 | 55 |
| Sandstone, fine, light-yellow----- | 55 | 60 |
| Sandstone, fine, light-yellow; minor white very fine sandstone----- | 60 | 65 |
| Sandstone, very fine, white----- | 65 | 70 |
| Sandstone, very fine, light-yellow----- | 70 | 75 |

Drill-hole W-OWP-3-OWP - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-yellow----- | 75 | 80 |
| Sandstone, fine, yellow----- | 80 | 85 |
| Sandstone, very fine, whitish-yellow----- | 85 | 90 |
| Sandstone, very fine, whitish-yellow----- | 90 | 95 |
| Sandstone, very fine, light-yellow; minor gray shale----- | 95 | 100 |
| Sandstone, very fine, yellow----- | 100 | 105 |
| Shale, carbonaceous, silty, dark-gray----- | 105 | 110 |
| Sandstone, very fine, yellow-brown; minor gray siltstone; trace dark-gray silty carbonaceous shale----- | 110 | 115 |
| Sandstone, very fine, light-yellow----- | 115 | 120 |
| Sandstone, very fine, light-yellow----- | 120 | 125 |
| Sandstone, very fine, white----- | 125 | 130 |
| Sandstone, very fine, white----- | 130 | 135 |
| Sandstone, very fine, light-yellow----- | 135 | 140 |
| No recovery----- | 140 | 145 |
| Shale, gray; trace dark-gray carbonaceous shale----- | 145 | 150 |
| Shale, gray; trace dark-gray carbonaceous shale----- | 150 | 155 |
| Shale, gray; trace dark-gray carbonaceous shale----- | 155 | 160 |
| Shale, gray; trace dark-gray carbonaceous shale----- | 160 | 165 |
| Shale, gray; trace dark-gray carbonaceous shale----- | 165 | 170 |
| Shale, gray; trace dark-gray carbonaceous shale----- | 170 | 175 |
| Siltstone, gray----- | 175 | 180 |
| Shale, gray----- | 180 | 185 |

Drill-hole W-OWP-3-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray----- | 185 | 190 |
| Shale, gray----- | 190 | 195 |
| Sandstone, very fine, light-gray; trace gray shale----- | 195 | 200 |
| Sandstone, very fine, light-gray----- | 200 | 205 |
| Sandstone, very fine, light-gray----- | 205 | 210 |
| Sandstone, very fine, light-gray----- | 210 | 215 |
| Shale, carbonaceous, silty, dark-gray----- | 215 | 220 |
| Shale, carbonaceous, silty, dark-gray----- | 220 | 225 |
| Shale, carbonaceous, silty, dark-gray----- | 225 | 230 |
| Siltstone, carbonaceous, dark-gray; minor dark-gray silty carbonaceous shale----- | 230 | 235 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous siltstone----- | 235 | 240 |
| Sandstone, very fine, light-gray----- | 240 | 245 |
| Sandstone, very fine, light-gray----- | 245 | 250 |
| Sandstone, very fine, light-gray----- | 250 | 255 |
| Sandstone, very fine, light-gray----- | 255 | 260 |
| Sandstone, very fine, light-gray; trace dark-gray carbon- aceous shale----- | 260 | 265 |
| Sandstone, very fine, light-gray; trace dark-gray carbon- aceous shale; trace coal----- | 265 | 270 |
| Sandstone, very fine, gray; trace dark-gray carbonaceous shale; coal----- | 270 | 275 |

Drill-hole W-OWP-3-OWP. - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; trace dark-gray carbonaceous shale----- | 275 | 280 |
| Shale, silty, light-gray----- | 280 | 285 |
| Shale, silty, light-gray----- | 285 | 290 |
| Shale, gray----- | 290 | 295 |
| Shale, gray----- | 295 | 300 |
| No recovery----- | 300 | 305 |
| No recovery----- | 305 | 310 |
| Shale, carbonaceous, silty, dark-gray----- | 310 | 315 |
| Shale, carbonaceous, silty, dark-gray----- | 315 | 320 |
| Shale, carbonaceous, silty, dark-gray; minor gray sandy siltstone----- | 320 | 325 |
| Shale, gray; minor gray sandy siltstone----- | 325 | 330 |
| Siltstone, sandy, gray----- | 330 | 335 |
| Siltstone, sandy, gray----- | 335 | 340 |
| Siltstone, sandy, gray; trace dark-gray carbonaceous shale--- | 340 | 345 |
| Siltstone, carbonaceous, dark-gray; trace coal; pyrite----- | 345 | 350 |
| Siltstone, carbonaceous, dark-gray; trace coal; pyrite----- | 350 | 355 |
| Siltstone, sandy, dark-gray----- | 355 | 360 |
| Siltstone, sandy, dark-gray; minor light-brown siltstone; trace pyrite----- | 360 | 365 |
| Shale, dark-gray; minor gray shale; trace light-brown siltstone; dark-gray sandy siltstone----- | 365 | 370 |

Drill-hole W-OWP-3-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, dark-gray; minor gray shale; dark-gray carbonaceous shale; gray siltstone----- | 370 | 375 |
| Shale, gray; minor coal; dark-gray carbonaceous; gray very fine sandstone; pyrite----- | 375 | 380 |
| Sandstone, very fine, light-gray----- | 380 | 385 |
| Siltstone, sandy, gray; minor coal; dark-gray carbonaceous shale----- | 385 | 390 |
| No recovery----- | 390 | 395 |
| Sandstone, very fine, light-gray; minor gray carbonaceous siltstone; trace pyrite----- | 395 | 400 |
| Coal----- | 400 | 405 |
| Siltstone, sandy, gray; minor coal----- | 405 | 410 |
| Siltstone, sandy, gray; minor dark-gray carbonaceous siltstone; gray silty shale; trace coal; pyrite----- | 410 | 415 |
| Siltstone, sandy, gray; minor dark-gray carbonaceous siltstone; gray silty shale; trace coal; pyrite----- | 415 | 420 |
| Shale, silty, gray----- | 420 | 425 |
| Shale, silty, gray----- | 425 | 430 |
| Shale, dark-gray----- | 430 | 435 |
| Shale, dark-gray----- | 435 | 440 |
| Shale, dark-gray----- | 440 | 445 |
| Siltstone, gray; minor gray sandy siltstone----- | 445 | 450 |

Drill-hole W-OWP-3-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; minor gray sandy siltstone----- | 450 | 455 |
| Siltstone, sandy, gray; minor dark-gray-black carbonaceous shale; trace coal----- | 455 | 460 |
| Shale, gray----- | 460 | 465 |
| Shale, gray----- | 465 | 470 |
| Shale, gray----- | 470 | 475 |
| Shale, gray; minor gray sandy siltstone----- | 475 | 480 |
| Shale, gray; minor gray sandy siltstone----- | 480 | 485 |
| Shale, dark-gray----- | 485 | 490 |
| Shale, dark-gray----- | 490 | 495 |
| Shale, dark-gray----- | 495 | 500 |
| Shale, gray; minor dark-gray carbonaceous shale; coal----- | 500 | 505 |
| Siltstone, gray; minor dark-gray shale; light-brown siltstone; trace coal----- | 505 | 510 |
| Siltstone, gray; minor light-brown siltstone; dark-gray silty shale----- | 510 | 515 |
| Siltstone, gray; minor light-brown siltstone; dark-gray silty shale----- | 515 | 520 |
| Siltstone, gray; minor light-brown siltstone; dark-gray silty shale----- | 520 | 525 |
| Siltstone, gray; minor light-brown siltstone; dark-gray silty shale----- | 525 | 530 |
| Siltstone, gray----- | 530 | 535 |

Drill-hole W-OWP-3-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray----- | 535 | 540 |
| Shale, carbonaceous, silty, black; minor gray siltstone----- | 540 | 545 |
| Shale, carbonaceous, silty, black; minor gray siltstone----- | 545 | 550 |
| Shale, carbonaceous, silty, black; minor gray siltstone; trace gray very fine sandstone----- | 550 | 555 |
| Sandstone, very fine, gray----- | 555 | 560 |
| Sandstone, very fine, gray; minor black carbonaceous shale--- | 560 | 565 |
| Sandstone, very fine, gray; minor black carbonaceous shale--- | 565 | 570 |
| No recovery----- | 570 | 575 |
| No recovery----- | 575 | 580 |
| No recovery----- | 580 | 585 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone----- | 585 | 590 |
| No recovery----- | 590 | 595 |
| No recovery----- | 595 | 600 |
| No recovery----- | 600 | 605 |
| Siltstone, carbonaceous, dark-gray----- | 605 | 610 |
| No recovery----- | 610 | 615 |
| No recovery----- | 615 | 620 |
| Shale, carbonaceous, dark-gray; minor light-gray medium sandstone----- | 620 | 625 |
| Shale, carbonaceous, dark-gray; minor light-gray medium sandstone; minor light-gray fine sandstone----- | 625 | 630 |
| Sandstone, fine, light-gray; minor gray carbonaceous siltstone----- | 630 | 635 |

Drill-hole W-OWP-3-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, light-gray; minor gray carbonaceous siltstone----- | 635 | 640 |
| Sandstone, fine, light-gray; minor gray carbonaceous siltstone----- | 640 | 645 |
| Sandstone, fine, light-gray; minor gray carbonaceous siltstone; minor gray shale----- | 645 | 650 |
| Sandstone, fine, light-gray; minor gray carbonaceous siltstone; minor gray shale----- | 650 | 655 |
| Sandstone, fine, light-gray; minor gray carbonaceous siltstone; minor gray shale----- | 655 | 660 |
| Sandstone, fine, light-gray; minor gray carbonaceous siltstone; minor gray shale----- | 660 | 665 |
| Sandstone, fine, light-gray; minor gray carbonaceous siltstone; minor gray shale----- | 665 | 670 |
| Sandstone, fine, light-gray; minor gray carbonaceous siltstone; minor gray shale; trace white shale----- | 670 | 675 |
| Sandstone, fine, light-gray; minor gray carbonaceous siltstone; minor gray shale; trace white shale----- | 675 | 680 |
| Sandstone, fine, light-gray; minor gray carbonaceous siltstone; minor gray shale; trace white shale----- | 680 | 685 |
| Sandstone, fine, light-gray; minor gray carbonaceous siltstone; minor gray shale; trace white shale----- | 685 | 690 |

Drill-hole W-OWP-3-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, light-gray; minor gray carbonaceous siltstone; minor gray shale; trace white shale----- | 690 | 695 |
| Sandstone, fine, light-gray; minor gray carbonaceous siltstone; minor gray shale; trace white shale; trace tan siltstone----- | 695 | 700 |
| Sandstone, fine, light-gray; minor gray carbonaceous siltstone; minor gray shale; trace white shale; trace tan siltstone----- | 700 | 705 |
| Sandstone, carbonaceous, fine to medium, light-gray; minor dark-gray carbonaceous siltstone; trace dark-gray car- bonaceous shale; white shale----- | 705 | 710 |
| Shale, carbonaceous, dark-gray; minor gray siltstone; light-gray fine to medium sandstone----- | 710 | 715 |
| Shale, carbonaceous, dark-gray; minor gray siltstone; light-gray fine to medium sandstone----- | 715 | 720 |
| Shale, carbonaceous, dark-gray; minor gray siltstone; light-gray fine to medium sandstone----- | 720 | 725 |
| Shale, carbonaceous, dark-gray; minor gray siltstone; light-gray fine to medium sandstone----- | 725 | 730 |
| Shale, carbonaceous, dark-gray; minor gray siltstone; light-gray fine to medium sandstone----- | 730 | 735 |
| Sandstone, fine, light-gray; minor gray shale; black carbonaceous siltstone----- | 735 | 740 |

Drill-hole W-OWP-3-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, light-gray; minor gray shale; black carbonaceous siltstone----- | 740 | 745 |
| Sandstone, fine, light-gray; minor gray shale; black carbonaceous siltstone----- | 745 | 750 |
| Sandstone, fine, light-gray; minor gray shale; black carbonaceous siltstone----- | 750 | 755 |
| Sandstone, fine, light-gray; minor gray shale; black carbonaceous siltstone----- | 755 | 760 |
| Sandstone, fine, light-gray; minor gray shale; black carbonaceous siltstone----- | 760 | 765 |
| Sandstone, fine, light-gray; minor gray shale; black carbonaceous siltstone----- | 765 | 770 |
| Sandstone, fine, light-gray; minor gray shale; black carbonaceous siltstone----- | 770 | 775 |
| Sandstone, fine, light-gray; minor gray shale; black carbonaceous siltstone----- | 775 | 780 |
| Sandstone, fine, light-gray; minor gray shale; black carbonaceous siltstone----- | 780 | 785 |
| Sandstone, fine, light-gray; minor gray shale; black carbonaceous siltstone; minor coal----- | 785 | 790 |
| Sandstone, fine, light-gray; minor gray shale; black carbonaceous siltstone; minor coal----- | 790 | 795 |

Drill-hole W-OWP-3-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor dark-gray siltstone; gray shale; trace coal----- | 795 | 800 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone; gray shale; trace coal----- | 800 | 805 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone; gray shale; trace coal----- | 805 | 810 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone; gray shale; trace coal----- | 810 | 815 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone; gray shale; trace coal----- | 815 | 820 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone; gray shale; trace coal----- | 820 | 825 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone; gray shale; trace coal----- | 825 | 830 |
| Sandstone, very fine, light-gray; minor dark-gray siltstone; gray shale; trace coal----- | 830 | 835 |
| Shale, carbonaceous, black; minor gray shale; light-gray very fine sandstone----- | 835 | 840 |
| Shale, carbonaceous, black; minor gray shale; light-gray very fine sandstone----- | 840 | 845 |
| Shale, carbonaceous, black; minor gray shale; light-gray very fine sandstone----- | 845 | 850 |

Drill-hole W-OWP-3-OWP - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor black carbonaceous shale; gray shale----- | 850 | 855 |
| Sandstone, very fine, light-gray; minor black carbonaceous shale; gray shale----- | 855 | 860 |
| Sandstone, very fine, light-gray; minor black carbonaceous shale; gray shale----- | 860 | 865 |
| Sandstone, very fine, light-gray; minor black carbonaceous shale; gray shale----- | 865 | 870 |
| Sandstone, very fine, light-gray; minor black carbonaceous shale; gray shale----- | 870 | 875 |
| Total depth sampled - 875 ft. | | |

Drill-hole W-OWP-4-AL

SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 34, T. 22 S., R. 4 E., Salt Lake Principal Meridian, Acord Lakes quadrangle, Sevier County, Utah; collar elevation 8,310 ft; begun October 20, 1976, completed October 30, 1976; sampled by L. F. Blanchard, J. V. Roberts, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Soil----- | 0 | 5 |
| Soil----- | 5 | 10 |
| Soil----- | 10 | 15 |
| Soil; minor yellow-brown fine carbonaceous sandstone----- | 15 | 20 |
| Sandstone, carbonaceous, fine, yellow-brown; minor gray fine sandstone; dark-gray sandy siltstone----- | 20 | 25 |
| Sandstone, medium, yellow----- | 25 | 30 |
| Sandstone, medium, light-yellow----- | 30 | 35 |
| Sandstone, medium, light-yellow; trace gray siltstone----- | 35 | 40 |
| Sandstone, very fine, light-yellow----- | 40 | 45 |
| Sandstone, very fine, light-yellow----- | 45 | 50 |
| Sandstone, fine, light-orange; trace gray siltstone----- | 50 | 55 |
| Sandstone, fine, light-orange; trace gray siltstone----- | 55 | 60 |
| Sandstone, very fine, light-yellow----- | 60 | 65 |
| Sandstone, very fine, yellow-white----- | 65 | 70 |
| Sandstone, very fine, yellow-white----- | 70 | 75 |
| Sandstone, very fine, yellow-white----- | 75 | 80 |
| Sandstone, very fine, yellow-white----- | 80 | 85 |

Drill-hole W-OWP-4-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, gray----- | 85 | 90 |
| Sandstone, fine, gray; trace dark-gray carbonaceous shale---- | 90 | 95 |
| Sandstone, fine, gray; trace dark-gray carbonaceous shale---- | 95 | 100 |
| Sandstone, fine, gray; trace dark-gray carbonaceous shale---- | 100 | 105 |
| Shale, carbonaceous, dark-gray; trace coal; gray very fine sandstone; pyrite----- | 105 | 110 |
| Shale, carbonaceous, dark-gray; trace coal; gray very fine sandstone; pyrite----- | 110 | 115 |
| Siltstone, carbonaceous, dark-gray; minor gray very fine sandstone; dark-gray carbonaceous shale; trace coal----- | 115 | 120 |
| Siltstone, carbonaceous, dark-gray; minor gray very fine sandstone; dark-gray carbonaceous shale; trace coal----- | 120 | 125 |
| Siltstone, carbonaceous, dark-gray; minor gray very fine sandstone; dark-gray carbonaceous shale; trace coal----- | 125 | 130 |
| Shale, bentonitic, light-gray; trace dark-gray carbonaceous siltstone----- | 130 | 135 |
| Siltstone, carbonaceous, dark-gray----- | 135 | 140 |
| Sandstone, carbonaceous, very fine, gray; minor dark-gray carbonaceous siltstone; trace pyrite----- | 140 | 145 |
| Sandstone, carbonaceous, very fine, gray; minor dark-gray carbonaceous siltstone; trace pyrite----- | 145 | 150 |
| Sandstone, carbonaceous, very fine, gray; minor dark-gray carbonaceous siltstone; trace pyrite----- | 150 | 155 |

Drill-hole W-OWP-4-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, carbonaceous, dark-gray; minor gray shale; gray siltstone----- | 155 | 160 |
| Siltstone, dark-gray; minor dark-gray carbonaceous siltstone; black carbonaceous shale; trace coal----- | 160 | 165 |
| Sandstone, carbonaceous, fine, gray; trace dark-gray car- bonaceous siltstone----- | 165 | 170 |
| Sandstone, carbonaceous, fine, gray; trace dark-gray car- bonaceous siltstone----- | 170 | 175 |
| Sandstone, carbonaceous, fine, gray; trace dark-gray car- bonaceous siltstone----- | 175 | 180 |
| Siltstone, carbonaceous, dark-gray; minor gray sandy silt- stone; trace coal; gray fine carbonaceous sandstone----- | 180 | 185 |
| Shale, silty, gray----- | 185 | 190 |
| Shale, silty, gray; trace dark-gray carbonaceous shale; gray siltstone----- | 190 | 195 |
| Shale, silty, gray; trace dark-gray carbonaceous shale; gray siltstone----- | 195 | 200 |
| Siltstone, carbonaceous, dark-gray; minor gray very fine sandstone----- | 200 | 205 |
| Siltstone, carbonaceous, dark-gray; minor gray very fine sandstone----- | 205 | 210 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous sandy siltstone----- | 210 | 215 |

Drill-hole W-OWP-4-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor dark-gray carbonaceous sandy siltstone----- | 215 | 220 |
| Sandstone, fine, gray; trace dark-gray carbonaceous siltstone----- | 220 | 225 |
| Sandstone, fine, gray; trace dark-gray carbonaceous siltstone----- | 225 | 230 |
| Sandstone, fine, gray; trace dark-gray carbonaceous siltstone; trace white very fine sandstone; yellow shale----- | 230 | 235 |
| Sandstone, fine to medium, gray----- | 235 | 240 |
| Sandstone, fine to medium, gray----- | 240 | 245 |
| Sandstone, fine to medium, gray----- | 245 | 250 |
| Sandstone, fine to medium, gray; trace olive-yellow shale---- | 250 | 255 |
| Sandstone, fine, gray; trace gray-green shale; gray siltstone----- | 255 | 260 |
| Sandstone, fine, gray; trace gray-green shale; gray siltstone----- | 260 | 265 |
| Siltstone, carbonaceous, dark-gray; trace red medium sandstone----- | 265 | 270 |
| Siltstone, carbonaceous, dark-gray; trace red medium sandstone; trace gray siltstone----- | 270 | 275 |
| Siltstone, carbonaceous, dark-gray; trace red medium sandstone; trace gray siltstone----- | 275 | 280 |
| Siltstone, carbonaceous, dark-gray; trace red medium sandstone; trace gray siltstone----- | 280 | 285 |

Drill-hole W-OWP-4-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, carbonaceous, dark-gray; minor gray siltstone; gray very fine sandstone----- | 285 | 290 |
| Siltstone, carbonaceous, dark-gray; minor gray siltstone; gray very fine sandstone----- | 290 | 295 |
| Siltstone, carbonaceous, dark-gray; minor gray siltstone; gray very fine sandstone; trace yellow siltstone----- | 295 | 300 |
| Siltstone, carbonaceous, dark-gray; minor gray siltstone; gray very fine sandstone; trace yellow siltstone----- | 300 | 305 |
| Siltstone, carbonaceous, dark-gray; minor gray siltstone; gray very fine sandstone; trace yellow siltstone----- | 305 | 310 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone; trace gray shale----- | 310 | 315 |
| Sandstone, very fine; gray; minor dark-gray carbonaceous siltstone; trace gray shale----- | 315 | 320 |
| Siltstone, gray----- | 320 | 325 |
| Siltstone, gray; minor gray fine sandstone; trace yellow fine sandstone----- | 325 | 330 |
| Siltstone, carbonaceous, dark-gray; minor gray siltstone; gray fine sandstone----- | 330 | 335 |
| Siltstone, gray-brown; minor dark-gray carbonaceous siltstone----- | 335 | 340 |
| Siltstone, gray-brown; minor dark-gray carbonaceous siltstone----- | 340 | 345 |
| Sandstone, very fine, yellow-brown; minor dark-gray carbon- aceous siltstone; gray shale----- | 345 | 350 |

Drill-hole W-OWP-4-AL - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, yellow-brown; minor dark-gray carbonaceous siltstone; gray shale----- | 350 | 355 |
| Sandstone, very fine, yellow-brown; minor dark-gray carbonaceous siltstone; gray shale----- | 355 | 360 |
| Sandstone, very fine, yellow-brown; minor dark-gray carbonaceous siltstone; gray shale----- | 360 | 365 |
| Sandstone, very fine, yellow-brown; minor dark-gray carbonaceous siltstone; gray shale----- | 365 | 370 |
| Siltstone, sandy, gray; minor dark-gray carbonaceous siltstone; trace gray very fine sandstone----- | 370 | 375 |
| Siltstone, sandy, gray; minor dark-gray carbonaceous siltstone; trace gray very fine sandstone----- | 375 | 380 |
| Sandstone, very fine, brown-gray; minor gray sandy siltstone; trace dark-gray carbonaceous siltstone----- | 380 | 385 |
| Sandstone, very fine, brown-gray; minor gray sandy siltstone; trace dark-gray carbonaceous siltstone----- | 385 | 390 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; trace yellow very fine sandstone----- | 390 | 395 |
| Siltstone, gray; minor dark-gray carbonaceous siltstone; trace yellow very fine sandstone----- | 395 | 400 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous siltstone; trace yellow shale----- | 400 | 405 |
| No recovery----- | 405 | 410 |

Drill-hole W-OWP-4-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| No recovery----- | 410 | 415 |
| No recovery----- | 415 | 420 |
| No recovery----- | 420 | 425 |
| Shale, gray; trace dark-gray carbonaceous shale; white shale- | 425 | 430 |
| Shale, gray; trace dark-gray carbonaceous shale; white shale- | 430 | 435 |
| Shale, gray; trace dark-gray carbonaceous shale; white shale- | 435 | 440 |
| Shale, gray; trace dark-gray carbonaceous shale; white shale; trace coal----- | 440 | 445 |
| Shale, gray; trace dark-gray carbonaceous shale; white shale; trace coal----- | 445 | 450 |
| Shale, gray; trace dark-gray carbonaceous shale; white shale- | 450 | 455 |
| Shale, gray; trace dark-gray carbonaceous shale; white shale; trace gray siltstone----- | 455 | 460 |
| Shale, gray; trace dark-gray carbonaceous shale; white shale; trace gray siltstone----- | 460 | 465 |
| Shale, gray; trace dark-gray carbonaceous shale; white shale; trace gray siltstone----- | 465 | 470 |
| Shale, gray; trace dark-gray carbonaceous shale; white shale; trace gray siltstone----- | 470 | 475 |
| Siltstone, sandy, gray; minor dark-gray carbonaceous silt- stone; gray shale; tan shale; white shale----- | 475 | 480 |
| Siltstone, sandy, gray; minor dark-gray carbonaceous silt- stone; gray shale; tan shale; white shale; trace coal----- | 480 | 485 |

Drill-hole W-OWP-4-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, sandy, gray; minor dark-gray carbonaceous siltstone; gray shale; tan shale; white shale; trace coal; trace orange fine sandstone----- | 485 | 490 |
| Siltstone, sandy, gray; minor dark-gray carbonaceous siltstone; gray shale; tan shale; white shale; trace coal; trace orange fine sandstone----- | 490 | 495 |
| Siltstone, sandy, gray; minor dark-gray carbonaceous siltstone; gray shale; tan shale; white shale; trace coal; trace orange fine sandstone; minor dark-gray shale----- | 495 | 500 |
| Siltstone, sandy, gray; minor dark-gray carbonaceous siltstone; gray shale; tan shale; white shale; trace coal; trace orange fine sandstone; minor dark-gray shale----- | 500 | 505 |
| Siltstone, sandy, gray; minor dark-gray carbonaceous siltstone; gray shale; tan shale; white shale; trace coal; trace orange fine sandstone; minor dark-gray shale----- | 505 | 510 |
| Sandstone, very fine, light-gray; minor gray siltstone; tan shale; trace white shale; coal----- | 510 | 515 |
| Sandstone, very fine light-gray; minor gray siltstone; tan shale; trace white shale; coal; minor dark-gray carbonaceous shale----- | 515 | 520 |
| Sandstone, very fine, light-gray; minor gray siltstone; tan shale; trace white shale; coal; minor dark-gray carbonaceous shale----- | 520 | 525 |

Drill-hole W-OWP-4-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor gray siltstone; tan shale; trace white shale; coal; minor dark-gray carbonaceous shale----- | 525 | 530 |
| No recovery----- | 530 | 710 |
| Shale, carbonaceous, dark-gray; minor light-gray very fine sandstone; gray siltstone----- | 710 | 715 |
| Shale, carbonaceous, dark-gray; minor light-gray very fine sandstone; gray siltstone----- | 715 | 720 |
| No recovery----- | 720 | 725 |
| No recovery----- | 725 | 730 |
| Siltstone, gray; minor dark-gray carbonaceous shale; light- gray very fine sandstone----- | 730 | 735 |
| Siltstone, gray; minor dark-gray carbonaceous shale; light- gray very fine sandstone; trace coal----- | 735 | 740 |
| Siltstone, gray; minor dark-gray carbonaceous shale; light- gray very fine sandstone; trace coal----- | 740 | 745 |
| Siltstone, gray; minor dark-gray carbonaceous shale; light- gray very fine sandstone; trace coal----- | 745 | 750 |
| Shale, gray; minor dark-gray carbonaceous shale----- | 750 | 755 |
| Siltstone, carbonaceous, gray; minor gray shale; dark-gray carbonaceous shale; trace coal----- | 755 | 760 |
| Siltstone, carbonaceous, gray; minor gray shale; dark-gray carbonaceous shale; trace coal----- | 760 | 765 |

Drill-hole W-OWP-4-AL - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, carbonaceous, gray; minor gray shale; dark-gray carbonaceous shale; trace coal----- | 765 | 770 |
| Coal; trace dark-gray carbonaceous shale; gray siltstone; orange fine sandstone----- | 770 | 775 |
| Sandstone, very fine, light-gray; minor gray siltstone; trace orange medium sandstone; coal----- | 775 | 780 |
| No recovery----- | 780 | 785 |
| No recovery----- | 785 | 790 |
| No recovery----- | 790 | 795 |
| No recovery----- | 795 | 800 |
| Shale, gray; minor dark-gray carbonaceous shale; trace white shale----- | 800 | 805 |
| Shale, gray; minor dark-gray shale----- | 805 | 810 |
| Shale, gray; minor dark-gray shale----- | 810 | 815 |
| Shale, gray; minor dark-gray shale----- | 815 | 820 |
| Shale, gray; minor dark-gray shale; minor gray siltstone----- | 820 | 825 |
| Shale, gray; minor coal; trace dark-gray carbonaceous shale-- | 825 | 830 |
| Shale, gray; minor coal; trace dark-gray carbonaceous shale-- | 830 | 835 |
| Shale, gray; minor coal; trace dark-gray carbonaceous shale-- | 835 | 840 |
| Siltstone, gray; minor dark-gray shale; black carbonaceous shale; trace orange fine sandstone----- | 840 | 845 |
| Coal; minor gray shale----- | 845 | 850 |
| Shale, gray; minor dark-gray carbonaceous shale; trace coal-- | 850 | 855 |

Drill-hole W-OWP-4-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; minor gray shale; coal----- | 855 | 860 |
| Siltstone, gray; minor gray shale; coal----- | 860 | 865 |
| Sandstone, fine, gray; minor coal; dark-gray carbonaceous shale----- | 865 | 870 |
| No recovery----- | 870 | 875 |
| No recovery----- | 875 | 880 |
| No recovery----- | 880 | 885 |
| Sandstone, fine, gray; minor coal----- | 885 | 890 |
| Sandstone, fine, gray; minor coal----- | 890 | 895 |
| Shale, dark-gray; minor dark-gray carbonaceous shale----- | 895 | 900 |
| Shale, dark-gray; minor dark-gray carbonaceous shale----- | 900 | 905 |
| Shale, dark-gray; minor dark-gray carbonaceous shale----- | 905 | 910 |
| Total depth sampled - 910 ft. | | |

Drill-hole W-OWP-5-AL

SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 22, T. 22 S., R. 4 E., Salt Lake Principal Meridian, Acord Lakes quadrangle, Sevier County, Utah; collar elevation 8,220 ft; begun October 21, 1976, completed October 25, 1976; sampled by L. F. Blanchard, J. V. Roberts, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply to 0.3048.]

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Soil----- | 0 | 5 |
| Soil----- | 5 | 10 |
| Shale, silty, olive-yellow----- | 10 | 15 |
| Siltstone, gray----- | 15 | 20 |
| Sandstone, medium, brown----- | 20 | 25 |
| Sandstone, medium, brown----- | 25 | 30 |
| Sandstone, medium, brown----- | 30 | 35 |
| Sandstone, medium, brown; minor gray shale----- | 35 | 40 |
| Shale, carbonaceous, dark-gray----- | 40 | 45 |
| Shale, carbonaceous, dark-gray----- | 45 | 50 |
| Shale, carbonaceous, dark-gray; minor yellow-brown silty shale----- | 50 | 55 |
| Shale, carbonaceous, dark-gray; minor yellow-brown silty shale----- | 55 | 60 |
| Shale, carbonaceous, dark-gray; minor yellow-brown silty shale----- | 60 | 65 |
| Shale, carbonaceous, dark-gray; minor yellow-brown silty shale----- | 65 | 70 |
| Shale, carbonaceous, dark-gray; minor yellow-brown silty shale----- | 70 | 75 |

Drill-hole W-OWP-5-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, carbonaceous, dark-gray; minor yellow-brown silty shale----- | 75 | 80 |
| Sandstone, fine, light-yellow----- | 80 | 85 |
| Sandstone, fine, light-yellow; minor white very fine sandstone----- | 85 | 90 |
| No recovery----- | 90 | 95 |
| Sandstone, fine, light-yellow; minor white very fine sandstone----- | 95 | 100 |
| Sandstone, fine, light-gray; minor gray shale----- | 100 | 105 |
| Sandstone, fine, light-gray; minor gray shale----- | 105 | 110 |
| Sandstone, fine, brown; trace gray shale; dark-gray carbonaceous shale----- | 110 | 115 |
| Sandstone, fine, brown; trace gray shale; dark-gray carbonaceous shale----- | 115 | 120 |
| Sandstone, fine, yellow-brown----- | 120 | 125 |
| Sandstone, fine, yellow-brown----- | 125 | 130 |
| Sandstone, fine, yellow-brown----- | 130 | 135 |
| Sandstone, fine, gray; minor gray siltstone----- | 135 | 140 |
| Shale, gray; minor dark-gray carbonaceous shale----- | 140 | 145 |
| Shale, gray; minor dark-gray carbonaceous shale----- | 145 | 150 |
| Shale, gray; minor dark-gray carbonaceous shale----- | 150 | 155 |
| Shale, gray; minor dark-gray carbonaceous shale----- | 155 | 160 |
| Siltstone, sandy, gray----- | 160 | 165 |

Drill-hole W-OWP-5-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, sandy, gray----- | 165 | 170 |
| Siltstone, sandy, gray----- | 170 | 175 |
| Siltstone, sandy, gray; minor gray shale----- | 175 | 180 |
| Siltstone, sandy, gray; minor gray shale; trace dark-gray carbonaceous shale----- | 180 | 185 |
| Shale, gray----- | 185 | 190 |
| Shale, gray----- | 190 | 195 |
| Siltstone, gray----- | 195 | 200 |
| Siltstone, gray----- | 200 | 205 |
| Siltstone, gray----- | 205 | 210 |
| Sandstone, medium, gray; trace gray siltstone----- | 210 | 215 |
| Shale, gray; minor dark-gray carbonaceous shale; gray medium sandstone----- | 215 | 220 |
| Shale, gray; minor dark-gray carbonaceous shale; gray medium sandstone----- | 220 | 225 |
| Shale, gray; minor dark-gray carbonaceous shale; gray medium sandstone----- | 225 | 230 |
| Shale, gray; minor dark-gray carbonaceous shale; gray medium sandstone----- | 230 | 235 |
| Shale, gray; minor dark-gray carbonaceous shale; gray medium sandstone----- | 235 | 240 |
| Shale, gray; minor gray siltstone; trace dark-gray carbon- aceous shale----- | 240 | 245 |

Drill-hole W-OWP-5-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor gray siltstone; trace dark-gray carbon- aceous shale----- | 245 | 250 |
| Shale, gray; minor gray siltstone; trace dark-gray carbon- aceous shale----- | 250 | 255 |
| Shale, gray; minor gray siltstone; trace dark-gray carbon- aceous shale----- | 255 | 260 |
| Shale, gray; minor gray siltstone; trace dark-gray carbon- aceous shale----- | 260 | 265 |
| Shale, gray; minor gray siltstone; trace dark-gray carbon- aceous shale----- | 265 | 270 |
| Shale, gray; minor gray siltstone; trace dark-gray carbon- aceous shale----- | 270 | 275 |
| Shale, carbonaceous, dark-gray; minor gray shale; gray very fine sandstone----- | 275 | 280 |
| Shale, gray; minor dark-gray carbonaceous shale; trace coal-- | 280 | 285 |
| Shale, gray; minor dark-gray carbonaceous shale; trace coal-- | 285 | 290 |
| Shale, gray; minor gray siltstone----- | 290 | 295 |
| Shale, gray; minor gray siltstone----- | 295 | 300 |
| Shale, gray; minor gray siltstone; minor dark-gray carbon- aceous shale----- | 300 | 305 |
| Shale, gray; minor gray siltstone; minor dark-gray carbon- aceous shale----- | 305 | 310 |
| Shale, gray; minor gray siltstone; minor dark-gray carbon- aceous shale----- | 310 | 315 |

Drill-hole W-OWP-5-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor gray siltstone; minor dark-gray carbonaceous shale; minor tan very fine sandstone----- | 315 | 320 |
| Shale, gray; minor gray siltstone; minor dark-gray carbonaceous shale; minor tan very fine sandstone----- | 320 | 325 |
| Shale, gray; minor gray siltstone; minor dark-gray carbonaceous shale; minor tan very fine sandstone----- | 325 | 330 |
| Siltstone, gray; minor gray shale; dark-gray carbonaceous shale----- | 330 | 335 |
| Siltstone, gray; minor gray shale; dark-gray carbonaceous shale----- | 335 | 340 |
| Siltstone, gray; minor gray shale; dark-gray carbonaceous shale; trace coal----- | 340 | 345 |
| Shale, gray; minor dark-gray carbonaceous shale; coal; trace gray fine sandstone; pyrite----- | 345 | 350 |
| Shale, gray; minor dark-gray carbonaceous shale; coal; trace gray fine sandstone; pyrite----- | 350 | 355 |
| Shale, gray; minor dark-gray carbonaceous shale; coal; trace gray fine sandstone; pyrite----- | 355 | 360 |
| Shale, gray; minor dark-gray carbonaceous shale; coal; trace gray fine sandstone; pyrite----- | 360 | 365 |
| Shale, gray; minor dark-gray carbonaceous shale; coal; trace gray fine sandstone; pyrite----- | 365 | 370 |

Drill-hole W-OWP-5-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor dark-gray carbonaceous shale; coal; trace gray fine sandstone; pyrite----- | 370 | 375 |
| Shale, gray; minor dark-gray carbonaceous shale; coal; trace gray fine sandstone; pyrite----- | 375 | 380 |
| Shale, gray; minor dark-gray carbonaceous shale; trace dark- gray carbonaceous siltstone; coal----- | 380 | 385 |
| Siltstone, gray; minor dark-gray carbonaceous shale----- | 385 | 390 |
| Siltstone, gray; minor dark-gray carbonaceous shale----- | 390 | 395 |
| Sandstone, very fine, light-gray; minor gray siltstone; trace black carbonaceous shale----- | 395 | 400 |
| Sandstone, very fine, light-gray; minor gray siltstone; trace trace black carbonaceous shale----- | 400 | 405 |
| Siltstone, gray; minor dark-gray carbonaceous shale----- | 405 | 410 |
| Siltstone, gray; minor dark-gray carbonaceous shale----- | 410 | 415 |
| Siltstone, dark-gray; minor dark-gray carbonaceous shale----- | 415 | 420 |
| Siltstone, dark-gray; minor dark-gray carbonaceous shale----- | 420 | 425 |
| Shale, silty, light-gray; minor dark-gray carbonaceous shale; trace coal----- | 425 | 430 |
| Siltstone, light-gray; trace coal; gray fine sandstone----- | 430 | 435 |
| Siltstone, light-gray; minor dark-gray shale; coal----- | 435 | 440 |
| Siltstone, light-gray; minor dark-gray shale----- | 440 | 445 |
| Siltstone, light-gray; minor dark-gray shale----- | 445 | 450 |
| Siltstone, light-gray; minor dark-gray shale----- | 450 | 455 |

Drill-hole W-OWP-5-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, light-gray; minor dark-gray shale; trace black carbonaceous shale----- | 455 | 460 |
| Siltstone, gray; minor dark-gray shale----- | 460 | 465 |
| Siltstone, gray; minor dark-gray shale; trace black carbonaceous shale----- | 465 | 470 |
| Siltstone, gray; minor dark-gray shale; trace black carbonaceous shale----- | 470 | 475 |
| Siltstone, gray; minor dark-gray shale; trace black carbonaceous shale----- | 475 | 480 |
| Siltstone, gray; minor coal; trace gray shale----- | 480 | 485 |
| No recovery----- | 485 | 490 |
| Shale, dark-gray; minor gray siltstone; trace black carbonaceous shale----- | 490 | 495 |
| Sandstone, very fine, gray; minor dark-gray shale----- | 495 | 500 |
| Siltstone, gray; minor dark-gray shale; trace black carbonaceous shale; coal----- | 500 | 505 |
| Siltstone, gray; minor dark-gray shale; trace black carbonaceous shale; coal----- | 505 | 510 |
| Siltstone, gray; minor dark-gray shale; trace black carbonaceous shale; coal----- | 510 | 515 |
| Siltstone, gray; minor dark-gray shale; trace black carbonaceous shale; coal----- | 515 | 520 |
| Siltstone, gray----- | 520 | 525 |

Drill-hole W-OWP-5-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray----- | 525 | 530 |
| Sandstone, very fine, light-gray----- | 530 | 535 |
| Sandstone, very fine, light-gray; trace dark-gray carbon- aceous shale----- | 535 | 540 |
| Siltstone, gray----- | 540 | 545 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous shale----- | 545 | 550 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous shale----- | 550 | 555 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous shale----- | 555 | 560 |
| Siltstone, light-gray; minor gray shale; trace yellow-green shale----- | 560 | 565 |
| Sandstone, very fine, light-gray----- | 565 | 570 |
| Sandstone, very fine, light-gray----- | 570 | 575 |
| Siltstone, gray; minor dark-gray carbonaceous shale----- | 575 | 580 |
| Siltstone, gray; minor dark-gray carbonaceous shale----- | 580 | 585 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous shale----- | 585 | 590 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous shale----- | 590 | 595 |
| Sandstone, very fine, gray; minor dark-gray carbonaceous shale----- | 595 | 600 |

Drill-hole W-OWP-5-AL - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; minor gray shale; trace dark-gray carbonaceous shale----- | 600 | 605 |
| Siltstone, gray; trace yellow-green shale----- | 605 | 610 |
| Siltstone, gray; trace yellow-green shale----- | 610 | 615 |
| Siltstone, gray; trace yellow-green shale----- | 615 | 620 |
| Sandstone, very fine, light-gray; trace gray siltstone; dark-gray carbonaceous shale----- | 620 | 625 |
| Sandstone, very fine, light-gray; minor coal; trace gray siltstone----- | 625 | 630 |
| Siltstone, gray; minor gray shale----- | 630 | 635 |
| Siltstone, gray; minor gray shale----- | 635 | 640 |
| Sandstone, very fine, light-gray; minor gray siltstone----- | 640 | 645 |
| Siltstone, gray----- | 645 | 650 |
| Siltstone, gray----- | 650 | 655 |
| Siltstone, gray----- | 655 | 660 |
| Siltstone, gray----- | 660 | 665 |
| Siltstone, gray; trace dark-gray carbonaceous shale; gray shale----- | 665 | 670 |
| Siltstone, gray; trace dark-gray carbonaceous shale; gray shale----- | 670 | 675 |
| Siltstone, gray; trace dark-gray carbonaceous shale; gray shale----- | 675 | 680 |
| Sandstone, very fine, gray; minor gray siltstone----- | 680 | 685 |

Drill-hole W-OWP-5-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, gray; trace coal----- | 685 | 690 |
| Siltstone, gray; trace coal; minor dark-gray carbonaceous shale----- | 690 | 695 |
| Siltstone, gray; trace coal; minor dark-gray carbonaceous shale; trace yellow-green shale----- | 695 | 700 |
| Shale, gray; minor dark-gray carbonaceous shale----- | 700 | 705 |
| Shale, gray; minor dark-gray carbonaceous shale; minor dark- gray carbonaceous siltstone----- | 705 | 710 |
| Shale, gray; minor dark-gray carbonaceous shale; minor gray carbonaceous siltstone----- | 710 | 715 |
| Sandstone, very fine, light-gray; trace gray shale; white shale; dark-gray carbonaceous shale----- | 715 | 720 |
| Sandstone, very fine, light-gray; trace gray shale; white shale; dark-gray carbonaceous shale----- | 720 | 725 |
| Shale, gray; minor dark-gray carbonaceous shale----- | 725 | 730 |
| Shale, gray; minor dark-gray carbonaceous shale----- | 730 | 735 |
| Shale, gray; minor dark-gray carbonaceous shale----- | 735 | 740 |
| Shale, gray; minor dark-gray carbonaceous shale----- | 740 | 745 |
| Shale, gray; minor dark-gray carbonaceous shale----- | 745 | 750 |
| Sandstone, very fine, light-gray; trace dark-gray carbon- aceous siltstone----- | 750 | 755 |
| Sandstone, very fine, light-gray; trace dark-gray carbon- aceous siltstone; trace coal----- | 755 | 760 |

Drill-hole W-OWP-5-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, dark-gray; minor light-gray very fine sandstone; trace coal----- | 760 | 765 |
| Sandstone, very fine, light-gray; trace gray siltstone; gray shale----- | 765 | 770 |
| Sandstone, very fine, light-gray; trace gray siltstone; gray shale----- | 770 | 775 |
| No recovery----- | 775 | 780 |
| Siltstone, gray; minor gray shale; carbonaceous shale----- | 780 | 785 |
| Siltstone, gray; minor light-brown siltstone; carbonaceous shale; trace gray shale----- | 785 | 790 |
| Siltstone, gray; minor light-gray very fine sandstone; light- brown siltstone----- | 790 | 795 |
| Siltstone, gray; minor light-brown siltstone; carbonaceous shale; trace gray shale----- | 795 | 800 |
| Siltstone, gray; minor light-brown siltstone; carbonaceous shale; trace gray shale----- | 800 | 805 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous siltstone; trace gray shale----- | 805 | 810 |
| Sandstone, very fine, light-gray; minor dark-gray carbon- aceous siltstone; trace gray shale; trace yellow siltstone----- | 810 | 815 |
| No recovery----- | 815 | 820 |

Drill-hole W-OWP-5-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, carbonaceous, dark-gray; trace gray very fine sandstone; coal----- | 820 | 825 |
| Sandstone, very fine, light-gray; trace dark-gray siltstone; coal; gray shale----- | 825 | 830 |
| Siltstone, carbonaceous, dark-gray-brown; trace light-gray very fine sandstone; carbonaceous shale----- | 830 | 835 |
| Total depth sampled - 835 ft. | | |

Drill-hole W-OWP-6-AL

SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 14, T. 22 S., R. 4 E., Salt Lake Principal Meridian, Acord Lakes quadrangle, Sevier County, Utah; collar elevation 8,290 ft; begun October 25, 1976, completed October 29, 1976; sampled by L. F. Blanchard, J. V. Roberts, and E. G. Ellis.

[All measurements are in feet; to convert to meters, multiply by 0.3048.]

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, yellow; minor tan shale; gray shale; gray very fine sandstone----- | 0 | 5 |
| Shale, dark-gray; minor white fine sandstone; yellow fine sandstone----- | 5 | 10 |
| Shale, dark-gray; minor white fine sandstone; yellow fine sandstone----- | 10 | 15 |
| Sandstone, fine, tan to orange----- | 15 | 20 |
| Sandstone, fine, tan to orange; trace dark-gray carbonaceous siltstone; gray shale----- | 20 | 25 |
| Sandstone, fine, tan to orange; trace dark-gray carbonaceous siltstone; gray shale----- | 25 | 30 |
| Sandstone, fine, tan to orange; trace dark-gray carbonaceous siltstone; gray shale----- | 30 | 35 |
| Sandstone, fine, tan to orange; trace dark-gray carbonaceous siltstone; gray shale----- | 35 | 40 |
| Sandstone, fine, tan to orange; trace dark-gray carbonaceous siltstone; gray shale----- | 40 | 45 |

Drill-hole W-OWP-6-AL - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|---|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine, tan to orange; trace dark-gray carbonaceous siltstone; gray shale----- | 45 | 50 |
| Sandstone, fine, light-tan----- | 50 | 55 |
| Sandstone, fine, light-tan----- | 55 | 60 |
| Sandstone, fine, light-tan----- | 60 | 65 |
| Sandstone, fine, light-tan----- | 65 | 70 |
| Siltstone, sandy, light-tan; trace gray shale----- | 70 | 75 |
| Sandstone, very fine, light-tan; trace gray shale----- | 75 | 80 |
| Sandstone, very fine, light-tan; trace gray shale----- | 80 | 85 |
| Sandstone, very fine, light-tan; trace gray shale; trace dark-gray carbonaceous shale----- | 85 | 90 |
| No recovery----- | 90 | 95 |
| No recovery----- | 95 | 100 |
| Sandstone, very fine, light-tan; trace gray shale; dark-gray carbonaceous shale----- | 100 | 105 |
| Siltstone, carbonaceous, dark-gray----- | 105 | 110 |
| Siltstone, carbonaceous, dark-gray----- | 110 | 115 |
| No recovery----- | 115 | 120 |
| No recovery----- | 120 | 125 |
| No recovery----- | 125 | 130 |
| Sandstone, fine, gray----- | 130 | 135 |
| Shale, carbonaceous, black; minor gray shale; trace coal----- | 135 | 140 |
| Shale, carbonaceous, black; minor gray shale; trace coal; trace light-gray very fine sandstone----- | 140 | 145 |

Drill-hole W-OWP-6-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Siltstone, sandy, light-gray; minor gray shale; black carbonaceous shale; tan shale; light-gray very fine sandstone---- | 145 | 150 |
| Siltstone, sandy, light-gray; minor gray shale; black carbonaceous shale; tan shale; light-gray very fine sandstone---- | 150 | 155 |
| Siltstone, sandy, light-gray; minor gray shale; black carbonaceous shale; tan shale; light-gray very fine sandstone; trace coal----- | 155 | 160 |
| Sandstone, very fine, light-gray; minor gray shale; trace black carbonaceous siltstone----- | 160 | 165 |
| Sandstone, very fine, light-gray; minor gray shale; trace black carbonaceous siltstone----- | 165 | 170 |
| Sandstone, very fine, light-gray; minor gray shale; trace black carbonaceous siltstone----- | 170 | 175 |
| Sandstone, very fine, light-gray; minor gray shale; trace black carbonaceous siltstone; minor tan shale----- | 175 | 180 |
| Sandstone, very fine, light-gray; minor gray shale; trace black carbonaceous siltstone; minor tan shale----- | 180 | 185 |
| Shale, gray; minor light-gray very fine sandstone; trace dark-gray carbonaceous siltstone----- | 185 | 190 |
| Shale, gray; minor light-gray very fine sandstone; trace dark-gray carbonaceous siltstone----- | 190 | 195 |
| Shale, gray; minor light-gray very fine sandstone; trace dark-gray carbonaceous siltstone----- | 195 | 200 |

Drill-hole W-OWP-6-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|---|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor light-gray very fine sandstone; trace dark-gray carbonaceous siltstone----- | 200 | 205 |
| Shale, gray; minor light-gray very fine sandstone; trace dark-gray carbonaceous siltstone----- | 205 | 210 |
| Shale, gray; minor light-gray very fine sandstone; trace dark-gray carbonaceous siltstone----- | 210 | 215 |
| Sandstone, very fine, light-gray; minor gray shale; black carbonaceous siltstone; trace orange medium sandstone----- | 215 | 220 |
| Sandstone, very fine, light-gray; minor gray shale; black carbonaceous siltstone; trace orange medium sandstone----- | 220 | 225 |
| Sandstone, very fine, light-gray; minor gray shale; black carbonaceous siltstone; trace orange medium sandstone----- | 225 | 230 |
| Siltstone, gray; minor dark-gray carbonaceous shale; dark- gray carbonaceous sandstone----- | 230 | 235 |
| Siltstone, gray; minor dark-gray carbonaceous shale; dark- gray carbonaceous sandstone----- | 235 | 240 |
| Siltstone, sandy, gray; minor dark-gray carbonaceous shale; trace light-gray very fine sandstone----- | 240 | 245 |
| Shale, light-gray; minor gray siltstone; dark-gray carbon- aceous shale----- | 245 | 250 |
| Shale, light-gray; minor gray siltstone; dark-gray carbon- aceous shale; trace gray very fine sandstone; pyrite----- | 250 | 255 |

Drill-hole W-OWP-6-AL - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, very fine, light-gray; minor gray carbonaceous shale; light-gray shale----- | 255 | 260 |
| Sandstone, very fine, light-gray; minor gray carbonaceous shale; light-gray shale----- | 260 | 265 |
| Sandstone, very fine, light-gray; minor gray carbonaceous shale; light-gray shale----- | 265 | 270 |
| Sandstone, very fine, light-gray; minor light-gray shale----- | 270 | 275 |
| Sandstone, very fine, light-gray; minor light-gray shale; minor dark-gray carbonaceous shale----- | 275 | 280 |
| Shale, gray; minor gray sandy siltstone; light-gray very fine sandstone----- | 280 | 285 |
| Siltstone, sandy, slightly carbonaceous, gray; minor gray shale----- | 285 | 290 |
| Siltstone, sandy, slightly carbonaceous, gray; minor gray shale----- | 290 | 295 |
| Shale, gray; minor dark-gray carbonaceous siltstone; trace coal----- | 295 | 300 |
| Sandstone, slightly carbonaceous, very fine, light-gray; trace dark-gray carbonaceous shale----- | 300 | 305 |
| Sandstone, slightly carbonaceous, very fine, light-gray; trace dark-gray carbonaceous shale; minor gray shale----- | 305 | 310 |
| Sandstone, slightly carbonaceous, very fine, light-gray; trace dark-gray carbonaceous shale; minor gray shale----- | 310 | 315 |

Drill-hole W-OWP-6-AL - continued

| <u>Lithologic description</u> | Depth (ft) | |
|--|-------------|-----------|
| | <u>From</u> | <u>To</u> |
| Shale, gray; minor light-gray very fine sandstone----- | 315 | 320 |
| Shale, gray; minor light-gray very fine sandstone----- | 320 | 325 |
| Siltstone, gray; minor gray shale; trace coal----- | 325 | 330 |
| Siltstone, gray; minor gray shale; trace coal----- | 330 | 335 |
| Siltstone, gray; minor gray shale; trace coal----- | 335 | 340 |
| Siltstone, gray; minor gray shale----- | 340 | 345 |
| Sandstone, fine, yellow-brown; minor gray siltstone; gray carbonaceous shale----- | 345 | 350 |
| Sandstone, fine, yellow-brown; minor gray siltstone; gray carbonaceous shale----- | 350 | 355 |
| Sandstone, fine, yellow-brown; minor gray siltstone; gray carbonaceous shale----- | 355 | 360 |
| Siltstone, fine, yellow-brown; minor gray siltstone; gray carbonaceous shale----- | 360 | 365 |
| Siltstone, gray; minor dark-gray carbonaceous shale; trace yellow-brown fine sandstone----- | 365 | 370 |
| Siltstone, gray; minor dark-gray carbonaceous shale; trace yellow-brown fine sandstone----- | 370 | 375 |
| Siltstone, gray; minor dark-gray carbonaceous shale; trace yellow-brown fine sandstone----- | 375 | 380 |
| Siltstone, gray; minor dark-gray carbonaceous shale; trace yellow-brown fine sandstone----- | 380 | 385 |

Drill-hole W-OWP-6-AL - continued

| <u>Lithologic description</u> | <u>Depth (ft)</u> | |
|--|-------------------|-----------|
| | <u>From</u> | <u>To</u> |
| Sandstone, fine to very fine, gray; trace black carbonaceous shale; white shale----- | 385 | 390 |
| Siltstone, gray----- | 390 | 395 |
| Sandstone, very fine, light-gray----- | 395 | 400 |
| Sandstone, very fine, light-gray----- | 400 | 405 |
| Sandstone, very fine, light-gray----- | 405 | 410 |
| Shale, gray; minor gray siltstone; black carbonaceous shale-- | 410 | 415 |
| Shale, gray; minor gray siltstone; black carbonaceous shale-- | 415 | 420 |
| Shale, white; trace gray siltstone; black carbonaceous shale-- | 420 | 425 |
| Shale, gray; minor gray siltstone; pyrite----- | 425 | 430 |
| Shale, gray; minor gray siltstone----- | 430 | 435 |
| Sandstone, very fine, gray----- | 435 | 440 |
| Sandstone, very fine, gray; trace gray shale----- | 440 | 445 |
| Sandstone, fine, gray; minor gray siltstone; trace carbonaceous shale----- | 445 | 450 |
| Sandstone, fine, gray; minor gray siltstone; trace carbonaceous shale----- | 450 | 455 |
| Siltstone, gray----- | 455 | 460 |
| Total depth sampled - 460 ft. | | |