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TECHNICAL MEMORANDUM NO. 125 - EXPLORATORY DRILLING ON FREY POINT MESA, WHITE CANYON AREA, SAN JUAN COUNTY, UTAH, CONTRACTS AT(30-1)-1361 AND AT(05-1)-221

SYMBOL: ED:LJM:DFS:EWO

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EXPLORATORY DRILLING ON FREY POINT MESA, WHITE CANYON AREA, SAN JUAN COUNTY, UTAH

ABSTRACT

Frey Point Mesa is in White Canyon, approximately 55 miles west of Blanding, San Juan County, Utah. The area is on the west flank of the Monument upwarp where exposed sedimentary rocks range from Permian to Jurassic (?) in age.

Exploratory drilling programs conducted from October 25, 1952 to March 30, 1953 and from November 14, 1953 to January 19, 1954 consisted of 128 diamond drill holes totaling 16,191.1 feet. Twelve diamond drill holes penetrated uranium deposits of ore grade; twenty-two other drill holes encountered deposits of sub-ore grade.

Uranium deposits in the White Canyon No.1 and Saddle channel localities on Frey Point Mesa are localized in Shinarump clastics containing an abundance of clayey and carbonaceous material deposited in paleostream channels cut into the underlying Moenkopi formation.

Uranium minerals include uraninite, uranopilite, johannite, uranophane, and metatorbernite. These occur as replacements of carbonaceous material and as disseminations in sandstone.

INTRODUCTION

Location and Access

Frey Point Mesa is in the southeastern part of the White Canyon area, San Juan County, Utah. It is reached by traveling 55 miles west of Blanding, Utah, on Utah Highway 95, a dirt road that connects Blanding with Hanksville, Utah. A 3 mile access road to the top of the mesa connects with Utah Highway 95, 10 miles west of the Natural Bridges National Monument road junction (fig. 1).

Purpose and Scope

The principal objectives of the exploratory diamond drilling programs conducted by the U. S. Atomic Energy Commission on Frey Point Mesa were (1) to determine the presence of minable uranium ore; (2) to

study the lithologic and structural characteristics of paleostream channels and their relation to ore occurrence; and (3) to accumulate geologic information essential for an appraisal of the uranium resources of the area. Drilling was done in four localities, on the White Canyon No. 1, Saddle, Point, and the Widow Maker channels (fig. 3).

Previous Work and Mining History

A reconnaissance of the White Canyon area was made between 1925 and 1929 by Gregory (1938). Studies of the uranium deposits in the area have been made by Smyth (1949), Dodd (1950), Frankovich (1951), Miller (1952 and 1953), Kelley (1954), and Oertell and Spencer (1957) for the U. S. Atomic Energy Commission and by Benson, et al. (1952), and Trites and Chew (1955) for the U. S. Geological Survey.

Mining has been intermittent on Frey Point Mesa since 1949. Approximately three thousand tons of uranium ore was shipped from the White Canyon No. 1 and Saddle mines between 1949 and 1957 by the White Canyon Mining Company of Cortez, Colorado.

GENERAL GEOLOGY

Sedimentary rocks exposed in the area range in age from the Permian Cutler formation to the Jurassic (?) Kayenta formation (Table 1). The nearest igneous rocks crop out in the Henry Mountains about 25 miles northwest and in the Abajo Mountains about 25 miles northeast of Frey Point Mesa. The area is on the west flank of the Monument upwarp; the beds locally strike N. 15° W. and dip $1\frac{1}{2}^{\circ}$ SW. Four sets of steeply dipping joints, listed in order of decreasing prominence, strike N. 55° W., N. 45° E., N. 85° W., and due north, are well defined in the sandstone strata. No faulting was observed in the immediate vicinity of Frey Point Mesa.

EXPLORATION PROGRAMS

Exploratory diamond drilling conducted by the U. S. Atomic Energy Commission on Frey Point Mesa consisted of 128 diamond drill holes totaling 16,191.1 feet (tables 2 and 3). Under contract no. AT(30-1)-1361, the Minerals Engineering Company of Grand Junction, Colorado, began operations on October 25, 1952, and terminated March 30, 1953. Ninety-three diamond drill holes were completed totaling 11,497.1 feet. On November 14, 1953, diamond drilling was resumed under contract no. AT(05-1)-221 by the Jones Core Drilling Company of Dallas, Texas, as recommended by Miller in 1952 to

further investigate the paleostream channel system in the area. The drilling contractor completed 35 diamond drill holes totaling 4,694.0 feet and terminated drilling operations in this locality on January 19, 1954.

The engineering concerned with the exploratory diamond drilling programs conducted on Frey Point Mesa has been reported by Richardson (1957-a and 1957-b).

GEOLOGY OF THE URANIUM DEPOSITS

Uranium deposits occur in Shinarump fluviatile sediments of late Triassic age that fill channels cut into the underlying Moenkopi formation. The Shinarump member consists of buff to gray, fine-grained to conglomeratic sandstone, gray carbonaceous siltstone, and gray to green mudstone. The sandstone beds are fair to poorly sorted and contain large granules and pebbles of quartz, quartzite, siltstone, and clay. Carbonaceous material is abundant in the basal scours and along the contacts between sandstone beds, ranging in size from finely comminuted material to fragments several inches in length. The thickness of the Shinarump member varies greatly, due to the irregularities of the underlying Moenkopi erosion surface, and to vertical or lateral gradation into overlying Monitor Butte sediments. Maximum thicknesses of up to 40 feet occur where the Shinarump fills paleostream channels cut into the Moenkopi formation. Locally on Frey Point in interchannel areas the Shinarump is absent as a result of non-deposition on topographically high parts of the Moenkopi surface.

The White Canyon No. 1 channel (fig. 3) trends approximately S. 50° W. and was delineated by diamond drilling for a distance of 3,600 feet. The upstream portion of the channel is well defined, but downstream it becomes broad and indistinct and turns abruptly to the north. The channel is about 100 feet wide where it enters the mapped area and is 500 feet wide on the west side of the mesa. The channel has an average depth of 10 feet and is marked by 2-to 4-foot depressions scoured along the floor.

The Saddle channel trends approximately N. 5° W. for a distance of 2,400 feet and then turns gradually and trends N. 70° W. This portion is the Point channel and was delineated for a distance of 6,300 feet to the northwestern extremity of Frey Point Mesa (fig. 3). A fork in the Saddle channel was delimited by drilling and contains a scour that trends N. 50° W. and is 10 feet deeper than the main Saddle channel (fig. 3). Whether this was contemporaneous with the Saddle channel or whether it pre- or post dates the Saddle channel is not known. Cronk (1956) concluded from sedimentary trend studies that the White Canyon No. 1, Saddle, and Point channels are portions of the same channel.

Southeast of the White Canyon No. 1 channel and trending parallel to it across Frey Point Mesa is the Widow Maker channel (fig. 3). The channel is approximately 200 feet wide and 10 feet deep. The floor is undulatory and is marked by shallow scour depressions along the bottom. The lower beds of the Shinarump in the Widow Maker channel contain relatively small amounts of clayey and carbonaceous materials. Abnormal radioactivity in drill holes FP-81 and FP-86 (Table 2) is associated with fragments of carbonized wood in basal sandstone of less than ore grade.

Uranium deposits of economic size and grade occur in the White Canyon No. 1 and Saddle channels. Only one drill hole FP-29 (Table 3), drilled on the Point channel penetrated ore grade material. This drill hole intersected 1.1 feet of rock averaging 0.61 percent U_3O_8. Uranium and copper minerals in the White Canyon No. 1 and Saddle channels occur in scour depressions in lenticular coarse-grained to conglomeratic sandstone beds. The beds contain cobbles of siltstone and clay that range up to 6 inches in diameter, large granules and pebbles of quartz, quartzite, siltstone and clay, and accumulations of carbonaceous material. The shape and size of the ore deposits are determined by the shape and size of the sandstone lenses in which the ore is localized. Locally, accumulations of carbonaceous material form the center of uranium mineral concentrations and constitute the richer concentrations of ore. In the White Canyon No. 1 and Saddle channels the ore-bearing sandstone beds range from less than a foot to 4 feet in thickness. Zones up to 6 feet thick were penetrated in drill holes FP-2 and FP-12 (Table 3), but these are composed of two or more beds of ore-bearing sandstone.

*MINERALOGY

Uraninite is the principal uranium mineral and occurs as microscopic grains replacing carbonaceous material and disseminated in sandstone.

Pyrite, chalcopyrite, bornite, and covellite are closely associated with uraninite and occur as scattered grains in both ore and barren rock.

Secondary uranium minerals, the sulfates uranopilite and johannite, the silicate uranophane, and the phosphate metatorbernite effloresce on the mine walls and on the outcrop.

The principal gangue minerals identified in the ore zone are quartz, feldspar, clay minerals, limonite, barite, and jarosite.

* This section is based on results of unpublished studies by E. B. Gross.

ORE GUIDES

The guides believed to be useful in exploration for uranium deposits on Frey Point Mesa are:

1. Uranium deposits are confined to paleostream channels filled with Shinarump sediments that unconformably overlie the Moenkopi formation.

2. The deposits are localized in the permeable beds that contain significant amounts of clay cement, mudstone seams, and pebbles of siltstone and clay.

3. Uranium deposits are associated with concentrations of carbonaceous material localized in discontinuous scours along the floor of the channel.

4. Presence of sulfide minerals which are commonly associated with uraninite and impregnate sandstone beds adjacent to uraniferous areas.

CONCLUSIONS

On Frey Point Mesa uranium mineral concentrations are localized in discontinuous scour depressions along the floor of Triassic Shinarump paleostream channels. Uranium occurs as replacements of carbonaceous material and as disseminations in lenticular sandstone beds. The position of the sandstone bed in the channel and the permeability of the sandstone are believed to be the most important factors in the localization of the uranium ore deposits in this area.

The uranium deposits developed in the White Canyon No. 1 and Saddle channels by the drilling programs are of economic size and grade and can be developed and exploited under present mining conditions.

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Table 1. Generalized section of sedimentary rocks exposed near Frey Point Mesa

System	Formation		Description	Feet
Jurassic (?)	Kayenta formation		Sandstone, dark red, medium-grained; interbedded with thin beds of reddish-brown siltstone and mudstone	50 +
Triassic	Wingate sandstone		Sandstone, reddish-brown, fine-grained, massive, cross-bedded	300
	Chinle formation	Church Rock member	Siltstone, red to reddish-brown, thick-bedded, sandy; interbedded with red and gray, fine-grained, cross-bedded sandstone	145
		Owl Rock member	Siltstone, reddish-brown, nonbentonitic; interbedded with red and gray, thin-bedded limestone and limy siltstone	290
		Petrified Forest member	Claystone, variegated, bentonitic; interbedded with siltstone; weathers to form a "frothy" sloped surfsce	140
		Mossback member	Sandstone, light gray, fine- to medium-grained, with mudstone and conglomeratic sandstone lenses	70-75
		Monitor Butte member	Claystone and siltstone, gray and purple, bentonitic; interbedded with fine-grained to conglomeratic sandstone lenses	135
		Shinarump member	Sandstone, light gray, lenticular, fine- to coarse-grained, with lenses of conglomerate, conglomeratic sandstone, siltstone and mudstone	0-40
	unconformity			
	Moenkopi formation		Siltstone, brown and reddish-brown; interbedded with brown, fine-grained sandstone	195
	unconformity			
Permian	Cutler formation	Hoskinnini tongue	Sandstone, reddish-brown, fine-grained, massive	120
		Organ Rock tongue	Siltstone and fine-grained sandstone, red to reddish-brown	200
		Cedar Mesa sandstone	Sandstone, buff to white, cross-bedded, fine-grained, eolian, with thin beds of reddish-brown siltstone	1,000 +

TABLE 2

Diamond Drill Hole Tabulation, Frey Point Mesa,
White Canyon, San Juan County, Utah

Contract No. AT(30-1)-1361

Locality	Holes Completed	Footage (feet)	Ore Holes	Mineralized Holes	Barren Holes
White Canyon No. 1 channel	27	2,229.1	5	6	16
Saddle channel	20	1,507.5	3	3	14
Point channel	32	6,058.0	1	2	29
Widow Maker channel	14	1,702.5	0	2	12
TOTAL	93	11,497.1	9	13	71

Contract No. AT(05-1)-221

White Canyon No. 1 channel	17	1,829.0	1	7	9
Saddle channel	8	704.0	2	2	4
Point channel	5	1,315.0	0	0	5
Widow Maker channel	5	846.0	0	0	5
TOTAL	35	4,694.0	3	9	23
GRAND TOTAL	128	16,191.1	12	22	94

TABLE 3

DIAMOND DRILL HOLE DATA, FREY POINT MESA,
WHITE CANYON, SAN JUAN COUNTY, UTAH

Contract No. AT(30-1)-1361

Hole No.	Coordinates North	Coordinates East	Collar Elev.	Actual Depth	Locality	Uranium Occurrence Interval	Thickness	Grade
FP 1	133,780.3	152,604.4	6,278.3	62.5	White Canyon #1	60.5-61.9	1.4	Ore
2	133,684.4	152,657.7	6,277.1	65.0	"	55.5-60.1	4.6	Ore
3	133,791.2	152,516.5	6,268.8	51.2	"	52.1-54.5	2.4	Weakly Mineralized
4	133,491.2	152,602.0	6,306.3	90.0	"	——	——	Barren
5	133,530.0	152,427.2	6,300.0	94.2	"	85.8-86.8	1.0	Strongly Mineralized
6	133,428.0	152,269.6	6,283.2	85.0	"	?	?	Weakly Mineralized
7	133,612.0	152,195.9	6,270.5	65.0	"	——	——	Barren
8	133,565.8	151,836.6	6,241.7	45.0	"	——	——	Barren
9	133,679.7	151,621.8	6,219.0	32.0	"	——	——	Barren
10	133,333.5	152,312.2	6,299.3	83.7	"	67.0-68.0	1.0	Weakly Mineralized
11	133,529.5	152,511.3	6,303.1	95.0	"	——	——	Barren
12	133,156.6	152,304.4	6,291.0	96.0	"	78.2-85.0	6.8	Ore
13	133,066.2	152,151.6	6,302.4	103.5	"	92.9-95.1	2.2	Ore
14	132,901.2	152,071.2	6,324.3	121.0	"	——	——	Barren
15	132,875.1	151,927.1	6,322.2	120.0	"	——	——	Barren
16	132,727.6	151,991.0	6,332.2	125.0	"	——	——	Barren
17	132,819.5	151,737.2	6,317.5	125.0	"	——	——	Barren
18	133,606.5	152,339.6	6,278.4	75.0	"	62.0-65.0	3.0	Ore
19	139,634.7	144,338.3	6,054.5	50.0	Point	36.5-41.5	5.0	Weakly Mineralized
20	134,643.7	149,994.1	6,169.2	30.0	Saddle	——	——	Barren
21	139,776.1	144,469.6	6,071.8	55.0	Point	——	——	Barren
22	134,574.8	150,046.4	6,160.6	20.0	Saddle	——	——	Barren
23	139,740.6	144,442.7	6,066.7	55.0	Point	——	——	Barren
24	134,046.2	150,271.3	6,203.5	70.0	Saddle	——	——	Barren
25	139,704.5	144,409.2	6,066.4	55.0	Point	——	——	Barren
26	134,162.2	150,198.8	6,211.3	75.0	Saddle	——	——	Barren
27	139,562.2	144,359.4	6,057.8	45.0	"	——	——	Barren
28	134,240.3	150,088.2	6,210.5	74.0	"	——	——	Barren
29	139,930.8	144,509.2	6,101.9	85.0	Point	56.3-57.5	1.1	Ore
30	134,305.7	150,136.9	6,215.7	85.0	Saddle	77.1-78.1	1.0	Weakly Mineralized

TABLE 3 (Cont'd)

Hole No.	Coordinates North	Coordinates East	Collar Elev.	Actual Depth	Locality	Uranium Occurrence Interval	Thickness	Grade
FP-31	139,659.3	144,446.4	6,096.8	85.0	Point	----	---	Barren
32	136,328.0	150,069.6	6,239.9	100.0	Saddle	91.0-92.0	1.0	Strongly Mineralized
33	135,918.6	150,046.7	6,194.8	115.0	"	51.0-54.0	3.0	Ore
						127.4-128.4	1.0	
34	135,840.6	150,879.6	6,216.4	35.0	"	----	---	Barren
35	135,946.9	149,976.4	6,199.0	45.0	"	----	---	Barren
36	136,254.1	150,024.9	6,287.3	135.0	"	130.5-133.5	3.0	Strongly Mineralized
37	136,017.1	150,049.0	6,222.7	75.0	"	95.0-97.0	2.0	Ore
38	133,091.1	151,778.7	6,246.9	60.0	White Canyon #1	----	---	Barren
39	136,116.0	150,072.0	6,281.3	135.0	Saddle	?	?	Ore
40	133,228.4	151,867.9	6,254.4	60.0	White Canyon #1	58.0-60.0	2.0	Weakly Mineralized
41	136,078.1	150,034.6	6,252.1	105.0	Saddle	----	---	Barren
42	132,883.0	153,972.1	6,337.2	100.0	Widow Maker	----	---	Barren
43	135,911.2	150,223.4	6,270.3	123.5	Saddle	----	---	Barren
44	139,567.3	145,529.9	6,322.5	250.0	Point	----	---	Barren
45	134,777.0	149,763.5	6,167.9	45.0	Saddle	----	---	Barren
46	139,439.6	145,357.0	6,314.7	255.0	Point	----	---	Barren
47	134,700.4	149,860.0	6,174.9	45.0	Saddle	----	---	Barren
48	139,157.2	145,447.0	6,316.0	284.5	Point	----	---	Barren
49	135,641.5	150,108.8	6,181.0	35.0	Saddle	----	---	Barren
50	139,126.0	146,611.9	6,338.2	265.0	Point	----	---	Barren
51	139,733.1	145,050.4	6,292.6	235.0	"	----	---	Barren
52	139,271.6	145,675.4	6,322.7	275.0	"	----	---	Barren
53	139,074.0	146,044.8	6,333.0	285.0	"	----	---	Barren
54	138,912.3	147,012.4	6,340.0	264.0	"	----	---	Barren
55	138,650.8	147,295.2	6,338.9	255.0	"	246.0-247.0	1.0	Weakly Mineralized
56	138,045.2	149,676.5	6,419.7	262.0	"	----	---	Barren
57	138,572.6	147,861.6	6,365.0	265.0	"	----	---	Barren
58	138,177.0	149,224.0	6,413.2	245.0	"	----	---	Barren
59	138,382.0	148,364.2	6,386.3	275.0	"	----	---	Barren
60	138,644.3	149,463.5	6,207.6	55.0	"	----	---	Barren

TABLE 3 (Cont'd)

Hole No.	Coordinates North	Coordinates East	Collar Elev.	Actual Depth	Locality	Uranium Occurrence Interval	Thickness	Grade
FP-61	138,737.0	149,259.7	6,222.4	65.0	Point	----	---	Barren
62	138,932.8	148,990.8	6,208.9	65.0	"	----	---	Barren
63	139,889.4	148,230.5	6,181.8	50.0	"	----	---	Barren
64	135,793.3	150,694.5	6,290.1	115.0	Saddle	----	---	Barren
65	132,123.5	150,071.7	6,208.6	75.0	White Canyon #1	----	---	Barren
66	132,294.4	150,255.4	6,215.3	65.0	"	59.0-60.0	1.0	Weakly Mineralized
67	132,194.3	150,141.1	6,215.6	80.0	"	----	---	Barren
68	132,351.3	150,804.0	6,256.3	95.0	White Canyon #1	----	---	Barren
69	132,459.0	150,701.9	6,244.1	75.0	"	----	---	Barren
70	133,049.2	151,428.9	6,234.0	40.0	"	----	---	Barren
71	138,226.1	148,278.0	6,382.4	275.0	Point	----	---	Barren
72	138,532.3	148,448.1	6,387.3	245.0	"	----	---	Barren
73	138,030.3	148,162.5	6,375.3	255.0	"	----	---	Barren
74	138,444.4	147,783.1	6,362.8	265.0	"	----	---	Barren
75	137,880.3	149,586.1	6,421.4	255.0	"	----	---	Barren
76	138,911.3	146,684.3	6,325.1	255.0	"	----	---	Barren
77	137,967.6	149,176.3	6,409.2	275.0	"	----	---	Barren
78	133,030.9	153,591.9	6,341.3	95.0	Widow Maker	----	---	Barren
79	130,986.5	150,953.5	6,185.0	35.0	"	----	---	Barren
80	131,102.6	151,638.3	6,187.9	35.0	"	----	---	Barren
81	131,640.6	151,259.9	6,227.5	49.5	"	48.0-49.0	1.0	Weakly Mineralized
82	131,196.1	151,312.9	6,191.5	41.0	"	----	---	Barren
83	131,532.2	151,840.9	6,262.3	103.0	"	----	---	Barren
84	131,606.9	151,619.9	6,269.3	95.0	"	----	---	Barren
85	133,204.8	153,327.0	6,325.2	85.0	"	----	---	Barren
86	133,012.0	153,740.1	6,325.5	100.0	"	81.0-82.0	1.0	Weakly Mineralized
87	132,156.1	152,575.2	6,448.4	255.0	"	----	---	Barren
88	132,035.2	152,763.1	6,456.3	259.0	"	----	---	Barren
89	132,291.1	153,095.2	6,472.3	275.0	"	----	---	Barren
90	132,911.5	152,351.8	6,363.9	145.0	White Canyon #1	----	---	Barren
91	132,672.6	153,409.8	6,398.3	175.0	Widow Maker	----	---	Barren
92	138,586.4	149,175.6	6,261.1	112.5	Point	----	---	Barren
93	139,716.6	148,094.4	6,222.3	85.0	"	----	---	Barren

TABLE 3 (Cont'd)

Contract No. AT(05-1)-221

Hole No.	Coordinates North	Coordinates East	Collar Elev.	Actual Depth	Locality	Uranium Occurrence Interval	Thickness	Grade
W- 1	133,713.5	152,516.7	6,299.1	86.0	White Canyon #1	----	----	Barren
2	133,769.3	152,408.0	6,296.7	72.0	"	----	----	Barren
3	133,410.8	152,152.6	6,302.6	106.0	"	----	----	Barren
4	133,206.1	152,059.8	6,339.1	144.0	"	----	----	Barren
5	133,597.5	152,378.8	6,279.7	75.0	"	139.0-143.0	4.0	Strongly Mineralized
6	132,979.3	151,722.0	6,292.5	106.0	"	87.0-88.0	1.0	Weakly Mineralized
7	135,179.3	150,274.5	6,249.3	97.0	Saddle	87.5-88.5	1.0	Strongly Mineralized
8	134,508.9	150,245.6	6,187.0	36.0	Saddle	----	----	Barren
9	135,316.6	150,314.9	6,245.4	91.0	"	----	----	Barren
10	135,459.2	150,147.3	6,199.1	58.0	"	----	----	Barren
11	136,208.0	150,084.9	6,265.6	121.0	"	?	?	Ore
12	133,615.6	152,562.0	6,320.9	106.0	White Canyon #1	----	----	Barren
13	133,073.7	152,253.0	6,298.1	95.0	"	----	----	Barren
14	132,855.8	151,647.6	6,311.2	116.0	"	100.0-101.0	1.0	Weakly Mineralized
						112.5-113.5	1.0	
15	132,511.4	150,930.0	6,266.7	104.0	"	91.0-92.0	1.0	Strongly Mineralized
16	132,705.5	151,324.1	6,300.5	125.0	"	122.4-123.4	1.0	Weakly Mineralized
17	132,182.9	150,364.8	6,254.9	103.0	"	----	----	Barren
18	136,459.8	150,064.5	6,207.9	60.0	Saddle	----	----	Barren
19	132,682.9	153,693.2	6,396.6	170.0	Widow Maker	----	----	Barren
20	132,832.3	154,171.4	6,368.9	120.0	"	----	----	Barren
21	132,342.5	153,049.5	6,470.1	268.0	"	----	----	Barren
22	132,561.5	153,501.9	6,403.1	186.0	"	----	----	Barren
23	139,113.1	145,423.5	6,315.3	289.0	Point	----	----	Barren
24	132,945.9	153,798.7	6,327.2	102.0	Widow Maker	----	----	Barren
25	133,076.5	152,008.8	6,326.3	131.0	White Canyon #1	120.0-125.0	5.0	Weakly Mineralized
26	138,802.1	147,031.0	6,336.9	264.0	Point	----	----	Barren
27	138,826.2	147,449.1	6,350.8	265.0	"	----	----	Barren
28	132,657.7	151,113.9	6,262.4	101.0	White Canyon #1	93.8-94.8	1.0	Strongly Mineralized
29	132,518.4	151,101.4	6,297.9	132.0	"	124.0-125.0	1.0	Ore
30	138,621.3	147,588.2	6,353.9	262.0	Point	----	----	Barren
31	133,221.7	152,218.4	6,297.6	91.0	White Canyon #1	----	----	Barren

TABLE 3 (Cont'd)

Hole No.	Coordinates North	Coordinates East	Collar Elev.	Actual Depth	Locality	Uranium Occurrence Interval	Thickness	Grand
W- 32	139,106.8	147,693.6	6,358.3	235.0	Point	----	---	Barren
33	136,181.0	150,024.0	6,309.2	161.0	Saddle	151.0-152.0	1.0	Ore
						154.3-158.3	4.0	
34	135,972.0	150,083.4	6,223.3	80.0	"	53.5-54.5	1.0	Strongly Mineralized
35	132,736.6	151,523.3	6,317.2	136.0	White Canyon #1	----	---	Barren

Figure 1 Index map showing location of Frey Point Mesa, White Canyon area, San Juan County, Utah

E X P L A N A T I O N

TRIASSIC

- Wingate sandstone
- Chinle formation
- Shinarump member, Chinle formation
- Moenkopi formation

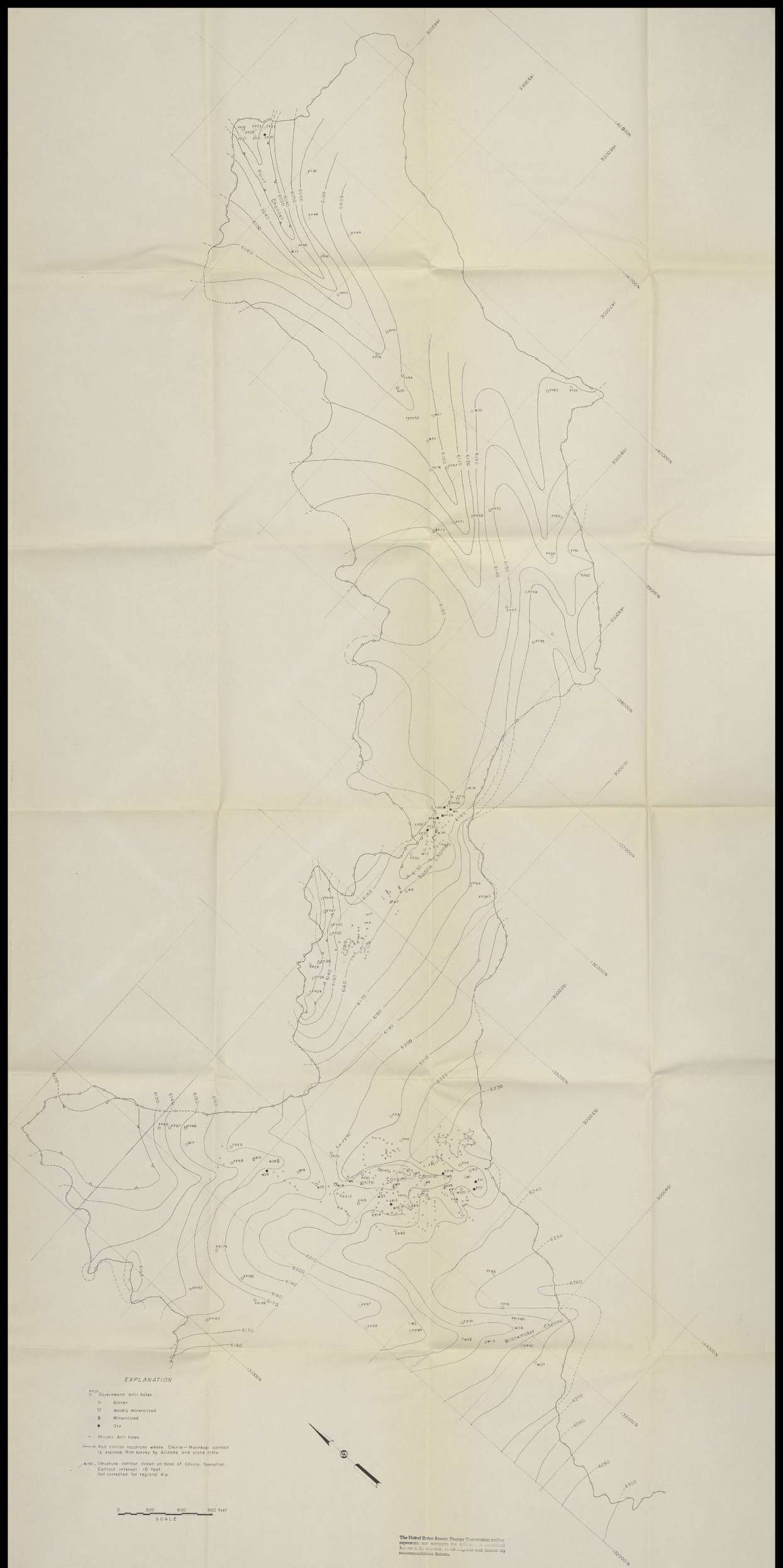
PERMIAN

- Upper Permian formation, undifferentiated

TM 125

Adapted from MacDonald, 1956

Figure 2. Geologic map of White Canyon-area, San Juan County, Utah.



The United States Atomic Energy Commission neither represents nor warrants the information contained herein to be accurate, and makes no recommendations thereon.

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Figure 3 Structure contour map showing drill holes, Frey Point, White Canyon area, San Juan County, Utah