State Department of Geology and Mineral Industries

702 Woodlark Building
Portland, Oregon

HERCULES GROUP (Gold)

Josephine County, Galice Dis.
May 18, 1945 E.A. Youngberg

Ownership:

Hercules Mining Company represented by August Walker, Grants Pass, Oregon.

Location:

The property is located in Township 34 S., Range 7 W., Section 6. It may be reached by taking the Wolf Creek road ¾ mile up Graves Creek from the Graves Creek bridge. The property lies to the south of the creek at this point and may be reached via a bridge from the Wolf Creek road.

Area:

The property consists of several located claims.

Development:

The property has been explored by several thousand feet of bulldozer cuts on the slope south of Graves Creek to expose the mineralized areas. Four churn drill holes several hundred feet in depth have been reported drilled. Results of sampling are not available.

Geology:

The country rocks exposed are largely black slates and shales of the Galice formation. On the west portion of the prospected area several intrusive dikes of dacite-porphory were seen but no signs of mineralization were observed. The exploration appeared to be centered along a sheared zone five to ten feet in width, in the Galice

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formation striking N. 40° E. One to two feet was highly sheared and some evidence of mineralization was noted, consisting of minor veinlets of quartz and sulphide stains. A sample across 1½ feet of the most highly mineralized zone assayed 0.03 ounces in gold per ton. It was reported that a considerable quantity of barite occured in the mineralized zone exposed by the road cuts, but none was noted on this visit to the property.

(SEE CONFIDENTIAL FILE)

STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

329 S. W. OAK STREET
PORTLAND, OREGON

Report on the

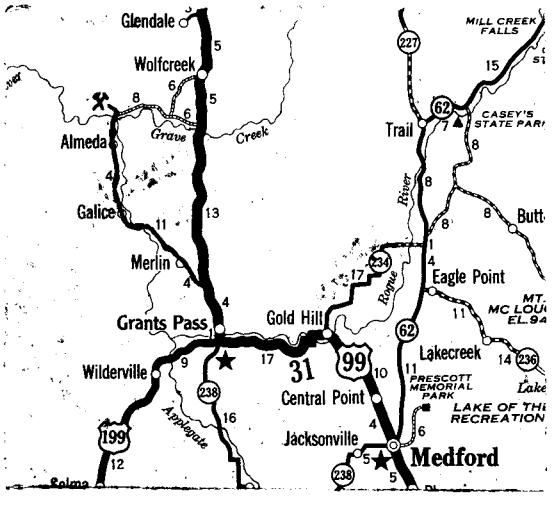
Geology of the

Hercules Mining Company's Claims

T. 33 S., R. 8 W.

This investigation was made at the request of Director Earl K. Nixon to determine the geologic relationships of the area held by the Hercules Mining Company to the end that diagnostic criteria might be developed which would be of material assistance in locating ore bodies. Four and one-half days, from January 16th to 20th, 1940, were spent on the property with particular attention being paid to the geology of the Wheeler tunnel and its exposed veins, of which no. 13 is supposed to be the downward extension of of the California vein. There was no sampling as careful samples and assays are already available.

LOCATION



The Hercules Mining Company's property is located in the southeast part of T. 33 S., R. 8 W., Galice District, northwestern Josephine County, Oregon. The camp is 33 miles from Grants Pass; and is reached via the Pacific highway four miles north of Grants Pass. Thence generally west and northward on the Rogue River road through Galice, to the bridge across the Rogue River just below the mouth of Graves Creek; then up Graves Creek, one mile to Reuben Creek, and up this Creek two miles. The claims consist of the Wheeler group

which includes the California vein and the Ajax group which includes the Ajax vein.

ACKNOWLEDGEMENTS

Officials of the Hercules Mining Company, represented by D. Ford McCormick, P. L. O'Loughlin, and Mr. Walker, superintendent, offered every possible courtesy and help, such as quarters, subsistence, data, and field assistance. Richard Krumm, assayer, was assigned as field assistant, and his generous cooperation is gratefully acknowledged.

Maps used included the Siskiyou National Forest map, scale $\frac{1}{2}$ inch = 1 mile; claim maps of the Hercules Mining Company; a claim map of the "Mount Reuben district"; a reconnaissance geologic map in the U. S. Geological Survey Bulletin 546. There is no topographic map of this particular spot.

GEOLOGIC RELATIONS

ROCK FORMATIONS

According to Diller 1/* and Winchell 2/, the formations of the Galice District are the Galice (Jurassic) formation of meta-sediments, greenstone with interbedded meta-sediments, and the Dothan (Jurassic) meta-sediments. The Galice formation consists of slates, quartzites, and schists that trend slightly east of north with eastward dips at high angles. The Galice-Greenstone contact also trends slightly east of north, about one-half mile east of the area studied. Greenstone is the principal rock of the area, and consists of meta-igneous rocks with some interbedded meta-sediments; the igneous rocks originally were basalts, andesites, dacites, and dacite porphyries. The Greenstone-Dothan contact strikes slightly east of north along a line roughly parallel to Whiskey Creek. The western portion of the greenstone contains some serpentine and some granitoid rock. The Dothan formation is similar to the Galice formation and does not outcrop in the area studied.

* Numbers refer to references listed in the bibliography at the end of this report.

Galice Formation of Meta-Sediments

A belt of meta-sediments was identified in the area between the eastern margin of the map and a line about one-half mile to the westward. These rocks seem to correspond with Diller's description 1/ of the Galice formation, although his map indicates only greenstone outcrops herein. It is suggested that this narrow belt may represent Galice formation included in the greenstone.

Road cuts along the Forest Service road west of the bridge over Rogue River show these meta-sediments as fine-grained, lithified, and somewhat resilicified shales, quartzites, and cherts. Banding is quite prominent at some places, and is tentatively supposed to be depositional in nature. It is difficult to distinguish many of these meta-sediments from the meta-igneous rocks of the greenstones, by megascopic means. Identification is further complicated by probable interbedding of greenstone with the meta-sediments.

There is some indication of recrystallization, after the manner explained by Goodspeed for the Cornucopia, and that silica was rejected, or moved by lateral secretion, to form some of the silica stringers. At one point along the Ajax road, and at one in the Wheeler tunnel, a fine-grained rock has inclusions or segregations of a lighter-colored, and coarser-grained material. The "inclusions ?" seldom exceed three inches in size; sometimes the boundaries are angular and sometimes indistinct. Identification of the rock must await a report on thin-sections to be made.

The meta-sediments have been sheared extensively and quartz (silica) stringers are common along shear-planes. The stringers range in thickness from paper-thin to one-half inch. Minor faulting, with resultant displacement of not to exceed two inches, has disturbed many of these stringers.

Dikes of a porhpyritic meta-igneous rock cut the meta-sediments in at least two places along the Forest Service road. The phenocrysts measure $\frac{1}{4}$ inch in length.

Greenstone

The greenstone consists of a series of rocks that originally were igneous, fine-grained, and of dark color. Phenocrysts of feldspar and quartz? are present, and in most cases the outlines of the crystals have been corroded. As discussed under the Galice formation, it is extremely difficult to determine, by megascopic means whether the "phenocrysts" are properly phenocrysts, or whether they are porphyroblasts that developed as the rock recrystallized. Crystal boundaries are difficult to find except in a few of the dike rocks.

Greenstone is interbedded with the meta-sediments, particularly near the contact, and in their metamorphosed condition will be mapped first as one and then the other. Thin sections must be resorted to, as a means of unravelling some of the difficulties.

Igneous Rocks

Several dikes of igneous rock, two of which are exposed along the Rogue River, have a fine-grained matrix with $\frac{1}{4}$ inch phenocrysts of pyroxene?. When this, or a similar rock, is found underground, it may appear as a sort of agglomerate for the phenocrysts boundaries become corroded and the phenocrysts look like small pebbles.

Contact Relations

Lack of contact metamorphism between meta-sediment and meta-igneous rocks, and between the dike rocks , was a striking feature.

An interesting contact relationship is that one along the Ajax road where a fine-grained dark-colored rock, presumably a basalt, becomes mixed with rounded and angular three-inch sized masses of a light-colored, coarser rock that is called "diorite" locally. The general relationships suggest a resorbtion and recrystallization of a sediment to produce a pseudo-igneous rock.

STRUCTURE

Diller 1/ states that "the strata older than the Cretaceous strike generally northeast and southwest, parallel to the rock belts, and their dip for the most part is to the southeast, though in many places they are vertical". The strata on the northwest are younger than those on the southeast, which is explained by overturning or faulting as shown in his sketch (p. 18).

The general trend of the rocks in the Hercules Mining Company's areas is slightly east of north, and the dips are at high angles to either the east or west. Dips were taken only on shear planes, as evidence of true bedding was not obtained. Easterly dips prevail in the Wheeler tunnel from the portal to vein no. 7, west of which westerly dips prevail.

Shear zones from one to 20 feet wide are quite common, so much so that in the first 2000 feet west of the Wheeler tunnel portal, eleven were counted. The trend is slightly east of north where measured at the surface; in the Wheeler tunnel it varies from northeast to northwest. This difference may be the result of better exposures and subsequently more accurate measurement.

The more distinct shear zones trend the same as the banding in the meta-sediments, slightly east of north. ~~Width/ft~~ They are cut by narrow, flat-dipping shear zones that frequently offset the steeply dipping ones. Both zones appear to pinch and swell, as in the Ajax no. 4 tunnel, where some of the workings tend to follow these zones. The "veins" of the Wheeler tunnel are in shear zones, and the country rock between the "veins" is cut by many more.

METAMORPHISM

Regional

Much of the metamorphism has been regional and is characterized by alteration to meta-sediments and meta-igneous rocks. There has been recrystallization, and it is suggested that silica frequently was rejected from certain recrystallizing masses causing others to be silicified and giving rise to some of the quartz stringers. Development of pyrite cubes in the country rock of

The area suggests that the iron sulfide came from the enclosing rock as part of the metamorphic action

Contact Metamorphism

No evidence of contact-metamorphism was noted*.

*The inclusions or segregations seen along the lower part of the Ajax road may be an exception.

Hydrothermal Metamorphism

Much of the regional metamorphism may have been of the hydrothermal type. The type of mineralization corresponds more closely to Lindgren's 4/ ascending hot solutions with deposition at intermediate depths, as explained under ore deposits.

WEATHERING

There is noteworthy depth of weathering. The Ajax road cuts along one of the hillsides, and although slopes measure 30° - 40°, there is as much as 20-30 feet of "soil". Near the 2300 foot elevation a light-colored, medium-grained rock is weathered to clay, much like the weathered tuffs of the Willamette Valley. Inside the Ajax no. 4 tunnel, the surface of the wall rock is considerably altered by weathering to a depth of at least 12 inches. As there is between 100-200 feet of back, it is presumed that most of this weathering has taken place since the adit was opened.

ORE DEPOSITS

GENERAL

Diller (pp. 23-25) 1/ discusses the generalized ore deposition for southwestern Oregon as follows:

"The diverse stresses and consequent earth movements involved in the development of the Klamath Mountains have resulted in widespread crushing and shearing of the rocks, but the fissuring was general instead of being concentrated in narrow belts. The final veining of the rocks and the accompanying ore deposition in general formed many small though commonly rich ore bodies instead of a few larger ones.....The gold-bearing quartz is widely distributed and occurs in small veins, veinlets, and brecciated zones in several kinds of rock. Most of the mines and prospects are situated in the greenstones, but some lie in the granodiorites, some in metamorphosed sediments, and a few prospects in peridotites or their decomposition product, serpentine.....A striking feature of many of the gold-bearing veins is that they are found in proximity to serpentine".

"The ores are found in several relationships in these rocks. In some places they occur in greenstones at considerable distances from other kinds of rock; in others they are in the greenstones but at the contact with or near to granodiorites and related rocks. Some veins are parallel to the schistosity in the greenstones. Again, some veinlets occur in both greenstones and sediments, and in such places it is not unusual to find rich ores near the contact of these rocks and closely related to dikes which cut them. This relationship of the rich ore to dikes is also shown where the veinlets lie in the sediments only."

"The veins and veinlets run in all directions. However, a comparison of the more persistent of them showed that more lie in an east-west direction than in a north-south direction. The dips of the veins vary greatly; most of them have fairly high dips, but some are nearly flat and some are vertical..... Such veins (wide ones of more than 10 feet) are either separated into several parts by "horses" or there is a decided brecciation of their materials."

"The vein filling consists mainly of quartz, which is usually of a milky-white color. Many of the veins contain quartz crystals with perfect outlines, indicating that the deposition took place in open fissures. Calcite is commonly found with the quartz,.....the sulphides rarely exceed three percent of the ores."

"A study of the fillings of the veins in different kinds of rock suggests that the nature of the country rock has not influenced the contents of the fissures to any appreciable extent. The gold is present as free gold in the quartz, and is also associated with the sulphides and tellurides, some of the concentrates being rich.....Little gold has been found in the country rocks adjacent to the veins.....The lower limit of the zone of oxidation is in general less than 100 feet below the surface, but in places it exceeds 200 feet."

There is some confusion in the local use of the word "veins" by miners at the Hercules property. "Veins" is used to indicate either the entire shear zone with its schistose rock and quartz seams, or it may refer to the quartz seam that carries gold. Its use, herein, will be restricted to the conventional use of the word.

As exposed in the Wheeler tunnel, the California tunnel, and the Ajax no. 4 tunnel, the veins are found in shear zones. These zones contain quartz stringers and lenses that tend to follow the planes of schistosity. The only difference that could be noted between most of the veins and their attendant sheared country rock and the ordinary shear zones is that the veins are reported to carry gold.

OUTCROPS

Considerable oral data were secured about outcrops of quartz stringers, and ore-veins on the surface, but none could be found, in the time available.

There is a gossan deposit on the Ajax road at the point marked gossan on the map. It covers an area of about 150 square yards on a 30° slope, and has the appearance of a typical gossan material. Considerable prospecting has been done on this gossan, but assays of samples from the gossan show no gold. 3/

3/ McCormick, D. Ford, personal communication, January 10, 1940

Quartz outcrops are to be found in a number of places. These stand above the ground as resistent masses and many of them have been sampled by McCormick who reports that none of them carry gold enough to justify calling them veins.

FORM

The ore is found in quartz stringers and veins between planes of schistosity in shear zones. Width varies from paper-thin to three feet, according toreports; the widest vein seen was the one-foot California vein in the California tunnel. The veins are irregular in width, they pinch and swell within the shear zone, and may produce bunches, or "augen" of quartz the size of a football. Such veins may tend to produce a pocket and make prediction of ore shoots difficult.

Many instances were found where thin bands of schist were rolled into the quartz, indicating movement after the quartz was in place. Some of the quartz stringers are cut off by minor cross-faults with displacement measured in inches.

ATTITUDE

Surface outcrops give the impression that the shear zones have a general trend that is slightly east of north, and high-angle dips of 60° to 80° to the east or west. In general, shear zones dip to the east on the east side of the area, and dip to the west on the west side.

Dips and strikes of shear zones that are called veins in the Wheeler tunnel are as follows:

No. of Vein	Distance from Portal	Dip	Strike	
1	2180	60° S. 60° E.	N. 30° E.	
2	2555	70° N. 35° W.	N. 55° E.	
3	2800	70° S. 80° W.	N. 10° W.	
4	3223	75° S. 75° E.	N. 15° E.	
5.	4035	65° S. 70° E.	N. 20° E.	
6	4370	80° S. 60° E.	N. 30° E.	
7	4680	70° N. 75° W.	N. 15° E.	reported
8.	4760	85° N. 88° W.	N. 02° W.	Alleged 6% copper
9	4930	65° N. 65° W.	N. 25° E.	
10	5130	75° N. 40° W.	S. 50° W.	
11	5250	65° N. 42° E.	S. 48° E.	water-bearing vein
12	6478	25° S. 72° E.	S. 18° W.	
13	6662	58° N. 60° W.	S. 30° W.	"California" vein.

DISTRIBUTION OF MINERALS

Quartz, calcite, and pyrite, with some gold, make up the ore body. Quartz is most abundant, occurring in the planes of schistosity, and in irregular bunches in the schist. Calcite is not as abundant as quartz; its occurrence is similar, and it too, was seen to be barren of pyrite. Pyrite is abundant in the sheared country rock adjacent to the quartz or calcite veins. Pyrite cubes were also found scattered throughout certain portions of the massive country rock. The pyrite carries little or no gold. 3/. Chalcopyrite is

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3/ McCormick, D. Ford, Personnal communication, January 10, 1940

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reported, particularly in the no. 8 vein where the ore was supposed to assay six percent copper. Chalcopyrite minerals were not identified during the survey.

The ore is considered to be gold, and as such, no distribution of ore minerals was noted. No free gold could be detected, and no reliable clues as to gold distribution in quartz could be gotten from assays.

Pyrite is common in shear zones, but with only one exception, the pyrite is found in the sheared greenstones. It occurs as small cubes, ranging in size from 1/16 inch to 1/4 inch. Each crystal is a distinct unit, - that is, the crystals are not bunched or grouped. The exception is found at the west side of vein no. 13, on the west wall of the north drift.

Here, pyrite is bunched in the shear zone to form what might be called "massive sulphides". There is no great quantity of it, but it may be an indication of improvement in ore deposition conditions. Pyrite cubes, and small spots of more massive pyrite, are found in the quartz itself, - the first indication of sulphides in the quartz.

Pyrite, therefore, is found in the sheared country rock as isolated, small cubes. Pyrite in quartz was found at vein no. 13 only; elsewhere, pyrite was not found in quartz. Massive pyrite, in small bunches, was found only at vein no. 13. Chalcopyrite has been reported but was not identified.

GENESIS

Diller (pp. 23-25) 1/, discusses the ore deposits for the Galice-Kerby area, and such factors as; (1) the intricate network of stringers or decided brecciation; (2) milky-white quartz with crystals having perfect outlines, among other things, indicates deposition in open fissures; (3) no contact metamorphism or replacement of wall rock; (4) and little gold being found in the country rocks; /the ~~causes mix conclusion that the ore deposits~~.

The conclusion is reached that these veins are the type that are formed at intermediate depths, by ascending thermal solutions that are connected with igneous intrusions. This type of gold deposit is characteristic of the gold-quartz veins of the Sierra Nevada range. (Lindgren, pp. 565-576) 4/

It has been noted that the shear zones contain quartz stringers between planes of schistosity, with enlargements in the size of the quartz stringers at various points; that the quartz is milky-white in color and tends to be vuggy with milky-white crystals in the cavities; there has been a noteworthy absence of contact metamorpphism and alteration of the country rock; there is some development of calcite. All these factors tend to support the conclusion as to the type of ore deposit.

The great abundance of quartz is a puzzling problem. Consideration was

given to its having been rejected during recrystallization of the meta-sediments and meta-igneous rocks, and there is some evidence to support this contention. Lindgren (p. 575) 4/ states a situation for the Sierra Nevada type veins that seems to apply to the Hercules area; "no hypothesis of lateral secretion can account for the great masses of quartz, nor the occurrence of the veins in the most diverse rocks. For an explanation of their origin we are compelled to look to the great batholithic intrusion, or rather to the many minor intrusions on the flank of the range". This explanation can be accepted as a working hypothesis for the Hercules area, at the present time.

PAY-SHOOTS

Little can be said about pay-shoots, or the probability of encountering pay-shoots, as there is no point at which a pay-shoot could be identified with any degree of certainty. The extremely lenticular nature of the quartz veins, - and lenticularity on such a small scale, - makes it difficult to predict larger lentils. Such "should" occur, and are reported to occur, but none were seen. Evidence of minor faulting is found in the Wheeler tunnel, and it is probable that minor faulting could displace a vein, such as the California vein, a considerable amount in the 1000 feet between the surface and the Wheeler tunnel. Persistence of a uniform dip, at depths, under these conditions, is a moot question.

The presence, or absence of pay-shoots therefore cannot be predicted at this time, but the information at hand, at this date, appears to be unfavorable rather than favorable to the existence of pay-shoots on this property. It is sufficiently unfavorable to cast doubt on the advisability of extensive development on the no. 13 vein, without other, additional, and at present nonexistent, data.

SUMMARY

1. Mt. Reuben area is underlain by Galice? formation meta-sediments on the east and greenstones on the west. Contact zones could not be definitely

determined, as the greenstones must have intruded the sediments, or were formed contemporaneously with them.

2. No visible evidence of contact metamorphism could be found, unless the light colored spots in fine-grained dark rock along the Ajax road and in the Wheeler tunnel represent this phase.

3. Both series are cut by shear zones that trend slightly east of north and dip at high angles. In the eastern part of the area the generalized dip is east, an and in the western part it is west.

4. A second set of narrow shear zones cut the north-south steeply dipping zones and frequently offset them by minor distances.

5. The shear zones pinch and ~~swell~~ swell on a minor scale and no evidence was seen to prove the existence of a large swell that might justify large scale mining operations.

6. Strike of any one shear zone varies considerably.

7. No pyrite was found in the quartz with one exception (#13). Small pyrite cubes are abundant in the sheared country rock and to a more limited extent in the sounder country rock. The pyrite carries no gold.

8. Conditions of ore deposition point toward ascending thermal solutions acting at intermediate depths.

9. All quartz outcrops and veins that were visited, carry no gold, or only minor amounts according to samples taken by McCormick and assayed by Krumm.

10. No indication of a pay-shoot, or of pay-shoot development was seen.

CONCLUSIONS

1. Geologic conditions were such that gold could have been deposited.

2. The small size of the quartz stringers and veins, the tendency to pinch and swell within short distances, the general barrenness, and the almost complete absence of pyrite, are not favorable indications of the presence of an ore body.

3. Erratic dip and strike coupled with minor faulting makes the projection of any vein to greater depths, difficult to almost impossible.

4. In spite of the many openings made into the subsurface, no pay-shoots were seen. This factor, plus those mentioned in no. 2 and no. 3, make it ~~is~~ unwise to predict pay-shoots in places that can be reached only by extensive development.

5. The data, at present, are sufficiently unfavorable to cast doubt on the advisability of extensive development on no. 13 vein without additional data.

6. No way of correlating the California vein with no. 13 vein could be found.

REFERENCES

1. Diller, J. S., Mineral resources of southwestern Oregon; U. S. Geological Survey Bulletin 546, 1914.

2. Winchell, A. N., Petrology and mineral resources of Jackson and Josephine counties, Oregon; Oregon Bureau of Mines and Geology, v. 1, no. 5, 1914.

3. McCormick, D. Ford, personnal communication.

4. Lindgren, Waldemar, Mineral deposits; McGraw-Hill.

Ray C. Treasher, Field Geologist,
State Department of Geology and Mineral Industries.

January 30, 1940

CONFIDENTIAL

RECOMMENDATIONS to accompany report on the Hercules Mining Company's property in T. 33 S., R. 8 W., Galice District, northwestern Josephine County.

From what I have seen, I would consider the Hercules property to be a prospect. Recommended development is to clean out no. 13 to determine if the conditions found along the west wall are an indication of paying quantities of ore. Otherwise, to enter the California tunnel and begin on that portion of the vein where it is claimed that an ore body existed, and follow the ore from there, rather than undertake underground prospecting from the Wheeler tunnel.

Ray C. Treasher,
January 30, 1940.

Map filed in map drawer
drafting room
Tube 16

HERCULES MINING COMPANY

Josephine County-Galice District
Hercules Mining Company

January 16, 1940
Foggy till 11 A.M.;
Clear

Ajax Road

Portal of Wheeler tunnel, elevation 1179'; spec. #1, appears to be a basalt or fine-grained metasediment with a minor amount of alteration. N.E. back toward Reuben Creek is similar material but more sheared. The tunnel above, on the new road, appears to be in a sheared "greenstone" similar to #1, and a few cubes of pyrite were found in the "greenstone". This same rock, with varying degrees of alteration and schistosity to elevation 1525', to the gossan. The gossan is stuck on a very steep hillside, and is limited in area. It reportedly carries no gold; - spec. #2, and is exposed to an elevation of 1600'.

At elevation 1675', quartzose material which may be altered quartzite or resilicified greenstone. Spec. #3. Road cuts are covered with surface slump to an elevation of 1790' where a Hercules Mining Company sample B_1 was taken from silicified sheared rock. Shear planes dip 50° S. 65° E. There are a few small quartz atringers.

At about elevation 1900' is a fine-grained rock like basalt with inclusions or segregations of a light-colored rock that "looks" like diorite. Spec. #5 shows these "segregations"; that they are irregular in shape, rounded to angular, completely isolating portions of the fine-grained rock. The granular rock comes into prominence until the "inclusions" look like small zenoliths mostly elongated in a general vertical direction. The granular rock, under the lens, has no definite crystal texture, - it appears more like an altered or re-silicified rock. To the eye, it appears to be a normal, medium-grained rock with quartz. Suggestions of Goodspeed's theory. Spec. #4 at elevation 1950' is of granular rock, very tough, no definite line of fracture.

Josephine County-Galice District
Hercules Mining Company

January 16, 1940

At elevation 2150' there is a narrow belt of fine-grained material like black shale, the parting planes dip 75° N. 25° W. On the north is a fine-grained rock in which are small particles of a greenish rock. Looks like a fine-grained agglomerate. (Later: this may be like the porphyritic dike rock along Rogue River). On the south is the granular rock, the contact is sharp, little or no evidence of contact metamorphism. The granular rock continues for some distance, with small quartz seams cutting in many directions. Some are paper thin, occupying joint planes;

others are thicker, up to 4". No evidence of sulfides. The granular rock gives way to the fine-grained rock with "segregations" or "inclusions", then the fine-grained rock itself. Near the last sharp turn as the road heads westward, the rock is greatly weathered, reduced to clay. Some is reddish, some red-white; - it is apparently the light-colored granular rock that has altered to clay and stained with iron.

ROGUE RIVER ROAD WEST OF BRIDGE AT GRAVES CREEK

Fine-grained sediments, highly sheared, make up most of the rock over this distance. At the bridge, it is a fine-grained quartzite, its appearance suggests that the "basalt" along the Ajax road is really sediment. Some of this rock contains small cavities, like stretched amygdules, but later finds indicate that these are solution cavities, originally occupied by a soft, dark-colored mineral. Small quartz seams cut the rock principally parallel to bedding or schistosity but also in many x-fractures. In some places the vertical seams are cut off by the flat-angle joints, indicating a sequence of movement.

Some of the sediment is so fine-grained that it is more like a chert. East of Ajax Creek, the dip of the schistosity is 75° S. 82° E. West of Ajax Creek much of the rock is banded, and the dip is 80° S. 57° E. At 2550' from the bridge is a porphyritic rock with $\frac{1}{4}$" crystals with cleavage. This is probably an igneous rock. Spec. #6. At 4100' is a light-colored rock with 1/8" grains or crystals of quartz or silica. It is difficult to say whether this is igneous or sedimentary.

January 17th, 1940
Clear

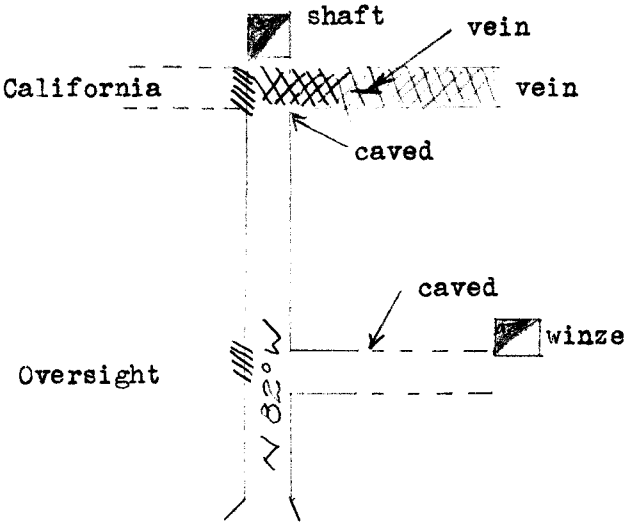
ROAD TO CALIFORNIA SHAFT, TRAIL TO AJAX AND CAMP

Up the road to Gold Bug mill, where trail was taken in a general E-NE direction. The discovery cut of the Majority claim, dated 1935, by Marie Romey was found; quartz with a spotted rock and a cherty rock as country. Two cuts, not over 25' each.

On up the hill to the Molly Hill shafts. Two shafts both caved or full of water. The dump shows a light-colored, fine-grained rock, somewhat cherty and sheared and x-fractured; a "porphyritic" rock, locally called diorite porphyry, and quartz in the schist. Thin seams of schist are included in the quartz and the whole mass is "rolled up" as if movement had taken place contemporaneously or just after quartz emplacement. Spec. #8. The quartz is quite vuggy and distorted, milky crystals are common.

E-NE to California shaft at elevation of 3487'. Shaft caved at the collar. Dump shows quartz like at Molly Hill, and the light-colored cherty rock. The California tunnel, or adit, portal at 3275' (aneroid). A small mill (stripped) that had 2 stamps. Tunnel has 18" of water.

Dump shows rock like at Molly Hill. Pyrite cubes are common in the schist. The Oversight vein is represented in the adit, where x-cut by a 15' shear zone. Quartz seams occupy the schistosity planes and range from 1/8" - 1/2" in width and seem to have no particular direction or orientation. They frequently cut across the schistosity and pinch and swell. Occasionally they widen into "rolls" or augen, the size of a football. A drift to the north is badly caved and cannot be entered for over 15' but there is no evidence that the "vein" widens or that there is a concentration of quartz.



The California drift is badly caved at its intersection with the adit and one can get only a few feet N. of the intersection. A 1' quartz vein is exposed in the back, strikes N. 14° E., dips 73° N. 76° W. North of this it is caved and no information could be gotten, in place. The country rock in the adit is principally "porphyry."

Down the hill to the SE past the center 1/4 sec. cor. sec. 36, and down the ridge to the Ajax road. Somewhere within 100' of the 1/4 corner is the change from "porphyry" on the west to the "quartzite" on the east. The trail passes by innumerable small test pits and trenches, many of them showing small bits of quartz. At one point, a 1' quartz outcrop was not prospected although it is reported that "just over the hill" to the north is a test trench. Still farther east about 300 yards west of Ajax road junction is a schistose quartzite outcrop that dips 70° S. 73° E.

January 18, 1940

AJAX MINE

Trip to Grants Pass, evening of January 17, and back out to Hercules by noon January 18. During P.M. Crum and I went up to the Ajax, over Ajax road. Ajax adit goes straight in, in a general westerly direction about 300' where it begins to branch and gopher hole all over the country to the south. There are two general sets of shear zones, one trending

E-W with a flat dip, and one N-S with a high angle dip. In some places the N-S shears seem to be cut off by the E-W shears. Considerable quartz has been injected along the schistosity of the "veins" in the same manner as on other shear zones. There is no regularity to these quartz seams, and the quartz pinches and swells, and disappears altogether. No "vein" as such could be seen. Some fresh surfaces show few pyrite cubes, always in the schist, never in the quartz. Country rock and shear zones are metamorphosed sediment.

January 19, 1940
Foggy - above freezing

MT. REUBEN ADIT

Vein # 1 - 2180'
2 - 2555'
3 - 2800'
4 - 3223'
5 - 4035'
6 - 4370'
7 - 4680'
8 - 4760' - supposed to carry 6.0% Cu.
9 - 4930'
10 - 5130' - dip 75° N 40° W; strike S. 50° W.
11 - 5250' - water vein, "true fissure vein." Dip 65° N. 42° E; strike S. 48° E.
12 - 6478' - dip 25° S. 72° E; strike S. 18° W.
13 - 6662' - dip 58° N. 60° W; strike S. 30° W.

Distances scaled from blue prints, progress profile, Mt. Reuben tunnel scale 1" = 200'.
Elevation portal 1178.94' (instrument survey)
Elevation face 1210' (scaled)
Grade of tunnel 0.50%

Face - 7344' (measured)

Drill hole +534' to #15 vein, +59' to #16 (memory A. Walker)

Feet	Paces	
90	20	1' narrow shear zone dips 55° S. 65° E.
155	35	3' ill defined shear zone, a little quartz 65° S. 70° E.
200	44	Shear zone dip 80° S. 55° E. At 43-45 paces there are a number of quartz "auger" football size. Beginning at 46 paces a flat lying, east dipping, 1" quartz seam. This seam and others follow to about 100 paces - some quartz and an eastward dip of not over 10°.
470	104	Shear zone - quartz. Dip 40° S. 65° W. Some nearly horizontal seams for about 30 paces.
685	152	Well defined fracture dips 10° N. 60° W. No quartz on this fracture.
720	170	Shear zone dip 35° S. 40° E. Some quartz.
845	187	Fractures a bit more widely spaced than in shear zones but well defined, plates 1" thick dip 60° N. 65° E. over distance of 10 paces. At 197 paces on shear zone same as above.

Feet	Paces	
960	214	Shear zone with high angle S.E. dip.
1000	222	Shear zone - quartz dip 55° S. 40° E. well defined about 20' wide.
1295	264	Fault that has a dip 20° S. 65° E. Just underneath the fault is a narrow band of light-colored chert.
1320	276	Shear zone with quartz, dip 55° S. 25° E. Well developed. Considerable chloritization and some of zone is soft enough to be dug out with pocket knife. Quartz is bunchy in spots, stringy and quite contorted in others.
	292	Another semi-shear zone trending like above; rock is cherty and banded
	305	Compressor receiver tank.
1940	430	Banded cherty rock dipping 80° S. 15° E. followed by shear zones that dip 60° S. 25° E. at 435 paces.
	511	#0 drift.
	530 to 560	- Cherty rock.
	546	Receiver tank
	590	#2.
		#2 vein dips 70° N. 35° W. chloritized shear zone with bunchy quartz and stringers on schistosity. Greenstone quartz seam
2600		"Segregations" begin to appear in the "greenstone"
2700		Wall rock - S. wall begins to have porphyroblasts which may be corroded phenocrysts,, indicating an igneous rock, or it may be a recrystalized sedimentary
2800		#3 dips 70° S. 80° W. well developed shear zone with some quartz - no quartz vein. Scattered pyrite in schist.
2900		West wall of #3 appears to be a porphyroid rock that contains segregations or inclusions. At 2900' the rock has rounded to angular "zenoliths", 1 1/2" maximum of metamorphic rock.
3060'		Calcite vein 4" wide dipping 25° S. 15° W. faulted 6"
3223		#4 vein - shearing not well developed, some quartz up to 1" wide, offset. There is banding that crosses schistosity at an angle.
		#9 A Well fractured, very schistose - also cross fractured. Quartz seam 8" wide at <u>east</u> side of zone.

Strike S. 70° W. Dip 60° SE or dip 60° S. 30° E, new tunnel above portal of Wheeler tunnel about 60' long, of which the last 40' is on the strike of the vein.

January 20, 1940

Dike Adit Above Camp

Adit enters at S. 25° W. for three sets of timbers and a distance of 20', then follows strike of shear zone, S. 70° W. Shear zone dips 60° S.

30° E. and strikes S. 70° W. The face is 60' from portal. Shear zone is in "greenstone", pyritized with pyrite cubes to a small extent. The quartz is bunchy, seldom larger than a football, and the shear zone has the general appearance of other shear zones in the vicinity. Assays by Dick Krumm indicate no gold. Work was discontinued at midnight, January 19. Elevation of portal 1270' (aneroid).

Wheeler tunnel shear zones - by Dick Krumm, 1/20/40.

#1 - dip 60° S. 60° E; strike N. 30° E.
#4 - dip 75° S. 75° E; strike N. 15° E.
#5 - dip 65° S. 70° E; strike N. 20° E.
#6 - dip 80° S. 60° E; strike N. 30° E.
#7 - dip 70° N. 75° W; strike N. 15° E.
#8 - dip 85° S. 88° W; strike N. 02° W.
#9 - dip 65° N. 65° W; strike N. 25° E. (4930')

Report on the

Geology of the

Hercules Mining Company's Claims

T. 33 S., R. 8 W.

This investigation was made at the request of Director Earl K. Nixon to determine the geologic relationships of the area held by the Hercules Mining Company to the end that diagnostic criteria might be developed which would be of material assistance in locating ore bodies. Four and one-half days, from January 16th to 20th, 1940, were spent on the property with particular attention being paid to the geology of the Wheeler tunnel and its exposed veins, of which no. 13 is supposed to be the downward extension of of the California vein. There was no sampling as careful samples and assays are already available.

LOCATION

The Hercules Mining Company's property is located in the southeast part of T. 33 S., R. 8 W., Galice District, northwestern Josephine County, Oregon. The camp is 33 miles from Grants Pass; and is reached via the Pacific highway four miles north of Grants Pass. Thence generally west and northward on the Rogue River road through Galice, to the bridge across the Rogue River just below the mouth of Graves Creek; then up Graves Creek, one mile to Reuben Creek, and up this Creek two miles. The claims consist of the Wheeler group

which includes the California vein and the Ajax group which includes the Ajax vein.

ACKNOWLEDGEMENTS

Officials of the Hercules Mining Company, represented by D. Ford McCormick, P. L. O'Loughlin, and Mr. Walker, superintendent, offered every possible courtesy and help, such as quarters, subsistence, data, and field assistance. Richard Krumm, assayer, was assigned as field assistant, and his generous cooperation is gratefully acknowledged.

Maps used included the Siskiyou National Forest map, scale $\frac{1}{2}$ inch = 1 mile; claim maps of the Hercules Mining Company; a claim map of the "Mount Reuben district"; a reconnaissance geologic map in the U. S. Geological Survey Bulletin 546. There is no topographic map of this particular spot.

GEOLOGIC RELATIONS

ROCK FORMATIONS

A According to Diller 1/* and Winchell 2/, the formations of the Galice

* Numbers refer to references listed in the bibliography at the end of this report.

District are the Galice (Jurassic) formation of meta-sediments, greenstone with interbedded meta-sediments, and the Dothan (Jurassic) meta-sediments. The Galice formation consists of slates, quartzites, and schists that trend slightly east of north with eastward dips at high angles. The Galice-Greenstone contact also trends slightly east of north, about one-half mile east of the area studied. Greenstone is the principal rock of the area, and consists of meta-igneous rocks with some interbedded meta-sediments; the igneous rocks originally were basalts, andesites, dacites, and dacite porphyries. The Greenstone-Dothan contact strikes slightly east of north along a line roughly parallel to Whiskey Creek. The western portion of the greenstone contains some serpentine and some granitoid rock. The Dothan formation is similar to the Galice formation and does not outcrop in the area studied.

Galice Formation of Meta-Sediments

A belt of meta-sediments was identified in the area between the eastern margin of the map and a line about one-half mile to the westward. These rocks seem to correspond with Diller's description 1/ of the Galice formation, although his map indicates only greenstone outcrops herein. It is suggested that this narrow belt may represent Galice formation included in the greenstone.

Road cuts along the Forest Service road west of the bridge over Rogue River show these meta-sediments as fine-grained, lithified, and somewhat re-silicified shales, quartzites, and cherts. Banding is quite prominent at some places, and is tentatively supposed to be depositional in nature. It is difficult to distinguish many of these meta-sediments from the meta-igneous rocks of the greenstones, by megascopic means. Identification is further complicated by probable interbedding of greenstone with the meta-sediments.

There is some indication of recrystallization, after the manner explained by Goodspeed for the Cornucopia, and that silica was rejected, or moved by lateral secretion, to form some of the silica stringers. At one point along the Ajax road, and at one in the Wheeler tunnel, a fine-grained rock has inclusions or segregations of a lighter-colored, and coarser-grained material. The "inclusions ?" seldom exceed three inches in size; sometimes the boundaries are angular and sometimes indistinct. Identification of the rock must await a report on thin-sections to be made.

The meta-sediments have been sheared extensively and quartz (silica) stringers are common along shear-planes. The stringers range in thickness from paper-thin to one-half inch. Minor faulting, with resultant displacement of not to exceed two inches, has disturbed many of these stringers.

Dikes of a porphyritic meta-igneous rock cut the meta-sediments in at least two places along the Forest Service road. The phenocrysts measure $\frac{1}{8}$ inch in length.

Greenstone

The greenstone consists of a series of rocks that originally were igneous, fine-grained, and of dark color. Phenocrysts of feldspar and quartz? are present, and in most cases the outlines of the crystals have been corroded. As discussed under the Galice formation, it is extremely difficult to determine, by megascopic means whether the "phenocrysts" are properly phenocrysts, or whether they are porphyroblasts that developed as the rock recrystallized. Crystal boundaries are difficult to find except in a few of the dike rocks.

Greenstone is interbedded with the meta-sediments, particularly near the contact, and in their metamorphosed condition will be mapped first as one and then the other. Thin sections must be resorted to, as a means of unravelling some of the difficulties.

Igneous Rocks

Several dikes of igneous rock, two of which are exposed along the Rogue River, have a fine-grained matrix with ½ inch phenocrysts of pyroxene?. When this, or a similar rock, is found underground, it may appear as a sort of agglomerate for the phenocrysts boundaries become corroded and the phenocrysts look like small pebbles.

Contact Relations

Lack of contact metamorphism between meta-sediment and meta-igneous rocks, and between the dike rocks , was a striking feature.

An interesting contact relationship is that one along the Ajax road where a fine-grained dark-colored rock, presumably a basalt, becomes mixed with rounded and angular three-inch sized masses of a light-colored, coarser rock that is called "diorite" locally. The general relationships suggest a resorbtion and recrystallization of a sediment to produce a pseudo-igneous rock.

STRUCTURE

Diller 1/ states that "the strata older than the Cretaceous strike generally northeast and southwest, parallel to the rock belts, and their dip for the most part is to the southeast, though in many places they are vertical". The strata on the northwest are younger than those on the southeast, which is explained by overturning or faulting as shown in his sketch (p. 18).

The general trend of the rocks in the Hercules Mining Company's areas is slightly east of north, and the dips are at high angles to either the east or west. Dips were taken only on shear planes, as evidence of true bedding was not obtained. Easterly dips prevail in the Wheeler tunnel from the portal to vein no. 7, west of which westerly dips prevail.

Shear zones from one to 20 feet wide are quite common, so much so that in the first 2000 feet west of the Wheeler tunnel portal, eleven were counted. The trend is slightly east of north where measured at the surface; in the Wheeler tunnel it varies from northeast to northwest. This difference may be the result of better exposures and subsequently more accurate measurement.

The more distinct shear zones trend the same as the banding in the meta-sediments, slightly east of north. They are cut by narrow, flat-dipping shear zones that frequently offset the steeply dipping ones. Both zones appear to pinch and swell, as in the Ajax no. 4 tunnel, where some of the workings tend to follow these zones. The "veins" of the Wheeler tunnel are in shear zones, and the country rock between the "veins" is cut by many more.

METAMORPHISM

Regional

Much of the metamorphism has been regional and is characterized by alteration to meta-sediments and meta-igneous rocks. There has been recrystallization, and it is suggested that silica frequently was rejected from certain recrystallizing masses causing others to be silicified and giving rise to some of the quartz stringers. Development of pyrite cubes in the country rock of

Contact Metamorphism

No evidence of contact-metamorphism was noted*.

*The inclusions or segregations seen along the lower part of the Ajax road may be an exception.

Hydrothermal Metamorphism

Much of the regional metamorphism may have been of the hydrothermal type. The type of mineralization corresponds more closely to Lindgren's 4/ ascending hot solutions with deposition at intermediate depths, as explained under ore deposits.

WEATHERING

There is noteworthy depth of weathering. The Ajax road cuts along one of the hillsides, and although slopes measure 30° - 40°, there is as much as 20-30 feet of 'soil'. Near the 2300 foot elevation a light-colored, medium-grained rock is weathered to clay, much like the weathered tuffs of the Willamette Valley. Inside the Ajax no. 4 tunnel, the surface of the wall rock is considerably altered by weathering to a depth of at least 12 inches. As there is between 100-200 feet of back, it is presumed that most of this weathering has taken place since the adit was opened.

ORE DEPOSITS

GENERAL

Diller (pp. 23-25) 1/ discusses the generalized ore deposition for southwestern Oregon as follows:

"The diverse stresses and consequent earth movements involved in the development of the Klamath Mountains have resulted in widespread crushing and shearing of the rocks, but the fissuring was general instead of being concentrated in narrow belts. The final veining of the rocks and the accompanying ore deposition in general formed many small though commonly rich ore bodies instead of a few larger ones.....The gold-bearing quartz is widely distributed and occurs in small veins, veinlets, and brecciated zones in several kinds of rock. Most of the mines and prospects are situated in the greenstones, but some lie in the granodiorites, some in metmorphosed sediments, and a few prospects in peridotites or their decomposition product, serpentine.....A striking feature of many of the gold-bearing veins is that they are found in proximity to serpentine".

"The ores are found in several relationships in these rocks. In some places they occur in greenstones at considerable distances from other kinds of rock; in others they are in the greenstones but at the contact with or near to granodiorites and related rocks. Some veins are parallel to the schistosity in the greenstones. Again, some veinlets occur in both greenstones and sediments, and in such places it is not unusual to find rich ores near the contact of these rocks and closely related to dikes which cut them. This relationship of the rich ore to dikes is also shown where the veinlets lie in the sediments only."

"The veins and veinlets run in all directions. However, a comparison of the more persistent of them showed that more lie in an east-west direction than in a north-south direction. The dips of the veins vary greatly; most of them have fairly high dips, but some are nearly flat and some are vertical..... Such veins (wide ones of more than 10 feet) are either separated into several parts by "horses" or there is a decided brecciation of their materials."

"The vein filling consists mainly of quartz, which is usually of a milky-white color. Many of the veins contain quartz crystals with perfect outlines, indicating that the deposition took place in open fissures. Calcite is commonly found with the quartz,.....the sulphides rarely exceed three percent of the ores."

"A study of the fillings of the veins in different kinds of rock suggests that the nature of the country rock has not influenced the contents of the fissures to any appreciable extent. The gold is present as free gold in the quartz, and is also associated with the sulphides and tellurides, some of the concentrates being rich.....Little gold has been found in the country rocks adjacent to the veins.....The lower limit of the zone of oxidation is in general less than 100 feet below the surface, but in places it exceeds 200 feet."

There is some confusion in the local use of the word "veins" by miners at the Hercules property. "Veins" is used to indicate either the entire shear zone with its schistose rock and quartz seams, or it may refer to the quartz seam that carries gold. Its use, herein, will be restricted to the conventional use of the word.

As exposed in the Wheeler tunnel, the California tunnel, and the Ajax no. 4 tunnel, the veins are found in shear zones. These zones contain quartz stringers and lenses that tend to follow the planes of schistosity. The only difference that could be noted between most of the veins and their attendant sheared country rock and the ordinary shear zones is that the veins are reported to carry gold.

OUTCROPS

Considerable oral data were secured about outcrops of quartz stringers, and ore-veins on the surface, but none could be found, in the time available.

There is a gossan deposit on the Ajax road at the point marked gossan on the map. It covers an area of about 150 square yards on a 30° slope, and has the appearance of a typical gossan material. Considerable prospecting has been done on this gossan, but assays of samples from the gossan show no gold. 3/

3/ McCormick, B. Ford, personal communication, January 10, 1940

Quartz outcrops are to be found in a number of places. These stand above the ground as resistent masses and many of them have been sampled by McCormick who reports that none of them carry gold enough to justify calling them veins.

FORM

The ore is found in quartz stringers and veins between planes of schistosity in shear zones. Width varies from paper-thin to three feet, according toreports; the widest vein seen was the one-foot California vein in the California tunnel. The veins are irregular in width, they pinch and swell within the shear zone, and may produce bunches, or "augen" of quartz the size of a football. Such veins may tend to produce a pocket and make prediction of ore shoots difficult.

Many instances were found where thin bands of schist were rolled into the quartz, indicating movement after the quartz was in place. Some of the quartz stringers are cut off by minor cross-faults with displacement measured in inches.

ATTITUDE

Surface outcrops give the impression that the shear zones have a general trend that is slightly east of north, and high-angle dips of 60° to 80° to the east or west. In general, shear zones dip to the east on the east side of the area, and dip to the west on the west side.

Dips and strikes of shear zones that are called veins in the Wheeler tunnel are as follows:

No. of Vein	Distance from Portal	Dip	Strike	
1	2180	60° S. 60° E.	N. 30° E.	
2	2555	70° N. 35° W.	N. 55° E.	
3	2800	70° S. 80° W.	N. 10° W.	
4	3223	75° S. 75° E.	N. 15° E.	
5.	4035	65° S. 70° E.	N. 20° E.	
6	4370	80° S. 60° E.	N. 30° E.	
7	4680	70° N. 75° W.	N. 15° E.	
8.	4760	85° N. 88° W.	N. 02° W.	Alleged 6% copper
9	4950	65° N. 65° W.	N. 25° E.	
10	5130	75° N. 40° W.	S. 50° W.	
11	5250	65° N. 42° E.	S. 48° E.	water-bearing vein
12	6478	25° S. 72° E.	S. 18° W.	
13	6662	58° N. 60° W.	S. 30° W.	"California" vein.

DISTRIBUTION OF MINERALS

Quartz, calcite, and pyrite, with some gold, make up the ore body. Quartz is most abundant, occurring in the planes of schistosity, and in irregular bunches in the schist. Calcite is not as abundant as quartz; its occurrence is similar, and it too, was seem to be barren of pyrite. Pyrite is abundant in the sheared country rock adjacent to the quartz or calcite veins. Pyrite cubes were also found scattered throughout certain portions of the massive country rock. The pyrite carries little or no gold. 3/. Chalcopyrite is

3/ McCormick, D. Ford, Personnal communication, January 10, 1940

reported, particularly in the no. 8 vein where the ore was supposed to assay six percent copper. Chalcopyrite minerals were not identified during the survey.

The ore is considered to be gold, and as such, no distribution of ore minerals was noted. No free gold could be detected, and no reliable clues as to gold distribution in quartz could be gotten from assays.

Pyrite is common in shear zones, but with only one exception, the pyrite is found in the sheared greenstones. It occurs as small cubes, ranging in size from 1/16 inch to 1/4 inch. Each crystal is a distinct unit, - that is, the crystals are not bunched or grouped. The exception is found at the west side of vein no. 13, on the west wall of the north drift.

Here, pyrite is bunched in the shear zone to form what might be called "massive sulphides". There is no great quantity of it, but it may be an indication of improvement in ore deposition conditions. Pyrite cubes, and small spots of more massive pyrite, are found in the quartz itself, - the first indication of sulphides in the quartz.

Pyrite, therefore, is found in the sheared country rock as isolated, small cubes. Pyrite in quartz was found at vein no. 13 only; elsewhere, pyrite was not found in quartz. Massive pyrite, in small bunches, was found only at vein no. 13. Chalcopyrite has been reported but was not identified.

GENESIS

Diller (pp. 23-25) 1/, discusses the ore deposits for the Galice-Kerby area, and such factors as; (1) the intricate network of stringers or decided brecciation; (2) milky-white quartz with crystals having perfect outlines, among other things, indicates deposition in open fissures; (3) no contact metamorphism or replacement of wall rock; (4) and little gold being found in the country rocks; [illegible] [illegible].

The conclusion is reached that these veins are the type that are formed at intermediate depths, by ascending thermal solutions that are connected with igneous intrusions. This type of gold deposit is characteristic of the gold-quartz veins of the Sierra Nevada range. (Lindgren, pp. 565-576) 4/

It has been noted that the shear zones contain quartz stringers between planes of schistosity, with enlargements in the size of the quartz stringers at various points; that the quartz is milky-white in color and tends to be vuggy with milky-white crystals in the cavities; there has been a noteworthy absence of contact metamorpphism and alteration of the country rock; there is some development of calcite. All these factors tend to support the conclusion as to the type of ore deposit.

The great abundance of quartz is a puzzling problem. Consideration was

given to its having been rejected during recrystallization of the meta-sediments and meta-igneous rocks, and there is some evidence to support this contention. Lindgren (p. 575) 4/ states a situation for the Sierra Nevada type veins that seems to apply to the Hercules area; "no hypothesis of lateral secretion can account for the great masses of quartz, nor the occurrence of the veins in the most diverse rocks. For an explanation of their origin we are compelled to look to the great batholithic intrusion, or rather to the many minor intrusions on the flank of the range". This explanation can be accepted as a working hypothesis for the Hercules area, at the present time.

PAY-SHOOTS

Little can be said about pay-shoots, or the probability of encountering pay-shoots, as there is no point at which a pay-shoot could be identified with any degree of certainty. The extremely lenticular nature of the quartz veins, - and lenticularity on such a small scale, - makes it difficult to predict larger lentils. Such "should" occur, and are reported to occur, but none were seen. Evidence of minor faulting is found in the Wheeler tunnel, and it is probable that minor faulting could displace a vein, such as the California vein, a considerable amount in the 1000 feet between the surface and the Wheeler tunnel. Persistence of a uniform dip, at depths, under these conditions, is a moot question.

The presence, or absence of pay-shoots therefore cannot be predicted at this time, but the information at hand, at this date, appears to be unfavorable rather than favorable to the existence of pay-shoots on this property. It is sufficiently unfavorable to cast doubt on the advisability of extensive development on the no. 13 vein, without other, additional, and at present nonexistent, data.

SUMMARY

1. Mt. Reuben area is underlain by Galice? formation meta-sediments on the east and greenstones on the west. Contact zones could not be definitely

determined, as the greenstones must have intruded the sediments, or were formed contemporaneously with them.

2. No visible evidence of contact metamorphism could be found, unless the light colored spots in fine-grained dark rock along the Ajax road and in the Wheeler tunnel represent this phase.

3. Both series are cut by shear zones that trend slightly east of north and dip at high angles. In the eastern part of the area the generalized dip is east, an and in the western part it is west.

4. A second set of narrow shear zones cut the north-south steeply dipping zones and frequently offset them by minor distances.

5. The shear zones pinch and swell on a minor scale and no evidence was seen to prove the existence of a large swell that might justify large scale mining operations.

6. Strike of any one shear zone varies considerably.

7. No pyrite was found in the quartz with one exception (#13). Small pyrite cubes are abundant in the sheared country rock and to a more limited extent in the sounder country rock. The pyrite carries no gold.

8. Conditions of ore deposition point toward ascending thermal solutions acting at intermediate depths.

9. All quartz outcrops and veins that were visited, carry no gold, or only minor amounts according to samples taken by McCormick and assayed by Krumm.

10. No indication of a pay-shoot, or of pay-shoot development was seen.

CONCLUSIONS

1. Geologic conditions were such that gold could have been deposited.

2. The small size of the quartz stringers and veins, the tendency to pinch and swell within short distances, the general barrenness, and the almost complete absence of pyrite, are not favorable indications of the presence of an ore body.

3. Erratic dip and strike coupled with minor faulting makes the projection of any vein to greater depths, difficult to almost impossible.

4. In spite of the many openings made into the subsurface, no pay-shoots were seen. This factor, plus those mentioned in no. 2 and no. 3, make it ~~6~~ unwise to predict pay-shoots in places that can be reached only by extensive development.

5. The data, at present, are sufficiently unfavorable to cast doubt on the advisability of extensive development on no. 13 vein without additional data.

6. No way of correlating the California vein with no. 13 vein could be found.

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3. McCormick, D. Ford, personnal communication.

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Ray C. Treasher, Field Geologist,
State Department of Geology and Mineral Industries.

January 30, 1940

HERCULES MINING COMPANY

Josephine County-Galice District
Hercules Mining Company

January 16, 1940
Foggy till 11 A.M.;
Clear

Ajax Road

Portal of Wheeler tunnel, elevation 1179'; spec. #1, appears to be a basalt or fine-grained metasediment with a minor amount of alteration. N.E. back toward Reuben Creek is similar material but more sheared. The tunnel above, on the new road, appears to be in a sheared "greenstone" similar to #1, and a few cubes of pyrite were found in the "greenstone". This same rock, with varying degrees of alteration and schistosity to elevation 1525', to the gossan. The gossan is stuck on a very steep hillside, and is limited in area. It reportedly carries no gold; - spec. #2, and is exposed to an elevation of 1600'.

At elevation 1675', quartzose material which may be altered quartzite or resilicified greenstone. Spec. #3. Road cuts are covered with surface slump to an elevation of 1790' where a Hercules Mining Company sample B_1 was taken from silicified sheared rock. Shear planes dip 50° S. 65° E. There are a few small quartz stringers.

At about elevation 1900' is a fine-grained rock like basalt with inclusions or segregations of a light-colored rock that "looks" like diorite. Spec. #5 shows these "segregations"; that they are irregular in shape, rounded to angular, completely isolating portions of the fine-grained rock. The granular rock comes into prominence until the "inclusions" look like small xenolithe mostly elongated in a general vertical direction. The granular rock, under the lens, has no definite crystal texture, - it appears more like an altered or re-silicified rock. To the eye, it appears to be a normal, medium-grained rock with quartz. Suggestions of Goodspeed's theory. Spec. #4 at elevation 1950' is of granular rock, very tough, no definite line of fracture.

Josephine County-Galice District
Hercules Mining Company

January 16, 1940

At elevation 2150' there is a narrow belt of fine-grained material like black shale, the parting planes dip 75° N. 25° W. On the north is a fine-grained rock in which are small particles of a greenish rock. Looks like a fine-grained agglomerate. (Later: this may be like the porphyritic dike rock along Rogue River). On the south is the granular rock, the contact is sharp, little or no evidence of contact metamorphism. The granular rock continues for some distance, with small quartz seams cutting in many directions. Some are paper thin, occupying joint planes;

others are thicker, up to 4". No evidence of sulfides. The granular rock gives way to the fine-grained rock with "segregations" or "inclusions", then the fine-grained rock itself. Near the last sharp turn as the road heads westward, the rock is greatly weathered, reduced to clay. Some is reddish, some red-white; - it is apparently the light-colored granular rock that has altered to clay and stained with iron.

ROGUE RIVER ROAD WEST OF BRIDGE AT GRAVES CREEK

Fine-grained sediments, highly sheared, make up most of the rock over this distance. At the bridge, it is a fine-grained quartzite, its appearance suggests that the "basalt" along the Ajax road is really sediment. Some of this rock contains small cavities, like stretched amygdules, but later finds indicate that these are solution cavities, originally occupied by a soft, dark-colored mineral. Small quartz seams cut the rock principally parallel to bedding or schistosity but also in many x-fractures. In some places the vertical seams are cut off by the flat-angle joints, indicating a sequence of movement.

Some of the sediment is so fine-grained that it is more like a chert. East of Ajax Creek, the dip of the schistosity is 75° S. 82° E. West of Ajax Creek much of the rock is banded, and the dip is 80° S. 57° E. At 2550' from the bridge is a porphyritic rock with ½" crystals with cleavage. This is probably an igneous rock. Spec. #6. At 4100' is a light-colored rock with 1/8" grains or crystals of quartz or silica. It is difficult to say whether this is igneous or sedimentary.

January 17th, 1940
Clear

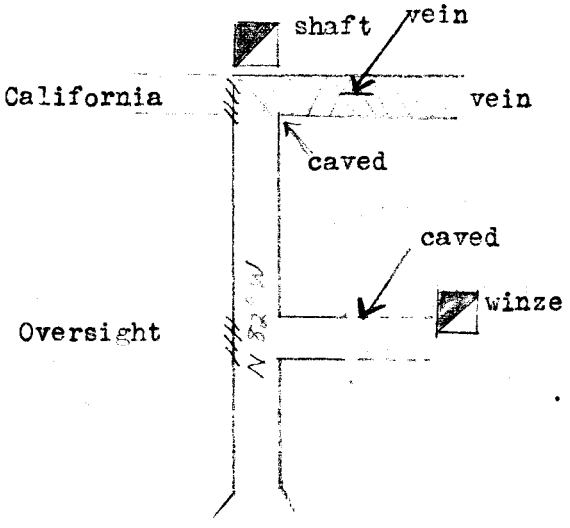
ROAD TO CALIFORNIA SHAFT, TRAIL TO AJAX AND CAMP

Up the road to Gold Bug mill, where trail was taken in a general E-NE direction. The discovery cut of the Majority claim, dated 1935, by Marie Romey was found; quartz with a spotted rock and a cherty rock as country. Two cuts, not over 25' each.

On up the hill to the Molly Hill shafts. Two shafts both caved or full of water. The dump shows a light-colored, fine-grained rock, somewhat cherty and sheared and x-fractured; a "porphyritic" rock, locally called diorite porphyry, and quartz in the schist. Thin seams of schist are included in the quartz and the whole mass is "rolled up" as if movement had taken place contemporaneously or just after quartz emplacement. Spec. #8. The quartz is quite vuggy and distorted, milky crystals are common.

E-NE to California shaft at elevation of 3487'. Shaft caved at the collar. Dump shows quartz like at Molly Hill, and the light-colored cherty rock. The California tunnel, or adit, portal at 3275' (aneroid). A small mill (stripped) that had 2 stamps. Tunnel has 18" of water.

Dump shows rock like at Molly Hill. Pyrite cubes are common in the schist. The Oversight vein is represented in the adit, where x-cut by a 15' shear zone. Quartz seams occupy the schistosity planes and range from 1/8" - 1/2" in width and seem to have no particular direction or orientation. They frequently cut across the schistosity and pinch and swell. Occasionally they widen into "rolls" or augen, the size of a football. A drift to the north is badly caved and cannot be entered for over 15' but there is no evidence that the "vein" widens or that there is a concentration of quartz.



The California drift is badly caved at its intersection with the adit and one can get only a few feet N. of the intersection. A 1' quartz vein is exposed in the back, strikes N. 14° E., dips 73° W. 76° W. North of this it is caved and no information could be gotten, in place. The country rock in the adit is principally "porphyry."

Down the hill to the SE past the center 1/4 sec. cor. sec. 36, and down the ridge to the Ajax road. Somewhere within 100' of the 1/4 corner is the change from "porphyry" on the west to the "quartzite" on the east. The trail passes by innumerable small test pits and trenches, many of them showing small bits of quartz. At one point, a 1' quartz outcrop was not prospected although it is reported that "just over the hill" to the north is a test trench. Still farther east about 300 yards west of Ajax road junction is a schistose quartzite outcrop that dips 70° S. 73° E.

January 18, 1940

AJAX MINE

Trip to Grants Pass, evening of January 17, and back out to Hercules by noon January 18. During P.M. Crum and I went up to the Ajax, over Ajax road. Ajax adit goes straight in, in a general westerly direction about 300' where it begins to branch and gopher hole all over the country to the south. There are two general sets of shear zones, one trending

E-W with a flat dip, and one N-S with a high angle dip. In some places the N-S shears seem to be cut off by the E-W shears. Considerable quartz has been injected along the schistosity of the "veins" in the same manner as on other shear zones. There is no regularity to these quartz seams, and the quartz pinches and swells, and disappears altogether. No "vein" as such could be seen. Some fresh surfaces show few pyrite cubes, always in the schist, never in the quartz. Country rock and shear zones are metamorphosed sediment.

January 19, 1940
Foggy - above freezing

MT. REUBEN ADIT

Vein # 1 - 2180'
2 - 2555'
3 - 2800'
4 - 3223'
5 - 4035'
6 - 4370'
7 - 4680'
8 - 4760' - supposed to carry 6.0% Cu.
9 - 4930'
10 - 5130' - dip 75° N 40° W; strike S. 50° W.
11 - 5250' - water vein, "true fissure vein." Dip 65° N. 42° W; strike S. 48° E.
12 - 6478' - dip 25° S. 72° E; strike S. 18° W.
13 - 6662' - dip 58° N. 60° W; strike S. 30° W.

Distances scaled from blue prints, progress profile, Mt. Reuben tunnel scale 1" = 200'.
Elevation portal 1178.94' (instrument survey)
Elevation face 1210' (scaled)
Grade of tunnel 0.50%

Face - 7344' (measured)

Drill hole +534' to #15 vein, +59' to #16 (memory A. Walker)

Feet	Paces	
90	20	1' narrow shear zone dips 55° S. 65° E.
155	35	3' ill defined shear zone, a little quartz 65° S. 70° E.
200	44	Shear zone dip 80° S. 55° E. At 43-45 paces there are a number of quartz "auger" football size. Beginning at 46 paces a flat lying, east dipping, 1" quartz seam. This seam and others follow to about 100 paces - some quartz and an eastward dip of not over 10°.
470	104	Shear zone - quartz. Dip 40° S. 65° W. Some nearly horizontal seams for about 30 paces.
685	152	Well defined fracture dips 10° N. 60° W. No quartz on this fracture.
720	170	Shear zone dip 35° S. 40° E. Some quartz.
845	187	Fractures a bit more widely spaced than in shear zones but well defined, plates 1" thick dip 60° N. 65° E. over distance of 10 paces. At 197 paces on shear zone same as above.

Feet	Paces	
960	214	Shear zone with high angle S.E. dip.
1000	222	Shear zone - quartz dip 55° S. 40° E. well defined about 20' wide.
1295	264	Fault that has a dip 20° S. 65° E. Just underneath the fault is a narrow band of light-colored chert.
1320	276	Shear zone with quartz, dip 55° S. 25° E. Well developed. Considerable chloritization and some of zone is soft enough to be dug out with pocket knife. Quartz is bunchy in spots, stringy and quite contorted in others.
	292	Another semi-shear zone trending like above; rock is cherty and banded
	305	Compresser receiver tank.
1940	430	Banded cherty rock dipping 80° S. 15° E. followed by shear zones that dip 60° S. 25° E. at 435 paces.
	511	#0 drift.
	530 to 560	- Cherty rock.
	546	Receiver tank
	590	#2.
		#2 vein dips 70° N. 35° W. chloritized shear zone with bunchy quartz and stringers on schistosity. Greenstone quartz seam
2600		"Segregations" begin to appear in the "greenstone"
2700		Wall rock - S. wall begins to have porphyroblasts which may be corroded phenocrysts,, indicating an igneous rock, or it may be a recrystalized sedimentary
2800		#3 dips 70° S. 80° W. well developed shear zone with some quartz - no quartz vein. Scattered pyrite in schist.
2900		West wall of #3 appears to be a porphyroid rock that contains segregations or inclusions. At 2900' the rock has rounded to angular "zenoliths", 1 1/2" maximum of metamorphic rock.
3060'		Calcite vein 4" wide dipping 25° S. 15° W. faulted 6"
3223		#4 vein - shearing not well developed, some quartz up to 1" wide, offset. There is banding that crosses schistosity at an angle.
		#9 A Well fractured, very schistose - also cross fractured. Quartz seam 8" wide at east side of zone.

Strike S. 70° W. Dip 60° SE or dip 60° S. 30° E. new tunnel above portal of Wheeler tunnel about 60' long, of which the last 40' is on the strike of the vein.

January 20, 1940

Dike Adit Above Camp

Adit enters at S. 25° W. for three sets of timbers and a distance of 20', then follows strike of shear zone, S. 70° W. Shear zone dips 60° S.

30° E. and strikes S. 70° W. The face is 60' from portal. Shear zone is in "greenstone", pyritized with pyrite cubes to a small extent. The quartz is bunchy, seldom larger than a football, and the shear zone has the general appearance of other shear zones in the vicinity. Assays by Dick Krumm indicate no gold. Work was discontinued at midnight, January 19. Elevation of portal 1270' (aneroid).

Wheeler tunnel shear zones - by Dick Krumm, 1/20/40.

#1 - dip 60° S. 60° E; strike N. 30° E.
#4 - dip 75° S. 75° E; strike N. 15° E.
#5 - dip 65° S. 70° E; strike N. 20° E.
#6 - dip 80° S. 60° E; strike N. 30° E.
#7 - dip 70° N. 75° W; strike N. 15° E.
#8 - dip 85° S. 88° W; strike N. 02° W.
#9 - dip 65° N. 65° W; strike N. 25° E. (4930')

DD log of horizontal drill hole in face of Wheeler Tunnel in 1929 - (Ford McCormick's report)

Sent in by Harold Wolfe

60 ft.

85 ft. - hit water-course

Porphry

172 ft.

Porphry with Diorite

180 ft.

Porphry (broken)

338 ft.

Quartz Seams

341 ft.

Porphry (broken)

358 ft.

Quartz Seams

360 ft.

very soft (too soft to core-sludge & very dark color)

365 ft. Porphry

379 ft.

Streaks of quartz

380 ft.

Talc seam 5 inches wide at 380 ft.

381 ft.

Porphry with quartz stringers

384 ft.

talc seams from 384' 6" to 385 ft. and 387' to 387' 6"

388 ft.

broken dark rock

390 ft.

Porphry with quartz seams (talc seam from 390'6"to 391'

397 ft.

Diorite (talc seam) 403 ft. to 403' 4"

419 ft.

Quartz seam

420 ft.

Diorite with some quartz

426 ft.

Diorite and porphry

429 ft.

Porphry

433 ft.

Diorite

436 ft.

Porphry

438 ft.

Porphry & Diorite (quartz seams 442 ft. to 444 ft.)

450 ft. - hit more water at 450 ft.

Porphry

452 ft.

Diorite

455 ft.

Porphry

457 ft.

Diorite (Talc seam 457 ft. to 457 ft. 2"

462 ft.

Porphry

464 ft.

Dark talc seam

465 ft.

Porphry with small quartz stringers from 477' to 481'

482 ft.

Diorite (very broken)(red spots in the diorite from 384' to 386')

487 ft.

Grey rock (like porphry)

489 ft.

Talc seam from 491' to 491' 6"
Quartz stringers 491' 6" to 495 ft.
Quartz stringers - 498 ft. 499 ft.
Quartz stringers 508 ft. to 513 ft.
Talc seam - 510 ft. to 510 ft. 6 inches
Quartz seem 516' 6" to 517 ft.

523 ft.

Slate and dark talc.

524 ft.

Hit more water at 533 ft. very soft seam (like talc) from 534 ft. to 537 ft.
Hit more water at 538'.

547 ft. - Quartz stringers from 546 ft. to 546 ft. 6 inches
Large white spots in Porphry from 556 ft. to 562 ft.
Talc seam from 570 ft. to 570 ft. 6 inches.

571 ft.

Diorite with quartz stringers

573 ft.
589 ft.

Dark streaks (looks like slate) in Diorite from 589 ft. to 592 ft. 6 inches

594 ft.

Broken and harder

600 ft.

Hole finished

CONFIDENTIAL

FAY

CALIFORNIA MINE
Hercules Mining Co. lease.

(extract from Grants Pass Bulletin, Fri. Sept. 6, 1940)

TWO MINE SUITS

HIT CHURCHMAN

"A suit for judgement in the amount of $239.78 was filed in circuit court August 29 by Wayne Wheeler against Frances J. Beckman. Beckman was one of the prominent figures in litigation over mining property in Josephine county in June of 1939. He was at one time archbishop of the diocese of Dubuque, Iowa."

"The local suit followed closely a similar suit for $2,500 filed in Medford against the same defendant by A. E. Reames, for attorney's feew."

"Listed in the Wheeler action are amounts for materials allegedly sold, and for wages for work said to have been done at the request of the defendant. W. T. Miller, attorney for Wheeler, said that attachments are sought against any of the defendant's properties in the county. He said that he believed machinery at the Hercules mine is owned by Beckman."

CONFIDENTIAL

The above excerpt has to do with litigation of the Hercules Mining Company, who took over property owned by Wheeler, and "managed" by Gus Walker. From what D. Ford McCormack says, the Hercules Mining Co. is in a bad way, and I gathered that he expects them to fold up before long.

Ray.

HERCULES MINING COMPANY GALICE DISTRICT

The Hercules Mining Company has leased the holdings of the California Mine, owned by E. R. Wheeler, plus the Ajax group in sec. 36, T. ~~34~~ 33 S., R. 8 W., and property in secs. 5, 6, 7, T. 34 S., R. 7 W., and sec. 31, T. 33 S., R. 7 W., on the south side of Graves Creek, known as the Hercules Group. The Hercules Group consists of 15 claims held by location, 160 acres of patented land, and two claims purchased. The Ajax Group consists of 12 claims, in sec. 36, T. 33 S., R. 8 W.

Development: Several drill holes have been made in the Hercules group and 8 bulldozer cuts. A road has been constructed from the camp on Mr. Rueben Creek to the Ajax claims to ~~open~~ make these claims accessible to the general camp scheme.

Equipment: RD7 caterpillar with bulldozer. Blacksmith shop equipped with automatic drill sharpener (Denver-Gardiner), acetylene welding outfit with acetylene generator, electric welder, "cut-up saw" with gas engine power. Compressor house contains an I*R compressor run by Pelton wheels. Two 110 volt D. C. generators; 125 h.p. diesel engine for auxiliary power. Pleton wheel for air fan. Portable I-R compressor that furnishes air for 2 jackhammers. Bucyrus-McCormick well drilling outfit, complete. Three tons of 1¼" drill steel. Fully equipped assay lab. 10,000 feet of track with 16 lb. rails; 10,000 feet air pipe both 10 inch and 11 inch; 10,000 feet of water pipe in the Wheeler tunnel and 9000' of 4" compressor pipe. 600 feet of 6" water pipe from a 10 foot square reservoir; 800 feet of branch 2 inch water pipes for camp distribution. 1600 feet of 2 inch water pipe at Camp #2; 700' of 15'-30" penstock pipe; 4800 feet of flume; drag saw and other tools. A 3500 gallon steel storage tank for diesel oil; two 1000 gallon tanks with pumps for gasoline. Buildings consist of 4 bunk houses, mess hall, administration building, assay office, 40' x 90' garage-bunk house; compressor house, blacksmith shop, at main camp. At

Camp no. 2 there are 3 cottges, garage and machinery house.

Geology: As explained under California Mine.

The Hercules Group is underlain with shale (Galice formation?), black, slaty cleavage, cut by numerous small quartz stringers. This area is presumabply on an extension of the "Big Yank" lode on which the Almeda property is located.

Informant: Ray C. Treasher & F. D. McCormick, Jan. 1940.

CALIFORNIA MINE (gold) GALICE DISTRICT

Owner: E. R. Wheeler, Grants Pass, Oregon.

Location: secs. 25, 26, 30 T. 33 S., R. 8 W., and sec. 30, T. 33 S., R. 7 W. on Mt. Reuben Creek, tributary to Graves Creek.

Area: Seven lode claims held by location and one patented claim. Total area 160 acres. Mt. Reuben tunnel site 3000 feet x 3000 feet, 210 acres.

History: Originally known as the Mt. Reuben Mining Company of which Parks & Swartley report; "This company was organized in January, 1916. It has the "anna", "California", "Virginia", "Albany," fraction of the "Oversight", "Arthur C.", and "Utica" claims located on a spur of Mt. Reuben in Josephine county. Some tunneling, sinking shaft and stoping has been done."

Some development was done on the California claim about 1920. Mr. Wheeler purchased the property from the Mt. Reuben Mining Company. From Jan. 1, 1922 to April 11, 1929, Mr. Wheeler constructed the longest tunnel in southwestern Oregon. The property was idle until Nov. 1938 when Mr. Mr. Phillip Suetter leased it and started reconditioning it due to the years of idleness. A Crew of 32 men were employed. The Hercules Mining Company took over Suetter's holdings and now hold the California Group as part of their property, under lease.

Development: Near the top of the mountain there is a 630 foot adit which trends N. 83° W. A distance of 550 feet in the vein was tapped and there is a shaft from this point to the surface, a vertical distance of 240 feet. A short drift was constructed on the Oversight vein. Some drifting and stoping was done on the California vein. A small mill with two stamps was operated for a short time. The "California" workings are now being opened by the Hercules Mining Company.

The long crosscut tunnel, now known as the Wheeler tunnel trends N. 87° W., 7364 feet with a core drill of 609 feet, making a total

of 7973 feet. The maximum depth acquired by the tunnel is 2325 feet. Very little timbering is required. There are several drifts on the numerous veins, the principal one being no. 13.

Geology: The Wheeler tunnel cuts thru a series of rocks that probably should be classed as greenstone. Phases of the "greenstone" appear to be altered sediments that have been silicified, so that in some cases they appear to be quartzites. Other phases of the greenstone have white spots, or porphyroblasts whcih make the rock appear like a porphyry. There are a few basic igneous dikes.

Shear zones have cut thru the greenstones, the zones trending slightly east of north and varying in width from a few inches to several feet. These shear zones contain quartz stringers, and following the introduction of quartz, there must have been a second epoch of shearing. Flat lying, S.E. dipping faults have displaced the shear zones to some extent.

Metallization has been effected in the shear zones so that the sheared greenstones contain sprinklings of pyrite cubes. No. 13 "vein" is the only one in which metallization of quartz was noted.

The mechanics of metallization apparently follow Lindgren's diagnosis of gold quartz veins of the Sierra Nevadas.

Informant: Ray C. Treasher, Jan. 1940.

Dist 12 miles North of Gaberville

Guaranty Trust Co 1/3

Calif. E. R. Wheeler Grants Pass

by Rosalie S. Whelan. Vol 38 pp 38

Calif Virginia, Utica, Arthur C, Anna & Albany Castle Lode. & new year placer. Mt Reuben Tunnel site. tunnel runs.

Handbook pp 158

Calif tunnel N82°44'W 630 ft. taps vein at 55 ft. and is connected shaft to surface 240 ft. Long tunnel S 87°15' W. 736 ft. cor drill 609 ft. cuts 15 veins. Jan 1 1932 to April 11 1929. on 1/2 of 1° grade. general strike of vein N 10 to 20 East & dip at a steep angle to the west.

Overnight - 270' -

X-Cut 125' in about 45' long
Cuts vein. Winze
in 50 ft about 18 ft
deep.

Ore chute 40 ft. long & 3 ft wide
average $9-10 at old price.

Shaft down 112 - ore chute 40-50' long
down 112 ft. level. average $50

STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

702 WOODLARK BUILDING
PORTLAND 5, OREGON

May 17, 1945

Sample submitted by Elton Youngberg

Sample received on May 7, 1945

Analysis requested Gold assay

Analysis by:

L. L. Hougland

Assayer

Lab. No.	Sample Marked	Results of Analysis		Remarks
P-3584	FG-27 #1	Gold (Au)	0.01 oz./ton	- - - - - - - - - - - - - - -
P-3585	FG-27 #2	Gold (Au)	0.03 oz./ton	- - - - - - - - - - - - - - -
* * *	* * * * *	* * * * * * * * * * * * * * * *		* * * * * * * * * * * * *

The Department did not participate in the taking of this sample and assumes responsibility only for the analytical results.

State Department of Geology and Mineral Industries

702 Woodlark Building
Portland, Oregon

HERCULES GROUP

By Elton A. Youngberg

May 18, 1945
Galice District
Josephine County

Mr. A. Walker states that this property was sampled by the Braden Copper Company. Some 1800 samples were supposedly taken and are said to have averaged in excess of $5 per ton.

Mr. Walker also has made claims of a considerable tonnage of barite existing on the property. He states he has a contract for 125,000 tons of barite and expects to start shipping by July 1. I visited the property especially to see this occurrence of barite. None could be found where he indicated it occurred and there is no geologic evidence to lead one to expect a deposit to occur in the vicinity. I am afraid Mr. Walker has been pulling mine and some other people's leg for some motive that is not evident at the moment. I am now also inclined to believe his statement concerning gold values are alos pure bunk.

*** *** *** *** *** *** *** *** *** *** *** ***

CRIB MINERAL RESOURCES FILE 12

RECORD IDENTIFICATION
- RECORD NO..... M061864
- RECORD TYPE..... K1M
- COUNTRY/ORGANIZATION. USGS
- DEPOSIT NO..... ODGMI 100-70
- MAP CODE NO. OF REC..

REPORTER
- NAME..... SMITH, ROSCOE M.
- DATE..... 78 08
- UPDATED..... 81 02
- BY..... FERNS, MARK L. (BROOKS, HOWARD C.)>

NAME AND LOCATION
- DEPOSIT NAME..... HERCULES GROUP
- MINING DISTRICT/AREA/SUBDIST. GALICE
- COUNTRY CODE..... US
- COUNTRY NAME: UNITED STATES
- STATE CODE..... OR
- STATE NAME: OREGON
- COUNTY..... JOSEPHINE
- DRAINAGE AREA..... 17100310 PACIFIC NORTHWEST
- PHYSIOGRAPHIC PROV..... 13 KLAMATH MOUNTAINS
- LAND CLASSIFICATION..... 41

QUAD SCALE	QUAD NO OR NAME
1: 62500	GALICE

LATITUDE	LONGITUDE
42-38-57N	123-33-45W

UTM NORTHING	UTM EASTING	UTM ZONE NO
4721800.0	453900.	+10

- TWP..... 34S
- RANGE.... 07W
- SECTION.. 06
- MERIDIAN. WB & M

COMMODITY INFORMATION
- COMMODITIES PRESENT..... AU

EXPLORATION AND DEVELOPMENT
STATUS OF EXPLOR. OR DEV. 1

DESCRIPTION OF DEPOSIT

DEPOSIT TYPES:
LODE
FORM/SHAPE OF DEPOSIT: STRINGERS

SIZE/DIRECTIONAL DATA
SIZE OF DEPOSIT..... SMALL

DESCRIPTION OF WORKINGS
SURFACE

COMMENTS(DESCRIP. OF WORKINGS):
DOZER CUTS, FOUR CD HOLES

PRODUCTION
NO PRODUCTION

23	SAMPLE	- 1945	0.03 AU (1.5 FT)

GEOLOGY AND MINERALOGY

AGE OF HOST ROCKS..... JUR
HOST ROCK TYPES..... BLACK SHALE SLATE

PERTINENT MINERALOGY..... QUARTZ

LOCAL GEOLOGY
NAMES/AGE OF FORMATIONS,UNITS,OR ROCK TYPES
1) NAME: GALICE
AGE: JUR

GENERAL REFERENCES
1) RAMP, L. AND PETERSON, N.V., 1979, GEOLOGY AND MINERAL RESOURCES OF JOSEPHINE COUNTY, OREGON; ODGMI BULL. 100, 45P