INTERIM REPORT ON EXPLORATION IN THE LA SAL CREEK AREA, PARADOX DISTRICT, MONTROSE COUNTY, COLORADO, AND SAN JUAN COUNTY, UTAH

By W. D. Carter, J. L. Gualtieri, and D. C. Hedlund
AEC - 781/4

Dr. Phillip L. Merritt, Assistant Director
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P. O. Box 30, Ansonia Station
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Dear Phil:

Transmitted herewith are two copies of TEM-729, "Interim report on exploration in the La Sal Creek area, Paradox district, Montrose County, Colorado, and San Juan County, Utah," by W. D. Carter, J. L. Gualtieri, and D. C. Hedlund, February 1954.

Sincerely yours,

[Signature]

for

W. H. Bradley
Chief Geologist

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PARADOX-DISTRICT, MONROSE COUNTY, COLORADO,
AND SAN JUAN COUNTY, UTAH*

By

W. D. Carter, J. L. Gualtieri, and D. C. Hedlund

February 1954

Trace Elements Memorandum Report 729

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Figure 1. Map of the La Sal Creek area, Paradox district, Montrose
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ABSTRACT

The La Sal Creek area is in parts of T. 28 S., R. 26 E., San Juan County, Utah, and T. 47 N., R. 20 W., Montrose County, Colo. Between May 5, 1952, and December 9, 1953, the U. S. Geological Survey diamond-drilled 335 holes totaling 63,242 feet in the La Sal Creek area. This drilling was done to find extensions of deposits near mine faces, to find deposits that might be developed into new mines, and to appraise the uranium reserves in the area.

Indicated and inferred reserves found as a result of the Geological Survey drilling total about 85,000 short tons having an average grade of about 0.27 percent U₃O₈ and about 2.50 percent V₂O₅. The reserves are in bodies that contain from 150 to 6,000 short tons.

About 40,000 to 60,000 feet of additional exploration-type drilling is planned to be done in the La Sal Creek area during calendar year 1954. This drilling will probably start in the spring.

INTRODUCTION

The La Sal Creek area includes the parts of T. 28 S., R. 26 E., Salt Lake meridian, San Juan County, Utah, and T. 47 N., R. 20 W., New Mexico principal meridian, Montrose County, Colo. (fig. 1), that are west of Paradox Valley and southeast of the La Sal Mountains. This area includes about 130 privately owned claims and some public land.
Total known production of uranium-vanadium ore from the mines in the La Sal Creek area prior to October 1953 is about 30,500 short tons. Of this amount 18,260 short tons, averaging 1.94 percent $V_2O_5$, was produced between 1940 and 1944. The uranium content was not recorded. The records for the 1944-48 period are incomplete, but only a few tons of ore were produced. A total of 12,180 short tons of ore, averaging 0.30 percent $U_3O_8$ and 1.92 percent $V_2O_5$, was produced between 1948 and October 1953.

Since 1950, about 85,000 feet of diamond drilling and wagon drilling has been done by private industry in the La Sal Creek area (fig. 1.).

During the period from May 5, 1952, to December 9, 1953, the U. S. Geological Survey drilled 335 holes totaling 63,242 feet in the La Sal Creek area. This drilling was done (1) to find extensions of deposits near mine faces, (2) to find deposits that might be developed into new mines, and (3) to appraise the uranium reserves in the area. This report summarizes the results of this exploration and outlines the general plans for additional exploration, all of which is being done on behalf of the Division of Raw Materials of the U. S. Atomic Energy Commission.

**GEOLOGY**

Sedimentary rocks of Jurassic and Cretaceous age are exposed in the La Sal Creek area. From base to top, these rocks consist of the following formations: the Jurassic Navajo, Carmel, Entrada, Summerville and Morrison, and the Cretaceous Burro Canyon and Dakota formations. These formations constitute a part of the southwest flank of the Paradox anticline and generally dip southwestward at a low angle. This report is principally concerned with the Morrison formation as it contains most of the known uranium deposits. The older Jurassic rocks, therefore, are not described and are shown as undifferentiated on figure 1.

The Morrison formation is divided into two members. The lowermost, the Salt Wash, consists of broadly lenticular sandstone strata interbedded with red and green mudstone. The Salt Wash member is overlain by the Brushy Basin member which is composed of variegated red and green shales and clays with interbedded conglomeratic sandstone lenses. These members are undifferentiated on figure 1.
remnants of the overlying Cretaceous Burro Canyon and Dakota formations (undifferentiated on fig. 1) extend northwestward away from the explored area.

The Salt Wash contains most of the principal uranium-bearing deposits which, in general, are confined to the uppermost, continuous sandstone beds, referred to on figure 1 as the "ore-bearing sandstone," Several small deposits occur in a thin, lenticular sandstone bed just above the "ore-bearing sandstone" and a few are in the lowermost conglomeratic sandstone lenses in the Brush Basin member.

GEOL OGICAL SURVEY EXPLORATION

From May 5, 1952, to December 9, 1953, the Geological Survey diamond-drilled 335 holes totaling 63,242 feet, in the La Sal Creek area. This drilling was done under two separate drilling contracts: (1) May 5, 1952, to September 12, 1952; and (2) April 23, 1953, to December 9, 1953. Under the first contract, 173 holes totaling 21,096 feet were drilled; and under the second contract, 162 holes totaling 42,146 feet were drilled.

About 25 percent of the total footage was drilled in widely spaced holes, 500 to 1,500 feet apart, to obtain geologic information; about 15 percent was drilled in moderately spaced holes, 200-500 feet apart, to search for and roughly outline new deposits; and 60 percent was drilled in closely spaced holes, 50 to 200 feet apart, to outline more completely the known deposits. About 30,350 feet, or 48 percent of the total footage was expended in closely spaced holes that are classified as development-type drilling.

Of the 335 holes drilled, 52 are in material 1 foot or more thick, containing 0.10 percent or more U3O8 or 1.0 percent of more V2O5, and 126 holes are in mineralized material that is either too low grade or too thin to be classed as ore. Drilling through December 1953 has resulted in the discovery of about 58 deposits, some of which have been partly defined.

About 90 percent of the holes were drilled on private claims and the remainder are in public land.
RESERVES

The estimated indicated and inferred reserves found by Geological Survey drilling in the La Sal Creek area are about 85,000 short tons of material 1 foot or more thick that averages about 0.27 percent U₃O₈ and 2.50 percent V₂O₅ are calculated at a cutoff of 0.10 percent U₃O₈ or 1.0 percent V₂O₅. The masses of material constituting these reserves range in size from 150 to 6,000 short tons.

PLANS

About 40,000 to 60,000 feet of additional diamond drilling in the La Sal Creek area is planned to begin in the spring of 1954 when weather conditions permit.

This drilling will be used to test unexplored ground within the present drilling area, to search for and outline new deposits in the favorable ground, and to obtain geologic information in the vicinity of the Yellow Bird and Maud mines on the north bench of Wray Mesa. During the winter months of 1953-54, and during the exploration work, a mine and surface mapping program will be continued in the La Sal Creek area. Information gained from these studies will afford a more accurate appraisal of reserves in the area and will provide guidance to the exploration.

UNPUBLISHED REPORTS


