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Humboldt County  
Item 33

IN REPLY REFER TO:



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Mineral Deposits Branch  
Menlo Park, California

July 10, 1959

Memorandum Report

To: Max Crittenden, Foster Hewitt, and Ron Willden  
From: Hal Stager  
Subject: Raven manganese claim, Humboldt County, Nevada

INTRODUCTION

In May 1959 a Mr. A. G. Knab of 1733 West Gage Ave., Los Angeles 47, California submitted a specimen of manganese ore to the Menlo Park OME office for identification and requested information on obtaining Government assistance in exploring the deposit. The specimen was identified, by X-ray diffraction and spectrograph, as cryptomelane. I informed Mr. Knab of the identification and, because of personal interest and the expressed interest of several other Survey geologists in the occurrence, indicated that I would be willing to take a quick look at the property while in the vicinity on OME and DMEA business. As a result a field examination was scheduled for June 16, 1959. On that date I met Mr. Knab in Denio, Humboldt County, Nevada and accompanied him to the property.

Location, Road Log, and Accessibility:

The deposit is in Sec. 15 (?), T. 44 N., R. 25 E., M.D.B.&M., Humboldt County, Nevada, in the Charles Sheldon Antelope Range, on Virgin Creek at an altitude of about 6,000 feet. The topography is shown on A.M.S. map NK 11-7 Vya, Nevada-Oregon (1:250,000) in the north central part of the sheet.



To reach the locality from Denio, Nevada use the following road log:

Milage

0.0	Denio, Nevada - Travel south on Nevada highway 8A
3.0	Turn right (west) on Nevada 8A
9.9	End of pavement - continue on good graded dirt road
23.5	Thousand Creek ranch
28.8	Dufurrena - Virgin Valley sign, turn left on road marked Rainbow Ridge Opal mine
29.9	Sheldon Antelope Refuge - Dufurrena sub-headquarters
31.4	Turn right at Virgin Valley ranch sign
34.5	Gate
38.7	Gate
39.8	Virgin Valley ranch - 2 gates
40.9	Gate
41.3	End of passenger car road - camp - jeep trail starts up hill to right (west)

Take jeep trail for about 3 miles to Hell Creek, then hike down Hell Creek to junction with Virgin Creek (about  $\frac{1}{2}$  mile) then go up Virgin Creek (SE) for about  $1\frac{1}{4}$  miles, past rhyolite bluff with columnar jointing on left, then turn left up small side canyon to NE for about  $\frac{1}{2}$  mile into small basin - manganese prospect trenches and pits with abundant float on south facing slope.

Property and Ownership:

The property consists of three unpatented mining claims, Raven, Blackbird, and Eagle, which were located on July 8, 1953 and recorded in Winnemucca, Nevada. The original locators and present owners are Mrs. Karl S. DuChemin and L. F. Symington of 14854 Rama Drive, Victorville, California, who are prospecting partners of Mr. Knab and were present at the time of the examination.

GEOLOGY

Geologic Setting:

The claims are in an area of moderate relief underlain by volcanic flows and tuffs of Tertiary age. Most of the volcanic rocks are rhyolitic to andesitic in composition. The flows and tuff beds are flat lying or dip only a few degrees north. Stream dissection



has resulted in numerous flat-topped, steep-sided, mesas or tablelands. The claims are on the steep west slope of the Rock Spring Table that is about 15 miles long and 5 miles wide. Many of the canyons, shallow basins, and valleys contain remnants of old lake sediments consisting of thin beds of volcanic ash, silt, sand, pebble conglomerates, and locally thin beds of diatomite. It is within one of these small sediment-filled basins, breached by stream erosion, that the manganese deposit occurs.

#### Ore Deposit:

The ore deposit consists chiefly of dark-brown to jet-black, earthy to shaly beds of cryptomelane 1 inch to 18 inches thick interbedded with 1 foot to 2 feet of gray volcanic ash, silt, fine sand, or white diatomite. The sediments are about 50 feet thick and underlain by rhyolite flows and tuffs. Cryptomelane also occurs throughout the deposit as oddly shaped reniform, cuneiform, botryoidal, mammillary, and slab-like concretions as much as six inches in diameter, commonly along bedding planes. The cryptomelane contains about 60 percent Mn, 1 percent Fe, and traces of Sr, Ni, W, Cu, and Zn. A total of 17 beds of cryptomelane-rich material has been exposed by shallow trenches and pits but now largely filled with slope wash. These beds strike east and dip about 5° north, into a south-facing 10° slope. They crop out over an area about 300 feet long and 100 feet wide.

The source of the manganese has not been determined. There are no crosscutting fractures or feeders exposed in the area and no indications of hot spring activity although hot springs may well have been the source of the manganese. There are hot springs known within about ten miles of the property. When additional trenching or mining is done some new evidence may be exposed. A complete chemical analysis of the ore is now being made and this information may shed some additional light on the probable origin.

The age of the diatomite has not yet been determined but an attempt is now being made to do so. Inasmuch as the diatomite beds are in the middle of the deposit this will give a close check on the age of the ore, which is inferred to be syngenetic.

#### Ore Reserves:

Exposures are poor and the deposit is still in the prospect stage with much work still to be done to determine the continuity of individual ore beds both along the strike and down dip. There has been no production from the property. The few shallow trenches and pits dug by the claim owners as part of their annual assessment work have exposed a total of 17 cryptomelane-rich beds that average about 6 inches thick, or an aggregate thickness of about 8 feet of ore in about 50 feet of



sediments. If this aggregate thickness is persistent over the 300 feet of strike length and the deposit extends down dip 100 feet there is about 20,000 tons of ore averaging about 50 percent manganese that could be obtained by mining and milling about 60,000 cubic yards of material.

Because of the gentle dip of the deposit and the soft friable nature of the sediments the deposit could be mined easily by open pit methods for about 100 feet down dip. Beyond this depth the amount of overburden would increase rapidly and the cost of mining would soon exceed the value of the material.





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DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Menlo Park, Calif., February 16th, 1963.

Dr. Vernon E. Scheid,  
Nevada Bureau of Mines,  
Reno, Nevada.

RECEIVED

FEB 18 1963

MADYV SCHOOL OF MINES

Dear Scheid:

I have recently had a chance to examine the group of resource maps recently issued by the Bureau, especially that showing the manganese deposits of Nevada. These maps serve a very useful purpose and I am interested in the manganese map. As you may know, I am giving all of my time to the review and study of the manganese deposits of the United States and have in my files almost everything on record in the Survey concerning manganese deposits.

After a hasty examination of the map, I note the absence of several deposits, of which some may be important at some time. As the notation in the upper left-hand corner refers to "published" information about the deposits, I have wondered whether you had access to other information in the Survey files in the preparation of the map. I have conferred with Max Crittenden and Ralph Roberts and neither had ever seen this map.

Even though my examination of the manganese map was far from exhaustive, I note the absence of the following deposits:

1. Raven deposit; Sec. 15(?), T. 44 N., R. 25 E., Humboldt County. In May, 1959, Hal Steger of the Survey made an examination of this deposit for D.M.E.A.; I enclose a copy of the report made for Crittenden and me. For your information, I should say that this is a very unusual deposit and enough work was done to show its nature very well. Explorations showed that there are 17 beds of oxide (cryptomelane) that average 6 inches in thickness, in a total thickness of beds of 60 feet. These layers of oxide alternate with beds of diatomite and according to Kenneth Lohman who examined the material closely, the age is upper middle Miocene. Nothing quite like this deposit is known elsewhere in the United States but one is known in Chile and another in Russia.
2. Dixon deposit; lies on the top of the Pine Nut Mountains, about 12 miles due East of Carson City, Ormsby County. It was first examined during the War by Montis Klepper of the Survey and his report is on microfilm in our files. There is considerable trenching and a tunnel.
3. Black Rock deposit; Sec. 32, T. 32 N., R. 51 E., Eureka County. Examined by Ralph Roberts in 1961; brief report in my files. Workings include shallow pits and a 20-foot adit.

May I suggest that such a map should show much in the way of culture, towns, roads and maybe townships, if the deposits may be identified accurately. of the names on this map, only about half agree with the names in our records; as you know, names change frequently in the West. A close check of all of the deposits would take considerable time and I have not done this. Best wishes,

Sincerely,

*F. J. Hewett*