

Morrow No. 1

2330'-2340' " "

2340'-2350' " "

2350'-2360' " "

2360'-2370' " "

2370'-2380' " "

2390'-2400' " "

2400'-2410' The basalt in this sample shows beginning stages of disintegration. The color is slightly yellowish. It contains a high percent of crystalline quartz and chalcedony.

2410'-2420' Sample contains a high percent of light gray shiny, soft material, identified as serpentine. This could have been formed by hydrothermal action on shale.

Note: First indication of being through the basalt formation.

2420'-2430' High percent serpentine.

2430'-2440' Similar in composition to sample 2420'-2430'.

2442' Over 90% serpentine.

2440'-2450' " "

2455' " "

2460'-2470' High percent serpentine.

2470'-2480' This sample contains over 50% of a very fine grained soft shale. Also, still an appreciable percent of serpentine. At this point the drilling operation is passing from the serpentine of the last 60 feet into a shale formation. The shale shows evidence of having been subjected to hydrothermal action. However, no leaching, and consequently the shale has retained its original colors, dark gray, gray brown, and almost black. The shale is uniform in texture: very fine grained and an abundance of minute interstices.

2480'-2490' Over 85% slightly altered fine grained shale.

2490'-2500' A continuation of the above shale.

2500'-2510' At this point the shale is yellowish brown. There is a pronounced change in the character of the shale. Indications are that it has been subjected to the influence of a gas, probably methane.

2510'-2520' The shale fragments are quite similar to sample 2500'-2510'. Some pieces of soft coal. Some of the shale fragments contain narrow, 1 to 3 more seams of coal.

2520'-2530' This sample contains a high percent of soft coal, which could

Morrow No. 1

be a variety of bituminous coal.

2530' Over 90% of soft coal mixed with fragments of shale. At this depth there was a constant showing of oil and gas.

2530'-2540' Mostly shale mixed with some coal.

2540'-2550' Mostly shale. An appreciable percent is highly altered due to hydrothermal action.

2550'-2560' A high percent of shale, some is bleached to light greenish white. Some highly rounded pebbles, which appear water worn.

2570'-2580' Similar to sample 2550'-2560'.

2580'-2590' Shale. A high percent of kaolinized shale.

2590'-2600' High percent shale.

2598' This sample is a mixture of dark brown, medium brown, brownish gray and light gray shale. Many fragments are soft and indicate alteration. No leaching, however, so original colors have not changed.

2600' Identical to sample 2598'.

2633' High percent of soft shale. An appreciable percent of soft coal.

2658' Similar to the above three samples.

2663' Similar to above four samples.

2668' Similar to 2663'.

2673' Bottom sample, 258 feet below the basalt contact. Practically all shale, most of which is soft. Low percent calcite.