

ASSOCIATED GEOLOGISTS

2814 FAVILL LANE

GRANTS PASS, OREGON - 97526

Report on the Preliminary Exploration Program on the Red Devil Group
of Mercury Claims, Secs. 8, 9, 16, 17, Twp. 41S., R. 10 W. W. M.,
Curry County, Oregon

1. INTRODUCTION

A. Purpose & Scope:

The Red Devil Group of Mercury Claims are located in a geological environment consisting of stocks of younger granitic-textured intrusives which have invaded older peridotites. This geological setting is common to 3 of the known mercury prospects of the Patrick's Creek - Diamond Creek district of Northern California. The indications are that the Red Devil group incorporated one of the largest stocks of granodiorite-hornblende diorite in the area. It is thought that the mercury mineralization is directly related to these intrusive rocks.

The purpose of the preliminary exploration was to expose the formations in the area of Red Devil #5, #6, so as to determine if the HgS mineralization found along the road and lower into the swamp is wide-spread. The scope of the exploration work was limited to bulldozing shallow trenches, primarily to remove the very dense brush and expose the formation so that samples could be taken. The bulldozing was not expected to reveal structural controls of the ore, however it was hoped that the shallow trenches might expose the mineralization in place so as to cast some light on the control systems and origin of the deposit.

B. Location:

The Red Devil Group of Mercury Claims #1 - 8 are in Secs. 8, 9, 16, 17, Twp. 41S., R. 10, W. W. M., Curry County, Oregon, approximately 1 mile north of the California border and also 1 mile north of the Big Boy Mercury prospect.

The claims are 25 miles from the coast, the nearest town being Smith River, California. The claims can be reached from Grants Pass, Oregon, by taking Highway 1998 (Redwoods Highway) to O'Brien, Oregon, a distance of 42 miles. At O'Brien, turn right at the general store and post-office onto the Old Wimer Road. The Wimer Road at a distance of approximately 20 miles from O'Brien crosses Diamond Creek. The Red Devil Group is located on the ridge that separates Diamond Creek from Taylor Creek to the west. The claims drape the ridge, and extend approximately 1500 ft. down both sides of the divide in a North 50° West/ South 50° East direction. The top of the divide is approximately 3200 ft. elevation. From the Wimer road a jeep trail has been bulldozed one-half way up the ridge. This trail joins the road coming in from the Cleopatra Look-Out three miles to the west. This road on top the ridge traverses the end-lines of the claims and intersects the Cook Road (Chetco Peak Trail) 4 miles N. E. of the claims. Equipment can best be brought onto the claims by taking the Wimer Rd.-Chetco Peak Road to the junction of the ridge road then westward along the ridge road to the claims. The claims are approximately 7 miles from the Wimer Road by this route. Due to the floods of the winter of 1964-65 parts of the Wimer Road west of O'Brien, Oregon, are impassable to passenger car. The best access to the claims is by 1998. to Patrick's Creek, California, turn right on the north side of Patrick's Creek, follow this road to the Shelly Creek turn-off. Follow the Shelly Creek Road past the old Monumental Mining area, continue up to Shelly Creek Canyon and turn west, or left onto the Wimer Road. From Patrick's Creek to the Wimer Road requires approximately 40 minutes in a passenger car. The Chetco Peak-Ridge Road is too rough at present for a passenger car, but is suitable for a jeep.

C. Acknowledgments:

The writer wishes to express his appreciation to Mr. E. K. McTimmonds, claim owner for his assistance. Also, to Mr. Charles T. Morris, who assisted with the mapping and sampling.

The writer appreciates the financial assistance given by Mr. Verne Shangle, and Mr. Edward Pease, who by their participation made the bulldozing and sampling possible. The financial risk involved at this stage of a new prospect is very great, it is hoped that Mr. Shangle and Mr. Pease will be compensated sufficiently for the risk taken.

11 SUMMARY

The preliminary exploration work on the Red Devil Group of Mercury Claims in Sec. 8, 9, 16, 17, Twp. 41 S., R. 10 W. W. M., Curry County, Oregon, indicates that the Mercury mineralization is widespread. A block in excess of 3 million tons indicates the surface to be carrying approximately 0.50 lbs. of Hg in the form of cinnabar. The area explored (Zone A) makes up only a small fraction of potential formation on the claims that is believed to be carrying mercury mineralization.

The area explored is a fault zone on the margin of a granodiorite stock near its contact with a narrow mass of peridotite. The bulldozer trenches cut a highly-altered granodiorite. The granodiorite is so altered that only the quartz (10-15%) is recognizable, the feldspars are kaolinized, no mafics remain. Sericite is common. At shallow depths below the surface the altered zone is highly colored with yellow-orange and pink clay minerals. The east trench next to the main stock of massive granodiorite pans cinnabar crystals (10 crystals - $\frac{1}{4}$ inch tail) in a small 9" pan for a distance of 600 ft. The immediate area next to the serpentine contact for 100 feet pans and assays the best. In this same area several small bunches of cinnabar crystals about the size of a 50¢ piece were found. The panning results in the east trench

do not correspond with the assay results. By panning the best results in the trench were at Sample #4, which showed nil on the assay. #4 Sample panned a $\frac{1}{2}$ "-long tail in a small pan. On the other hand, Sample #7 which only panned approximately 20 crystals of cinnabar assayed 0.80 lbs. Hg.

The west trenches, 600 ft. west of the above trench mentioned panned very poorly and extremely erratic, however, Sample #11 contained .40 lb. Hg. indicating that the mineralization extends at least 600 ft. away from the main stock. Sample #9, which is 200 ft. from the altered granodiorite into granodiorite mass itself is a one foot wide fault with an attitude of $N 10^{\circ} E \nearrow 55^{\circ} S. E.$ The material in this fault is highly altered and fractured. Cinnabar crystals can be seen with the unaided eye on the fractures. Mr. McTimmonds had the State Dept. of Geology assay a sample of the material from the fault. The State's assay showed 2 lbs. Hg. Sample #9 which is from the same zone want nil. Regardless of the assay results, cinnabar crystals can be seen on the fractures and this fault is mineralized.

It was thought before the trenching that the entire swamp area was underlain by granodiorite or hornblende diorite. However, the bulldozing showed that an unmapped body of peridotite-serpentine is present in the swamp area. This peridotite cuts and separates the granodiorite and hornblende diorite into small stocks, bosses, and dykes rather than one large intrusive as indicated in the geology of the Kerby Quadrangle.

The area of the ridge road on Claim #1 and #3 approaching the altered zone from the west consists of a heterogeneous mixture of interfingering of granodiorite, altered granodiorite, coarse pyroxenite-hornblendite, serpentine, dykes of quartz latite porphyry, with well-developed phenocrysts of both quartz and feldspar, and quartz stringers and veins. Within the altered zone of granodiorite itself, is a 6 ft. wide vein of milk-white glassy quartz. In the central part of Claim #1, 1500 ft. Southwest from the altered granodiorite a 200 sq. ft. area of fine-medium grained titaniferous magnetite outcrops in the

peridotite. The iron ore assayed 42.9% - 49% Fe, 1.2% - 2.8% TiO_2 .

Zone B on Claim #8, which is the east side of the property will pan HgS crystals. The geological environment is identical with Zone A. The altered zone of Zone B is formed by the contact of the main peridotite mass with the granodiorite stock that forms the top of the ridge. This zone appears sizable but no attempt was made to find its lateral dimensions at this time.

111 CONCLUSIONS

The HgS mineralization is widespread in the altered granodiorite on Claim #5. The questions to be answered are these:

- (1) What formed the altered granodiorite?
- (2) Does the zone carry sufficient quantities of HgS to make a commercial deposit?

In answer to (1), it is the writer's opinion that the altered granodiorite was formed in one of two ways.

(a) By surface alterations of the contact areas of the main granodiorite mass. During its emplacement the edges of the stock were fractured and broken and easily eroded. The altered zone as seen now is the result of deep weathering of the detrial material.

The HgS is in the altered zone as the result of surfacial concentration. Perhaps the granodiorite contains minute quantities of HgS as an accessory mineral. By erosion and weathering of large volumes of the host rock, the HgS crystals are liberated. The area on top of the ridge is fairly flat so that the migration of the HgS crystals is impeded. The action of circulating ground water could cause areas of local concentration. Thus the deposit owes its existence to secondary enrichment.

If this is the case, then this deposit will not improve with depth and will be extremely erratic in its mineralization. Further exploration would

would not be justified.

(b) The second method of forming the mineralized altered granodiorite is by structurally controlled hydrothermal action. The evidence that supports this theory is as follows:

(1) The age relationship of the invading granodiorite to the older peridotite. There is evidence of jointing and faulting in the granodiorite stock, these faults were probably formed at the time of its emplacement. The granodiorite, especially along its margins probably faulted more readily than the peridotite. Studies indicate that peridotite has a tendency to flow rather than fracture.

(2) Because the margins of the stock are the most highly-fractured areas, the zone of alteration developed at the edges. The fractures formed openings and channel-ways for the hot gaseous hydrothermal solutions that usually accompany acid-type intrusives. The hydrothermal solutions probably brought in the cinnabar.

(3) There is evidence that the granodiorite throughout the Patrick Creek-Diamond Creek area contained mercury minerals. Therefore, because the granodiorite stocks on the Red Devil claims are the largest in the area, it is reasonable to expect the largest concentration of HgS to be associated with it.

(4) The brightly colored clay minerals - orange, pink, yellows found in the altered zone with sericite indicate hydrothermal action rather than a weathered product.

(5) The quartz latite porphyry dykes found near the altered zone indicate that the temperature-pressure gradient of the magma was rapidly changed. This change was probably due to weakness developed by the invading intrusive rock.

(6) The quartz veins indicate that the formations near the stock were fractured sufficiently for an open-system to develop. Hydrothermal alteration

would most likely accompany the forming of quartz veins.

(7) The stream that flows into the swamp develops near the surface in the middle of the altered zone. This indicates that within the altered zone itself are zones of weakness which when exposed will probably be faults.

It is the writer's opinion that the Red Devil Mercury deposit is a structurally controlled epi-mesothermal deposit that may increase in mercury content with depth. That within Zone A enriched areas will be found that could possibly make the entire block of over 3 million tons mineable by open-pit methods. Several structural traps are indicated in this zone. These traps could cause areas of enrichment.

- (1) Fault-clay zones within the altered area itself
- (2) Faults and shattered areas within the main granodiorite mass.
- (3) The contact areas between impervious serpentine and the invading rock could form structural traps.
- (4) The wide-spread impregnation of the altered zone suggests a deposit of large volume.

If Zone A contains commercial ore then the probability of equally large areas elsewhere on the claims exist.

In conclusion, the possibilities of developing a very large deposit of mercury on the Red Devil claims is sufficiently positive that the following recommendations are made.

D. RECOMMENDATIONS

It is important to determine if a commercial deposit exists. This can best be done by examining the deposit below the immediate surface. Churn, rotary, or any drilling method that will give samples that indicate the amount of mercury minerals present and at the same time produce data concerning the paragenesis of the deposit is needed. It is important to establish that

that the deposit is not surficial. If the drilling indicates that the mineralized altered granodiorite is formed from ascending hydrothermal solutions then the possibilities of finding a large mercury deposit on the claims is good. The grade and size will probably be dependent on the internal structural controls; however, these control features should not be the first concern of the drilling.

Drilling Program:

2 vertical holes #1 50 ft. deep and #2 75 feet deep. #1 to test for an increase in the HgS in the known mineralized zone. This hole should also indicate the origin of the altered granodiorite as 50 ft. of depth should be below the zone of weathering.

#2 hole which will collar approximately 25 ft. higher than #1 is in a zone indicated by the assays to be containing no mercury. This slight difference in elevation may reveal something about depth control of the mineralization, as well as proving continuity of the mineralization along the margin of the stock.

Hole #3 - If hole #2 is successful in locating mineralization, a hole 200 ft. deep 45° S. 80° E. should be drilled to intersect the main granodiorite stock at right angles to the fault planes indicated at sample station #9.

Hole #4 - Vertical 50 ft. deep will test for the continuity of the mineralization in the zone on the west side of the altered area.

All drill sludges should be sampled as 5 ft. composites and assayed.

Panning of the sludges should be conducted throughout the drilling.

COST

350 ft. rotary (sludge) drilling @ \$3.00 per ft.	=	\$1,050.00
Mobilization and demobilization	2 @ \$100.00	200.00
Drilling time - 7 days		
Sampler - 7 days @ \$20.00 per day	7 x \$20.00	140.00
Assays 70 @ \$4.00		280.00

Engineering & Geology	10 days @ \$50.00 per day	\$500.00
Expenses: Food, mileage, sample cartons, etc.		<u>200.00</u>
	Total	<u>\$2,370.00</u>

Possible tonnage to be tested and indicated grade of Zone A

400 l. x 400 w. x 200 d.

12 cu. ft./ton

= 2,666,666 @ .50 lb Hg \$3.26 per ton

= \$8,693,331.16

The few surface samples indicate Zone A to be marginal for an open-pit mine. An over-all increase of .5lb. Hg will make it commercial. The writer expects the deposit to increase in value at a shallow depth below the surface, or to be structurally controlled so that high-grade enrichments will be sufficient to make the most of Zone A mineable by open-pit methods.

This report is respectfully submitted at Grants Pass, Oregon, this first day of June, 1965, by

ASSOCIATED GEOLOGISTS

Lloyd E. Frizzell, B. Sc.

7-8-65

To Red Devil Group Hg with
Everitt McTimmonds

first stop R.D. # 5

SW $\frac{1}{4}$ sec 9 T. 41 S R 10 W

cut an McInew trail in

weathered coarse grained quartz diorite.

Mineralization is associated with

1-foot brown weathered "dolerite" dike

with Mn-Fe-oxide stained

fractures some visible beneath

a near surface "halo" of pink

stained quartz diorite surrounds dike

cut 2' sample across

dolerite which strikes about

N 20° E dip SE about 40°

8 samples taken at 25' intervals
from NW trending down
trench and one sample

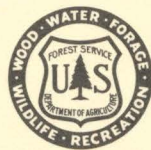
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(UNTIL CASE CLOSED)

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

2810 - MINING CLAIMS
SISKIYOU NATIONAL FOREST
McTIMMONDS, EVERETT K.
JOB NO. 450
ADMINISTRATIVE PROBLEM

MAY 26 1969

REPORT OF MINERAL EXAMINATION



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REPORT OF MINERAL EXAMINATION

Job No. 450

Claimant: Everett K. McTimmonds
235 Lilac Lane
Grants Pass, Oregon 97526

Reason for Examination: Administrative problem caused by desire of claimant to clear the surface of vegetation in a heavily timbered area.

Subject: - Validity of mining claims.

Lands Involved: Eight 20-acre lode claims near the common corner of Section 8, 9, 16, 17, T. 41 S., R. 10 W., Siskiyou National Forest, Curry County, Oregon

Land Status: National Forest Land open to mineral entry.

Location Data: ~~The Red Devil Nos. 1 through 6~~ were located April 18 and 20, 1964 by Everett K. McTimmonds and recorded in Mines 20, pages 245, 253, 247, 256, 249 and 251 respectively. Location notices for Red Devil Nos. 7 and 8 were not found.

Mining District: Diamond Creek, unorganized

Mining Engineer: Colver F. Anderson

Date of Examination: September 13, 1967

Accompanied by: Claimant; Tokarczyk, Lands Staff; and Ohrman, Ranger.

ABSTRACT

The subject claims are in the rugged southwest corner of Oregon near the California line. Access is via the Wimer road, which is between O'Brien, Oregon, and Smith River, California.

The area is mostly serpentine. A diorite stock probably intruded the serpentine and some rocks of volcanic origin. Some cinnabar is associated with the diorite. Small areas of the stock have enough mercury mineral to attract prospectors when metal prices are high.

The Red Devil claims did not draw interest until the price of mercury moved up to \$740 per flask in 1965 and indications were that high prices would prevail. For awhile $1\frac{1}{2}$ to 2 pound rock began to look interesting. As the highest price dipped, so did the interest in the property.

The claimant has enough cuts to establish the character of discovery on the claims if he will do so. He will have to have assays with much better values than the average indicated at present.

There is no occupancy problem.

A sharp rise in the price of mercury would probably renew activity on these claims. No action by the Forest Service is necessary as long as the claimant only does reasonable prospecting and does not start constructing a living cabin.

Location and Topography

The subject claims are in the southwest corner of Oregon in a rugged area between Cleopatra Peak and the Wimer road, crossing Diamond Creek southeasterly from the peak. Access is via the Redwood Highway from Grants Pass to O'Brien or Patrick Creek Tavern. From either place there are 11 miles of rough road to a junction of the Patrick Creek and Wimer roads. The claims are about 15 miles west of this junction and near the Diamond Creek crossing. To approach the claims via a road adds about 5 miles via the Cleopatra Peak road and a 4-wheel drive vehicle is needed after leaving the Wimer Road. The last 2 miles are not recommended for horse or vehicle.

The claims cover a ridge top and the head basin of an old landslide which is a swamp.

Surface Values

The principal surface value is a cedar stand of large trees in the swamp area. This stand covers several acres.

Areal Geology

The claim area is a diorite intrusive surrounded by serpentine.

Economic Geology

The Diamond Creek area has several cinnabar prospects. A small production from one or two has kept interest alive. The Big Boy property is probably on the south end of the same intrusive that is within the subject claims. The mercury mineralization is not quite enough to maintain even an open-pit operation. The last operator tried open-pit and a concentration process before roasting. He reported to me that the ground would average a little over 1 pound per ton. At the present price range of mercury (\$525-\$550 per 76 lb. flask) 2 lb. ore is the minimum which can be mined, if all conditions are favorable.

History and Production

There has been no production from the subject claims.

Pertinent Information

The spur roads shown in the sketch are well suited to a sampling program from the surface or a drill program from the road. The claimant was advised that he had not properly evaluated the areas which are presently opened and this additional work should be done before stripping vegetation in an area 1000 x 600 feet, provided additional sampling resulted in a discovery.

Occupancy

There is no occupancy.

Discovery

The claimant showed us the places where work had been done and cinnabar discovered by panning. He stated that four churn drill holes had been made in the altered diorite zone. No assays had been made of the cuttings - only panning. He made the statement that the ground should average 0.5 lb. per ton.

I sampled a seam in diorite along a road cut on Red Devil No. 5 and a grab sample of diorite from the swamp area. These sample locations are indicated on the sketch. Sample A67-15 is from a width of 14 inches and shows 3 lbs. of mercury per ton. Sample A67-16 is a chunk of altered diorite exposed when a tree uprooted. No flecks of red cinnabar could be seen with a hand lens; so the 2 lbs. per ton assay was surprising.

The diorite does not have any areas of pronounced shearing exposed. A zone of this nature old enough to have been invaded by the cinnabar solutions would be a much more interesting place to prospect. Diorite is a poor host rock for mercury, and the lack of silicification is a negative indication for significant cinnabar mineralization. The lack of silicification also implies a more involved beneficiation process in order to recover the mercury.

A geologic map (author unknown) submitted by the claimant shows a series of samples along the spur roads in Red Devil No. 5 and in the area of the spur roads in Red Devil No. 3. Eight samples along the first mentioned spurs averaged 0.3 lb. per ton and four samples from the other spurs averaged 0.1 lb. A weighted average of the assay results cannot be made as no sample specifications are given. A sample No. 9, taken near my A67-15, went 2 lbs. Another sample among those of the second group appears to have been 40 lbs. If so, the sample is erratic or from a very narrow seam. If from a narrow seam, the value would be low in a weighted average. The samples indicate that cinnabar is not spread throughout the diorite. Normal occurrence in this type of deposit would be mineralization in seams and joints which solutions were able to penetrate.

Conclusion

Ground within the limits of the Red Devil claims has some mercury content. Part of this same diorite intrusive rock has been worked at times down the hill in California, but never successfully. Mercury has been recovered but not enough can be found to establish a profitable operation.

The subject claims have been trenched in such a way that a proper sampling program will prove the ground. If further sampling shows values such as those indicated on the claimant's map, there would be no justification for clearing a large area of the intrusive rock.

Apparently there has been no significant activity on the claims since the examination in 1967.

The two samples I took are borderline for values. More samples are in order if the claimant repeats his desire to clear a large area on the claims.

If the Big Boy mine just south does not operate, then nearby prospects are not as likely to be active.

Recommendations

I recommend that no action be taken as long as reasonable prospecting work is the limit of activity.

Date MAY 26 1969

COLVER F. ANDERSON

COLVER F. ANDERSON, Mining Engineer

APPROVED:

Date JUN - 2 1969

MILVOY M. SUCHY

Acting Assistant Regional Forester