

Southern R.



Sample

	Zn	As	Pb
1 = 10' =	0.20%	Tr	Tr
2 = 10' =	0.23	Tr	Tr
3 = 8' =	0.47	Tr	Tr
4 = 7' =	0.23	0.01	Tr
5 = 12' =	0.15	Tr	Tr
6 = 5' =	0.27	Tr	Tr

123

56

Zinc Mine 430/41

No. 5 Tunnel

1" = 50'

F. W. L.

4/30/41

STATE DEPARTMENT OF GEOLOGY AND
MINERAL INDUSTRIES

STATE ASSAY LABORATORY
402 E. 1 STREET
GRANTS PASS, OREGON

RECEIVED
MAY 11 1941

STATE DEPARTMENT OF GEOLOGY
& MINERAL INDUSTRIES

May 6, 1941

Mr. Ray C. Treasher, Field Geologist
State Department of Geology and
Mineral Industries
State Assay Laboratory
Grants Pass, Oregon

Following are the results of assays made on samples
from the Plat-Norkes Mine:

<u>Sample number</u>	<u>Office number</u>	<u>Zinc percent</u>	<u>Gold oz./ton</u>	<u>Silver oz./ton</u>
1	BG-388	0.20	Trace	Trace
2	BG-390	0.23	Trace	Trace
3	BG-391	0.47	Trace	Trace
4	BG-392	0.23	0.01	Trace
5	BG-393	0.15	Trace	Trace
6	BG-394	0.27	Trace	Trace

...*Albert C. Lewis*...
Analyst

al
cc:Nixon
Walling

NOTES ON PLAT NORKEA MINE (Zinc Mine)

April 30, 1941

Object of the visit was to investigate zinc possibilities at the property.

Results: No. 5 tunnel seemed to be the main accessible tunnel. Nobody at the mine seemed to know much about any zinc showing. Tunnel was driven in andesitic breccia. Sparce disseminated sulphides were seen. Some massive sulphides, chiefly pyrite, had been extracted and stored on the dump, but none was seen in the tunnel. The accompanying sketch map was made with a Brunton and by pacing. Samples were taken as indicated.

A man employed at the mine acted as guide to show other openings where he thought zinc occurred. Two tunnels were inspected. Some pyrite was seen, but no sphalerite.

Samples in No. 5 tunnel were cut with moils.

There were 5 or 6 employees at the mine, but apparently were not working.

Name Zinc Mine

Tiller area

Ownership ?

Location Sec 23, T. 29S, R. 1W, Douglas County, on the South Umpqua River between Straight and Boulder Creeks. It is about 13 mi. east of the bridge at Tiller

Area ?

History ?

Topography

Geology The country rock is volcanic breccia. The vein, striking north westerly, outcrops between two angular diorite dikes about 200 feet apart. These dikes are each about 150 feet wide and are exposed on the north bank of the river. Vein matter on ^{dumps} from tunnels on both sides of the river is altered volcanic breccia containing disseminated pyrite and sphalerite associated with pyrite and galena in irregular lenses. Calcite and marcasite occur in veins. There is little if any silicification.

Development amount not recorded

Source of Information USGS Bull 893.
p. 130

Sept. 17, 1940.

SEP 20 1940

See C.F.

PLAT-NORKEA MINING GROUP STATE GEOLOGY & MINERAL INDS. TILLER-DREW DISTRICT

Owners: Plat-Norkea Mining Group, a partnership of about 26 men.

Location: secs. 13 & 24, T. 29 S., R. 1 W., on South Umpqua River,
13 miles east of Tiller, at the mouth of Zinc Creek.

Area: About 124 claims held by location.

History: The following is quoted from a memo sheet supplied by

O. E. Walling:

"A party by the name of Tayler discovered the strike in 1910, - and parties by the name of O. F. Tainer and Clark formed a stock Co. They dissolved about 1916, and O. F. Tainer relocated this property and held it then until 1926 or 1927. Ore was shipped by packer to Riddle, the closest railroad point, by packhouse. O. F. Tainer let this claim to delinquent for a period of seven years, and it was re-located by its present owners".

Present locations are dated about 1933 at Roseburg, Oregon. The property is known locally as the Old Zinc property.

Development: Upon information given by O. E. Walling, there are a total of 17 tunnels: # 1 is 200 ft. long, at river level; #2, #3, #4, are not over 50 ft. long each, and about 100 feet above river level; #5 is 400 ft. long and is about 50 ft. above the river; #6 is 107 ft. long, and is 2100 ft. above the river; #7 is 691 ft. long, and is 2460 ft. above the river; #8 is 307 ft. long and is 40 ft. above the river; #9 is 170 ft. long about 900 ft. above the river; #10 - #17 range in length between 50 ft and 75 ft, and are scattered over the property. The only ore mined was a 270 ton test, taken from the roof of #5 adit and milled in July & August, 1939 at Bremerton, Washington. A 36 ton sample was taken from #1. It was reported that #5 averaged \$17 a ton in gold; #1 averaged \$46 a ton across a 14 ft. face.

#5 adit has two cross-cuts, one about 28'ft. long, in 350 ft. from the portal, and one slightly long, in 317 ft. from the portal.

Geology: The area appears to be one of volcanics, flow lavas, and tuffs that have been fractured, and altered along the fracture zones. Road cuts expose a fine-grained, light gray lava, somewhat silicified, that contains specks, and tiny stringers of sulfides. This lava grades into a dense, very fine-grained rock that looks almost like a slate; and into a coarse grained rock like a diorite. More detailed work is necessary on these rocks before they can be classified further.

The "principal" shear zone, the one on which #5 adit was driven is also exposed on the north side of the river. Here the rock seems to be a silicified tuff that has been fractured almost vertically. Rock in the fracture zone has been altered to a clay-like condition, and it is in this altered zone that the more massive sulfides occur. Cinnabar is reported from this zone, but no specimens were seen.

In adit #5, the tuff gives the general impression of a flow rock, from the way it fractures, and breaks under the hammer. The tuff has been silicified, and small specks of sulfides are scattered through it. Narrow, hair-like stringers of sulfides cut the tuff. A greater concentration of sulfides, and larger crystals, seem to occur near the fracture planes, but then this may be in error as it was usually the fracture planes that were broken with the hammer.

Throughout the tuff area are stringers, and masses of softened tuff, almost like gouge, and it is considered that these represent planes along which movement took place. Sulfide grains and crystals seem to be larger in these gouge-like zones.

Both cross-cuts in #5, expose this sulfide ore, for a total width of at least 40 feet. Any place, from the portal to the face, a fresh rock surface showed sulfides, and usually a noticeable sulfur

odor accompanied the breaking.

The west wall rock seems to be a gray to slightly greenish lava rock, that is impregnated with some sulfides.

The principal sulfide is pyrite. Some galena grains were seen. The pyrite occurs in small masses or pyritichedrons not over 1/8 inch in diameter. In the harder, silicified tuff, much of the sulfide occurs in small stringers. Near the portal, a greenish stain that looks like copper was reported to be ferrous sulfate. Some sphalerite is reported, but none was seen in the adit. Some specimens in the ore bin showed sphalerite.

The sulfides are reported to carry gold. Minerals recovered are gold, copper, lead, bismuth, zinc, cadmium, and others.

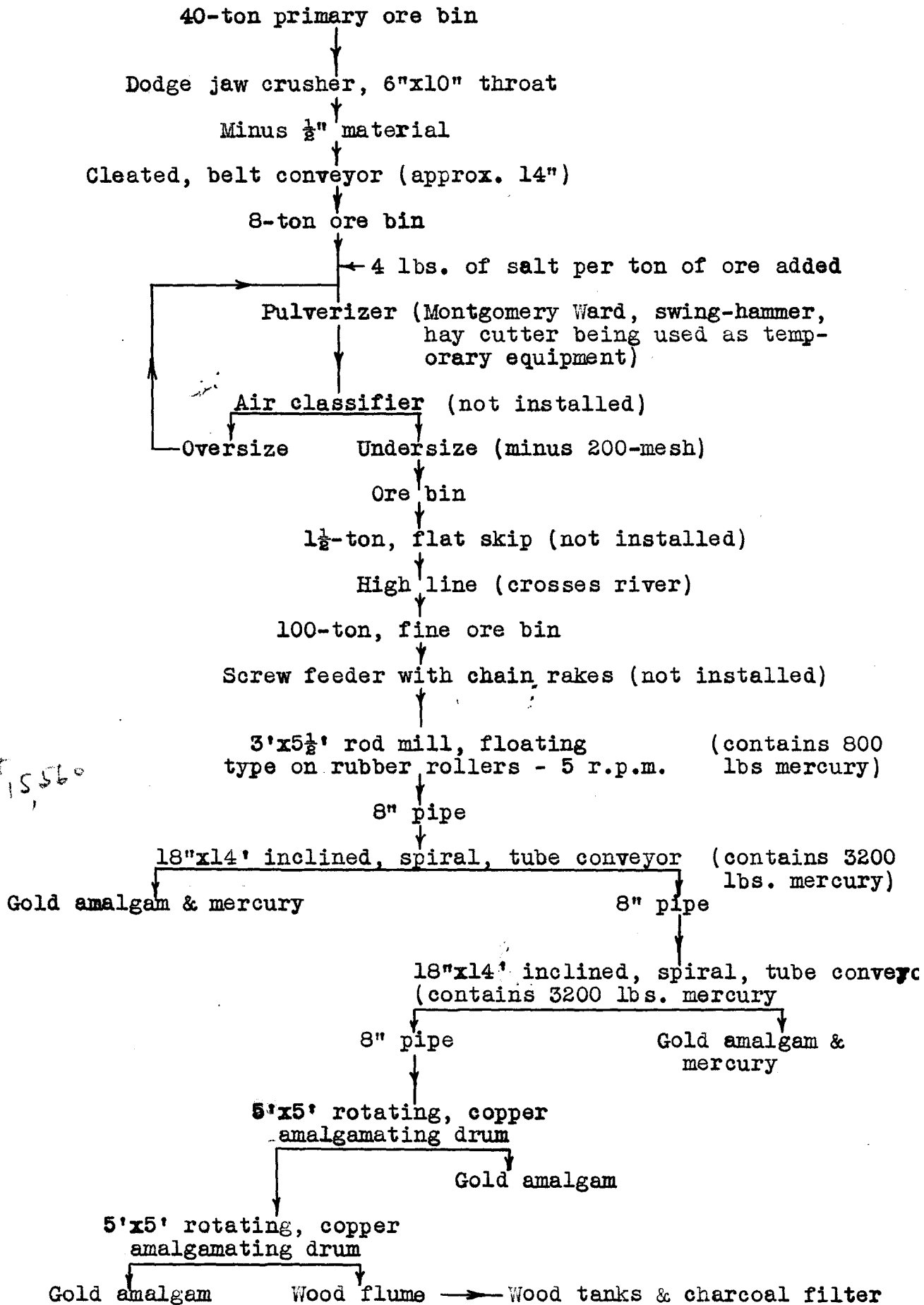
Equipment: Hand tools for mining. Bench & cave method of open cut work contemplated; - no underground operation.

Mill equipment and flow sheet and metallurgy, see next sheet.

Transportation: The property is reached from Canyonville by 23 miles of county gravelled road, and 13 miles of forest service road. From Canyonville to Riddle is 5 miles of hard-surfaced road. This gives a total of 41 miles to a railroad shipping point; 13 miles fair, 23 miles good, and 5 miles excellent.

Snow seldom hinders operations for more than a day or two at a time. A local sawmill prepares rough lumber for all work around the plant. Power will be developed by low-head turbines, it is reported.

MILL FLOW-SHEET



800
 3200
 3200
 7200 lbs Hg = 15560
 1
 213
 216
 144
 1560

EXPLANATION OF FLOW-SHEET

The equipment and machinery listed on the accompanying flow-sheet was observed by the writer with the exception of those items marked, (not installed). The figures for the size and capacity were furnished by Mr. Walling. The mill was not in operation, however, its operation was explained by Mr. Walling.

AIR CLASSIFIER (not installed)

This was designed by O. E. Walling and built for him in Grants Pass.

ROD MILL

Salt water hardened steel liners. Charge of 11 rods varying in diameter from 2 inches to 18 inches; total weight, 29,000 lbs. Mill rotates on 6 rubber rollers at 5 r.p.m. ; contains 800 lbs of mercury and is charged with a voltage (A.C.) of 170 volts at 2300 kilocycles; uses 15 Amperes.

INCLINED SPIRAL TUBE CONVEYORS

These are rubber lined and contain metal screws that are electrically charged. The amperage and voltage used on these tubes was not given. The tubes are set at an angle of 45 degrees with a horizontal plane. Each tube contains 3200 lbs. of mercury.

ROTATING COPPER AMALGAMATING DRUMS

Two cylinders, amalgamated on the outside surface and placed one above the other. The first one in the flow sheet rotates in a direction opposite to the flow of pulp and the second one rotates in the same direction as the flow of pulp. Both drums rotate on a horizontal axis.

POWER

Two Holt deisel(?) engines are used for producing most of the electrical power at the present time. Numerous generators of various sizes are used for producing the electrical power requirements of the plant. Water power is to be developed.

METALLURGY (O. E. Walling)

Salt is added to furnish chlorine which is necessary for the operation of the plant. The reaction of the salt in water with the sulphides in the ore produces the chlorine. All of the elements in the ore go into solution except silica, iron and lead. The gold is amalgamated and recovered at the lower ends of the inclined tubes and from the copper drums. Mercury in the ore is recovered in the inclined tubes. Zinc, calcium, bismuth and others are recovered by electrolysis in wood tanks that are at the end of the flow-sheet. A charcoal filter (not installed) is to be used to precipitate the platinum. The electric currents used in the plant are for "electric amalgamation", settling of fine mercury and creating conditions necessary for the recovery of the different metals.

PLAT-NORKEA MINING GROUP

TILLER-DREW DISTRICT

Owners: Plat-Norkea Mining Group of partners who have invested their money and are building the mill. Orville E. Walling is in charge, address Box 485, Retail, Washington; local address, Tiller, Oregon.

Location: sec. 13 and 24, T. 29 S., R. 1 W., on South Umpqua River, 13 miles east of Tiller, at the mouth of Zine Creek.

Area: 124 claims.

History: Ground originally staked by a man named Tainer and held by him from 1916 - 1931. Present locations are dated about 1935 at Roseburg, Oregon. The property is known locally at the old Zine property, probably because it is located at the mouth of Zine Creek.

Development: Information was not freely given about mining development but apparently there is little. There is considerable activity on mill construction, and although permission to inspect all the workings was not given, there are tanks, cylindrical copper affairs, and a batch of stuff that looked something like a quicksilver retort???

Considerable secrecy surrounds the operation. Walling was not present and apparently the "partners" have been advised to be cagey with their information. It appears that Walling is being "persecuted" by various agencies, and unjustly (?) and therefore the "partners" merely ask to be let alone and carry on to "successful completion the work they have started". Anyone can apply to Walling and get all necessary information, so I was informed.

Their process has something to do with "chlorines" and I didn't ask whether these were of the chorus-girl type or not. A certain amount of "mulling" is necessary and then the stuff is treated to "right electrical currents". The "partners" have had it demonstrated to them that gold cannot be obtained from their slide-material by ordinary methods, but when "milled", they get the gold. I thought they meant ordinary mulling but apparently the mass must be treated with "chlorines" and "right electrical currents" before the process is completed.

The "partners" are very bitter against Archie Carter for his "hounding" of Walling, and they have little use for Nixon as he has said some very uncomplimentary things about Walling. Morrison is "swell people" as far as they are concerned, - he listens to reason and is not trying to pry into their affairs. What they think of me I don't know, but will try to keep on the good side of them in order to secure what information I can.

The outfit is running a rather heavy grocery bill at the Tiller Store, according to Mr. L. B. Eslow, owner of the Tiller Store at Tiller, Oregon. He is beginning to get concerned about the deal.

The "partners" promised that Walling would call upon me today, Saturday, Aug. 3, 1940, and if he does not, I'll mail him a letter Monday, asking for the information, and send it registered mail with a return receipt and request that it be delivered to him personally, or not at all.

Ray C. Treasher,
Aug. 3rd, 1940.

Sept. 17, 1940.

PLAT-NORKEA MINING GROUP

TILLER-DREW DISTRICT

CONFIDENTIAL

Referring to your letter of September 10, 1940, relative to this property, I will attempt to answer your questions in order:

1. Has the plant operated, or is it operating? It was not operating when the plant was visited, Sept. 17, 1940. Some material has been run through portions of the plant but the entire plant is not completely installed. I gathered that ore which will be run is being hauled in, some from near Waldo, and some cinnabar ore from California.
2. Who built the plant? Mr. Walling informed us as follows:

O. P. Warner, Supervisor of Construction, U. S. Navy Yard, Bremerton, Washington, supervised construction of metal parts and their erection. Supervised 40 percent of the building construction on the ground.

C. A. Bushnell, 45 years practice as engineer of construction, partly with U. S. government, partly under contract work in Middle West, Alaska, and Washington. He has supervised construction at all times.

C. Fristoe, Roseburg, worked during foundations laying, and as a consultant during 2 months, May and June, 1940.

The above statements in #2 were taken from dictation by O. E. Walling, and the copy read back to him for his approval.

Mr. Walling stated that Fristoe was a registered engineer, and that he hired him as a registered engineer. I note by the list of registered engineers that Fristoe's name is missing. Either Fristoe misrepresented himself, or something ----.

3. ~~Walling~~ Walling does not claim to be an engineer of any kind. He claims a knowledge of chemistry and metallurgy and likes to call himself a research man, but at no time, in any of my conversations with him has he implied that he is an engineer. He does not claim to be a chemist, or a metallurgist, or a mill man. He has his ideas put into practice ~~form~~ by ~~men~~ men who can do that sort of thing, - according to his statements to us.

The report and the confidential statements are the joint opinions of Treasher and Lewis. Treasher wrote most of the report except metallurgy, and Lewis prepared the statement on metallurgy, merely as a division of labor. We collaborated on the portions each wrote and Lewis' statements on the metallurgy and mill, ~~reflect~~ reflect my opinions as well.

In regard to plant construction, Mr. Walling stated that the pieces of machinery were designed, built, and tested in the State of Washington, at Bremerton*. They were, of course, installed in Oregon, the same as any piece of machinery would have to be installed.

*except the air classifier

No pictures were taken, as it was raining during the inspection. It would have been difficult to have taken pictures under these conditions and rather tough on the camera (personal property). However, Mr. Walling gave permission to take pictures of anything, at any time. We have permission to return at any time when the plant is operating, or not operating, for any reason that we desire.

Mr. Walling cooperated with us most freely. The only information he refused was data on the amperage and voltage impressed upon the "tubes" and the "roll-amalgamators". He did not give permission to see the inside of the "tubes", as he claimed some ~~is~~ mechanical features that are not public property. He did, however, explain the principles of operation.

I (Treasler) can say that I have found no one more willing to give information and cooperate in every way than I found Mr. Walling.

Ray C. Treasher,
Field Engineer,
Sept. 18, 1940.

CONFIDENTIAL

Following is the writers opinion of the plant described in the accompanying flow-sheet :

EQUIPMENT AND MACHINERY

Neat in appearance and appears to be well constructed. throughout.

INSTALLATION

Neat in appearance, appears to have been under the supervision of someone familiar with mill construction.

METALLURGY

The use of aids to contact or union of the precious metals and mercury such as passing a small, low-voltage electric current through the plate, milling in salt water and grinding in the presence of mercury is known as intensive amalgamation and is not new to the field of metallurgy. The writer is of the opinion that this is all that the plant in question will do if it works and according to Mr. Walling, a test batch was treated in the plant recently with great success. Whether the plant will accomplish all that Mr. Walling claims or not is something that will have to be proven. The plant is different than any ever examined by the writer and parts of the plant appear a bit impractical; however, until an examination has been made when the plant is actually operating, it is impossible to predict its practicability. Certain details concerning the operation of part of the plant were not disclosed. Dry grinding to 200-mesh employing air classification does not appear to be practical when the ore is to be taken from the surface and will no doubt be damp.

The writer believes that the plant will not do ^{all that} ~~what~~ Mr. Walling claims, but believes that by experimenting and changing the flow-sheet ~~somewhat~~ the plant could be operated to save most of the free gold in the ore and also save the sulphides in the form of a concentrate.

Signed.....

Albert A. Lewis
Analyst

THOMASON GROUP (Quicksilver)

Tiller-Drew Area

Owner: Louis Thomason, Drew, Oregon.

Location: 11 miles south of Drew on the Drew-Cow Creek road in the SE $\frac{1}{4}$ sec.16, T.32 S., R.2 W., at an elevation of 2800 feet.

Area: 2 lode claims (40 acres) held by location.

Miscellaneous Information: One 16-foot shaft in a poor state of repair.

Mr. Thomason has tested several acres of ground with a posthole digger and reports favorable results. It is not known whether the cinnabar occurs in place or if placer material has washed down from some nearby source.

Informant: J. E. Morrison 38.

UMPQUA MINING COMPANY (Quicksilver)

Tiller-Drew Area

(See Buena Vista Mine)

O. G. Graham, Portland, President; W. S. Copeland, Secretary, 5714 Williams Ave., Portland, Oregon.

UNION LEADER MINING COMPANY

Tiller-Drew Area

"This company owns 97.74 acres of mining lands with improvements 12 miles east of Glendale at the head of Cow Creek in the SE $\frac{1}{4}$ sec.36, T.32 S., R.5 W."

Reference: Parks and Swartley 16:226 quoted.

ZINC MINE

Tiller-Drew Area

Callaghan and Buddington 38:130 give the following description:

"An isolated prospect on the South Umpqua River between Straight and Boulder Creek, in sec.23, T.29 S., R.1 W., and 13.3 miles by road east of the bridge at Tiller, in Douglas County, is known locally as the Zinc mine. Drifts penetrate both banks of the river slightly above the stream. The country rock is volcanic breccia that has been cut by two dikes of angite diorite, each about 150 feet wide and 200 feet apart. They lie on both sides of the vein on the north bank of the river and strike about N.20° W., though the vein, judged from an altered zone in the road, strikes N.60° W.

"The vein matter on the dump is chiefly altered volcanic breccia containing disseminated pyrite and composed largely of ankerite and clay minerals. Sphalerite occurs as irregular lenses associated with pyrite and galena. Some sphalerite contains blebs of galena and chalcopryrite visible only with the aid of the microscope. Calcite and marcasite are associated in vugs. Some of the calcite is black because of finely divided pyrite. No coarse quartz was observed, and there appears to have been little, if any, silification. The precious-metal content is not known, but it is expected that the amount of any ore developed will be small."

Reference: Callaghan and Buddington 38:

In August 1940 work was being done at this property by a group called the Plat-Norkea, reported as a partnership. Orville E. Walling, Box 485, Retail, Washington, and Tiller, Oregon, was in charge of operations. A treatment plant was being constructed which reportedly would beneficiate the ore by an electro-chemical process.

See copy

STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES
 2033 First Street Baker, Oregon 1069 State Office Building Portland 1, Oregon 239 S.E. "H" Street Grants Pass, Oregon

REQUEST FOR SAMPLE INFORMATION

The State law governing analysis of samples by the State assay laboratory is given on the back of this blank. Please supply the information requested herein fully and submit this blank filled out along with the sample.

Your name in full Len Ramp (DOGAMI)

Street or P.O. Box P.O. Box 417 City & State Grants Pass, Oregon

Are you a citizen of Oregon? Yes Date on which sample is sent 7/26/60

Name (or names) of owners of the property ?

Are you hiring labor? Are you milling or shipping ore?

Name of claim sample obtained from ?

Location of property or source of sample (If legal description is not known, give location with reference to known geographical point.)

County Douglas Mining District Tiller-Drew

Township 29 S Range 1 W Section 24 Quarter section SE NW

How far from passable road? On Name of road Zinc Creek Rd.

Channel (length) Grab Assay for Description

Sample no. 1 10' chip Au, Ag, Se

Sample no. 2

(Samples for assay should be at least 1 pound in weight)

(Signed) Len Ramp

DO NOT WRITE BELOW THIS LINE - FOR OFFICE USE ONLY - USE OTHER SIDE IF DESIRED

Sample Description Pyrite-impregnated clay gouge.

Sample number	GOLD		SILVER		SELENIUM			
	oz./T.	Value	oz./T.	Value	Se			
P-25469 UG-181	0.005	\$0.17	Trace	- -	None found	- - -	- - -	- - -

Report issued Card filed Report mailed 8-12-60 Called for

PLAT-NORKEA MINING GROUP

TILLER-DREW DISTRICT

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Aug. 3rd, 1940.

History

A party by the name of Tayler discovered the Strike in 1910,--and parties by the name of O. F. Tainer and Clark formed a Stock Company. They dissolved about 1916, and O. F. Tainer relocated this property and held it then until 1926 or 1927 (not sure). Ore was shipped by Backer to Riddle, the closest railroad point, by packhorse. The reason for discontinuation of shipment was the lack of proper roads. O. F. Tainer let this claim go delinquent for a period of seven years, and it was relocated by its present owners.

Location

Of these 14 unpatented mineral claims on the South and North bank of the South Umpqua River, 13 miles East from Tiller Post Office, Douglas County, a new forest road runs past the mill site of these claims. These claims are held by ten members, by location, and lie in the National Forest.

Development of Ore Body.

Every claim shows the sulphite ore which contains gold, silver, mercury, zinc, arsenic, and pyrites of iron on which the gold is found as a sulphite. Claims 9 and 10 show remarkable mineral deposits in connection with mercury oxides from white to brown, and cinnabar, also metacinnabar (black oxide). There are two main tunnels; claim 5 has 350 feet of tunnel, all the way on ore, with two cross-cuts showing the width of the Lode. On claim 6, the tunnel is over 200 feet long and all the way on pay ore with a 60 foot cross-cut. The writer's invitation for inspection of these 14 mineral claims found never before such a big mineralized ore zone. These well defined ledges are more of a porphyry nature (dyke matter) and need not be tunnelled, but mined in an open quarry fashion. There is not a figure big enough to cover the tremendous tonnage. The camp consists of four log cabins and outbuildings. The Southern portions carry remarkable ore bodies. The West contact, or dividing wall, is of igneous origin; several such divisions contact this dyke, above stated. Towards the Eastern portion, more likewise, is an amphibolic diabase dioxide formation. The main mineral dyke is of a riolite nature.

Mill Equipment

The new owners have no mill buildings nor machinery to get the values out, and wish to invite big capital for a 500 ton mill to get under production.

Transportation

It is 34 miles to the Canyonville Highway, 52 miles to Riddle, Oregon, the closest Southern Pacific Railroad Station. There is telephone and post service as far as Tiller.

Timber and Water Power Site

Supplies are unlimited. About 2250 feet in an Easterly direction there is a natural dam site for erecting a hydro-electric plant to maintain cheap power to operate this gigantic mineral deposit.

Operations

Operation of this property can be carried out 12 months in the year. The miners and mill men can be secured at standard daily, hourly prices. Local men will cut the expense of keeping a boarding or hotelery camp.

Values of contents of Ore.

Gold	Silver	Mercury	total ton run.
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Inspected and recommended by courtesy of,

George Jensen, Geologist

CZ-6 (Cabin) - Propylitized quartz-bearing diabase

Primary minerals	Percent	Description
Essential constituents		
Plagioclase-An ₆₅	61	Medium grained subhedral laths, Carlsbad plus albite twins, zoned, slight argillic alteration, some is fractured and fractures filled by late K-feldspar.
Orthoclase Adularia ?	10	Finer grained than plagioclase, anhedral, Carlsbad twins, interstitial to and filling fractures in plagioclase and some intergrown with the interstitial quartz. Slight argillic alteration.
Quartz	4	Anhedral, medium grained, interstitial to plagioclase and encloses small grains of orthoclase.
Varietal accessory minerals		
Augite	14	Subhedral, short prismatic habit, $Z \wedge c - 45^\circ$, good cleavage, twinned, some replacement by chlorite and epidote.
Hypersthene	-1	Few short prismatic crystals, pleochroic in pinkish brown, parallel extinction, associated in small amounts with augite.
Hornblende	6	Sub- to anhedral, prismatic, pleochroic in yellowish green to brown, most is replaced by fine grained aggregates of chlorite with associated epidote, index of refraction lower than for augite, some is marginal to augite.
Minor accessory minerals		
Ilmenite	2+	Subhedral, black opaque, forms lattice-work intergrowths with rutile, scattered throughout silicate matrix.
Rutile	1	Present in lattice-work intergrowths with ilmenite as described above, very high positive relief, translucent.
Apatite	-1	Few very tiny colorless prisms with moderate positive relief and low birefringence.
Secondary minerals		
Clays	4	Extremely fine grained dusting of clay alteration present in feldspar minerals - especially orthoclase.
Chlorite	7	Pale green color, pleochroic, abnormal blue interference, formed largely from alteration of hornblende, often associated with epidote.
Epidote	3	Subhedral prisms, yellowish green color, very high positive relief and high birefringence, replaces former hornblende and plagioclase grains.
Leucoxene	-1	Very fine grained opaque white aggregates of Ti-oxides sparingly present with chlorite and epidote and formed from alteration of amphibole.
Pyrite	-1	Equant opaque cubic crystals scattered through altered silicate matrix, often in association with ilmenite.
Iron oxides	-1	Very fine grained opaque brown to red aggregates present in small fractures.
Texture: Medium grained phaneritic, equigranular.		

UZ-1 - Breccia or agglomerate with siliceous matrix and completely argillized fragmental inclusions

Quartz - 56% - Fine grained granular mosaic aggregate with fairly strong iron staining makes up matrix which encloses completely argillized fragments - some of which are strongly iron-stained and some of which are free of stain.

Clays - 38% - Extremely fine grained aggregates with low birefringence and negative relief are present as angular to sub-round fragments in the siliceous matrix. No remnant remains of the original rock fragments. Some of argillized fragments are free of iron stain while others are strongly stained and probably represent the alteration product of iron-bearing primary minerals. Most of the unstained argillized fragments have been plucked from the thin section during preparation.

Iron oxides - 5% - Very fine grained opaque yellowish to brown oxides present in argillized fragments and as fracture fillings. Reddish opaque iron oxides are present interstitially to quartz in the siliceous matrix.

Leucoxene - 1% - Very fine grained opaque white aggregates of Ti-oxides are present as pseudomorphs after an original titanium-bearing mineral.

Texture: Fine grained siliceous matrix enclosing medium to coarse angular or sub-rounded fragments.

UZ-1 thru UZ 5
Road # 800 USFS.

Sample area 90RR.

UZ-2 - Siliceous breccia containing argillized and chalcedonic fragments

Quartz - 75% - Fine to very fine grained granular mosaic or sutured granular aggregates of quartz with some interstitial iron oxides making up matrix which encloses coarse fragments. Grain size varies, and gives strong impression of two periods of silicification - one following an earlier stage of breccia formation.

Chalcedony - 1+% - Aggregates with feathery extinction are present in fragments enclosed by the silicified matrix. In some fragments the chalcedony is enclosed by argillized material - suggesting possible origin as amygdule fillings in an original volcanic rock.

Argillized fragments - 20% - Angular fragments are now essentially completely altered to extremely fine grained clay aggregates, but in a few fragments there are remnant textures suggesting these were originally a rock rich in fine grained plagioclase and with some ferromagnesian phenocrysts as well as amygdule fillings of chalcedony. Original rock was probably volcanic in origin. Most of the completely argillized fragments have been plucked from thin section during preparation.

Iron oxides - 2+% - Fine grained opaque brown to red oxides present in siliceous matrix and formed from alteration of argillized breccia fragments. In latter occurrence, may result from argillic alteration of original ferromagnesian minerals.

Leucosene - -1% - Very fine grained opaque white to tan aggregates of Ti-oxides present mainly in argillized breccia fragments.

Texture: Relatively coarse breccia fragments enclosed by strongly silicified and fine grained matrix. Some indication of at least two stages of brecciation - angular breccia fragments are present in the breccia.

UZ-3 - Very strongly argillized and fractured porphyritic andesite(?) with chalcedony-filled amygdules

Primary minerals	Percent	Description
Essential constituents		
Phenocrysts		
None preserved - but remnant textures suggest original small phenocrysts of plagioclase		
Groundmass	98	Originally a very fine grained aggregate which remnant textures suggest was high in plagioclase microlites. Minerals of the primary suite have been almost completely altered to clays - with some release of iron oxides. Contained some elliptical to round cavities with irregular walls which are filled by chalcedony. Encloses some foreign rock fragments with siliceous composition.
Varietal accessory minerals		
None preserved - but iron oxide distribution indicates former ferromagnesian minerals.		
Minor accessory minerals		
Apatite	-1	Scarce colorless prismatic crystals with moderate positive relief and low birefringence.
Ilmenite	1	Former tabular grains are completely altered to leucoxene.
Secondary minerals		
Quartz	5	Very fine grained sutured granular aggregates present with clays from alteration of feldspars and occasionally forming replacement patches in argillized groundmass. Also fills irregular fractures.
Clays	91	Extremely fine grained clay aggregates present as essentially complete replacement of feldspars in both groundmass and scarce former phenocrysts. Clay alteration accompanied by some fine grained silica - which is intergrown with clays and too fine grained to estimate amounts.
Chalcedony	1	Lens shaped to rounded aggregates with feathery extinction present as cavity fillings.
Leucoxene	-1	Very fine grained opaque white aggregates formed from alteration of accessory ilmenite.
Iron oxides	3	Fine grained yellowish to brown opaque grains and aggregates present as pseudomorphs after pyrite, in fractures, and "soaked up" by altered matrix.

Texture: Aphanitic, slightly porphyritic. Rock is strongly fractured and altered.

UZ-4 - Silicified breccia with argillized and chloritized fragments of igneous and of siliceous rock

Quartz - 42% - Very fine grained granular mosaic aggregate with some interstitial iron oxides forming the matrix enclosing angular to subround fragments of plagioclase-rich rock and of siliceous rock. Some fragments show fairly extensive replacement by quartz and others have sharp and unreplaced boundaries.

Altered igneous fragments - 44% - Medium to coarse grained fragments of rock originally high in plagioclase microlites and containing a few small plagioclase phenocrysts. Rather strongly altered to fine grained clays and to a brownish colored chlorite with low birefringence. Iron oxide staining is present in association with chloritized fragments. There is considerable textural variation between the igneous fragments - both as to grain size and in proportion of phenocrysts. Essentially all of the primary constituents are destroyed by alteration.

Siliceous rock fragments - 8% - Angular fragments made up almost entirely of extremely fine grained quartz are enclosed by the somewhat coarser grained siliceous matrix. Such fragments are considerably less abundant than igneous material.

Chlorite - (20%) - Yellowish brown color, medium grained, low birefringence, present with clays and iron oxides as replacement of igneous rock fragments. Percentage included in listing above for igneous rock fragments.

Clays - (24%) - Extremely fine grained, negative relief, low birefringence, present with chlorite and alone as replacement of igneous rock fragments. Percentage composition included above under igneous rock fragments.

Iron oxides - 6% - Reddish brown opaque oxides present both in siliceous matrix and abundantly with the altered igneous fragments.

Leucoxene - -1% - Very fine grained opaque white to tan aggregates of Ti-oxides formed from alteration of accessory ilmenite and from alteration of other titanian minerals in the altered silicate rock fragments.

Texture: Medium grained angular to subround fragments in fine grained siliceous matrix.

UZ-5 - Silicified and very strongly argillized latite(?) porphyry

Primary minerals	Percent	Description
Essential constituents		
Phenocrysts		
Plagioclase-An?	38	Former feldspar phenocrysts are completely altered to clays. No remnants remain to give clues as to plagioclase composition or to individual mineral percentages.
Orthoclase		
Quartz	-	No phenocrysts present.
Groundmass	61	Fine grained aggregate formerly containing plagioclase laths and a larger amount of anhedral equant feldspar - probably K-feldspar. Is strongly argillized, and it is not now possible to determine original mineral composition.

Varietal accessory minerals

None preserved - Remnant texture suggests prismatic ferromagnesian mineral, but none remains.

Minor accessory minerals

Apatite	-1	Very scarce small colorless prisms with moderate positive relief and low birefringence scattered through altered groundmass.
Ilmenite	1	Former small equant to platy grains are completely altered to leucoxene.

Secondary minerals

Quartz	9	Fine to medium grained granular mosaic aggregates lining cavities and as filling of fractures. Often shows very fine growth banding where present in centers of cavities. Also present in extremely fine grained aggregates intergrown with clays - and is here too fine grained to determine percentage composition.
Clays	60	Extremely fine grained aggregates completely replacing feldspar phenocrysts and most of feldspars in groundmass. Accompanied by fine grained silica.
Leucoxene	1+	Very fine grained opaque white aggregates formed from alteration of accessory ilmenite and from somewhat larger former ferromagnesian grains.
Iron oxides	2+	Very fine grained yellowish brown opaque aggregates "soaked up" by argillized material - especially near weathered surface of rock.

Texture: Aphanitic, porphyritic. Very strongly argillized.

LZ-1 - Propylitized fine grained porphyritic quartz diorite

Primary minerals	Percent	Description
Essential constituents		
Plagioclase-An ₄₆	50	Subhedral, Carlsbad plus albite twinning, zoned, few larger than average phenocrysts, replaced in part by calcite and epidote, slight argillic alteration.
Orthoclase Adularia ?	26	Anhedral, Carlsbad twins, interstitial to abundant plagioclase, numerous microscopic inclusions, some argillic alteration.
Quartz	10	Anhedral, undulatory extinction, interstitial to feldspars, some grains have fairly abundant inclusions.
Foreign inclusions	(8)	Irregular fragmental inclusions of fine grained porphyry with composition of quartz latite are enclosed by the more mafic rock.
Varietal accessory minerals		
Augite-Hornblende(?)	12	Former short to long prismatic crystals of ferromagnesian minerals are completely replaced by chlorite and epidote.
Minor accessory minerals		
Apatite	-1	Small colorless prismatic crystals with moderate positive relief and low birefringence.
Ilmenite(?)	2	Former small grains scattered throughout altered silicate matrix and largely altered to leucoxene.
Secondary minerals		
Clays	2	Extremely fine grained dusting of clay alteration developed from feldspar minerals.
Chlorite	14	Pale green, weakly pleochroic, almost isotropic to abnormal blue interference colors, formed from alteration of primary femag minerals.
Epidote	4	Eu- to subhedral prisms, faintly colored, very high positive relief, either second order interference colors or abnormal blue, present with chlorite as replacement of femags and with calcite.
Calcite	3	Anhedral replacement aggregates present mostly in plagioclase, associated with epidote. Some also replaces other silicates.
Leucoxene	2	Very fine grained opaque white to tan aggregates formed largely from alteration of accessory ilmenite.
Pyrite	-1	Single small cubic crystal observed in altered silicate matrix.

Texture: Fine grained phaneritic, slightly porphyritic.

LZ-2 - Propylitized quartz andesite porphyry (quartz diorite)

Primary minerals	Percent	Description
Essential constituents		
Phenocrysts		
Plagioclase-An ₄₈	30	Subhedral, Carlsbad plus albite twins, zoned, shows variable degree of replacement by clays, chlorite, and epidote.
Orthoclase	-	No phenocrysts present.
Quartz	-	No phenocrysts present.
Groundmass	61	Fine grained aggregate made up largely of plagioclase laths (30%) and with important amounts of quartz (6%), hornblende (8%), and orthoclase (17%). Most of hornblende is altered to chlorite and feldspars show some replacement by clays, epidote, and chlorite. Encloses few finer grained inclusions which have a similar composition to the host rock.
Varietal accessory minerals		
Hornblende	6	Short to long prismatic phenocrysts, pleochroic in tan to green, twinned, good cleavage, $Z \wedge c - 10^\circ$, most grains show alteration to chlorite and epidote. As mentioned above, hornblende also present in groundmass.
Minor accessory minerals		
Sphene	-1	Small subhedral grains, very high positive relief and high birefringence, scattered throughout groundmass.
Apatite	-1	Very small colorless prisms with moderate positive relief and low birefringence.
Magnetite	3	Small equant black opaque grains widely scattered through altered matrix.
Secondary minerals		
Quartz	3?	Fine to medium grained anhedral replacement aggregates present in lenses and veinlets having very irregular contacts with groundmass. Most has concentration of relatively coarse sulfides.
Clays	4	Extremely fine grained dusting of argillic alteration present in both phenocryst and groundmass feldspars.
Chlorite	14	Pale green, pleochroic, almost isotropic to abnormal blue interference colors, replaces primary hornblende and to some extent the feldspar minerals in both groundmass and phenocrysts.
Epidote	6	Fine grained, largely in anhedral aggregates, very high positive relief and high birefringence, replaces both hornblende and plagioclase.
Sericite	1	Fine grained colorless mica with high birefringence is developed in small amount from alteration of plagioclase phenocrysts.
Pyrite	2+	Medium grained subhedral cubic crystals present in irregular quartz replacement aggregates and scattered throughout rock. Some show oxidation rims.

LZ-2

Secondary minerals	Percent	Description
Iron oxides	-1	Fine grained yellowish brown to reddish oxides formed from oxidation of pyrite and in microfractures.

Texture: Borderline aphanitic-fine grained phaneritic, porphyritic.

LZ-3 - Mineralized and completely altered andesite(?)

Primary minerals Percent Description

Essential constituents

Phenocrysts

No feldspar phenocrysts present.

Groundmass	95	Fine grained aggregate high in plagioclase laths with ragged terminations and in K-feldspar. Feldspar laths contain abundant sub-microscopic inclusions and show alteration to clays and other alteration products - which, along with the small grain size, make determination of mineral percentages impossible. Some quartz may be of primary origin, but occurrence suggests largely secondary. Contains inclusions of a quartz-bearing fine grained rock.
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Varietal accessory minerals

Hornblende(?)	4?	Configuration of secondary chlorite aggregates suggests original presence of prismatic femag mineral, possibly hornblende. Remnant texture, however, is not definitive.
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Minor accessory minerals

Apatite	-1	Tiny colorless prisms with moderate positive relief and low birefringence scattered through feldspar groundmass and enclosed by quartz replacement aggregates.
Iron oxide	1	Former small equant opaque grains are largely replaced by leucoxene - indicating titanian composition.

Secondary minerals

Quartz	5	Fine to medium grained granular mosaic replacement aggregates with irregular borders are scattered throughout rock. Enclose unreplaced remnants, and have associated pyrite.
Sericite	-1	Scarce medium grained aggregates of colorless mica present in association with quartz replacement aggregates.
Clays	10	Extremely fine grained "dirty" alteration products of feldspars in groundmass and phenocrysts.
Chlorite	7	Green color, pleochroic, abnormal blue interference, present as small aggregates - in part radial - replacing former ferromagnesian mineral, feldspar, and also present in quartz replacement patches.
Epidote	5	Fine grained, an- to subhedral, yellowish green color, birefringence either second order or abnormal blue, small crystals with quartz replacement aggregates and in very fine grained aggregates replacing feldspars.
Leucoxene	1+	Fine grained white to tan aggregates of Ti-oxides formed from alteration of original femag mineral and accessory iron oxide.
Siderite	1	Small tan grains with very strong differential relief are scattered through altered matrix.
Pyrite	4	Medium grained euhedral cubic crystals present both singly and in aggregates with secondary quartz, also scattered through groundmass.

LZ-3

Secondary minerals	Percent	Description
Chalcopyrite	-1	Few small anhedral grains with quartz replacement patches - some in association with pyrite but most are not. Altered rims.
Chalcocite	-1	Black or bluish black alteration rims formed by replacement of chalcopyrite.
Iron oxides	-1	Very fine grained opaque brownish oxides formed from weathering of sulfides and "soaked up" by altered silicate matrix.

Texture: Aphanitic, equigranular.

LZ-4 - Slightly chloritized andesite

Primary minerals Essential constituents	Percent	Description
Phenocrysts		
Plagioclase-An ₄₆ ?	-1	Very few small subhedral phenocrysts with albite plus Carlsbad twins, slight argillic alteration and replacement by chlorite and epidote.
Orthoclase	-	None present.
Quartz	-	None present.
Groundmass	93	Fine grained aggregate made up largely of plagioclase microlites (75%) which show moderately well developed alignment, and containing smaller amounts of K-feldspar (12%) and chlorite formed from primary hornblende (3%). Also has very small amount of quartz (-1%) interstitial to feldspar laths. Contains a few slightly coarser grained inclusions which have essentially the same composition as host.

Varietal accessory minerals

None present as phenocrysts.

Minor accessory minerals

Apatite	-1	Very few tiny prisms with moderate positive relief and low birefringence present as inclusions in plagioclase.
Magnetite	7	Very small equant black opaque grains very abundantly scattered through matrix. Some tends to segregate into magnetite-hornblende rich bands.

Secondary minerals

Clays	1	Extremely fine grained dusting of clay alteration sparingly developed in plagioclase microlites.
Chlorite	5	Green color, pleochroic, abnormal blue interference colors, forms very largely from alteration of groundmass hornblende, small amount also replaces plagioclase.
Epidote	1	Extremely fine grained, anhedral, high positive relief and high birefringence, small amount scattered through altered groundmass.
Pyrite	-1	Few small sub- to anhedral grains scattered through silicate matrix.
Iron oxides	-1	Fine grained opaque brown to red oxides formed from oxidation of pyrite and magnetite.

Texture: Aphanitic, equigranular. Moderately well developed flow structure shown by aligned plagioclase microlites and by tendency for some of groundmass magnetite and hornblende to form bands.

T293 RIW SEC 24 Zinc Creek

May 9-11, 1988

ELR
ELR.

Road 800 (U.S.F.S)

Sample: Chip Representative 55 paces (840' length) Taken SW to NE.
R_x Type Volcanic. (porphyry type) Rhyolite?
Lt to Dark brown over all color Lt to Med Yellow Brown.
Original R_x text altered to clays some included SiO₂
in places oxidation has appearance of D.G.
Blocky sections of o.c. are higher in SiO₂ (oxidized?)

Hematite & Manganese [?] scumlets

Ab. Limonite

Some DK Red Brown chert seams.

Malachite? stains

NO Pyrite casts

STRIKE of ZONE NW-SE May connect to Zinc Tunnel at 1680' ELEV.

Assay Geochem Au, Ag, As, Hg, Sb, Cu, Zn?

Will Zinc suppress Au?

Sample Approx EL 2240' (River Level at Bridge 1390')

Tunnel approx 1680'

Sample may cut zone strike at right angles for approx zone width

Date 5/9/88
District Zinc Creek middle o.c.
Claim T293 RIW 524
Sample Description _____

Hunter has Five Assays

call RA 6/1/88 Results:

Sample taken by ELR. ppm ppm
Assay for: Au, Ag, As, Hg, Sb, Zn
Ø Ø .23% 1.4 160
ppb. 65

Sample # 91RR

Zinc Creek

U.S.F.S Rd # 850 T29 R1E North Line (WESTERLY) SEC 30.

May be strike continuation of Sample 90RR

Intense shearing strike N 30E. Vertical - Could be Zone strike? However would then be at right angles to normal strike -

ELEV. 2800-2880'

(Zn CK Bridge 1390'

Est o.c. width at 100'

dark red chert nodules, seams abundant.

white opal seams - chert in chert.

lt. green to forest green blots in chert malachite? V.A.B.

Throughout o.c. (Possibly Chlorite - Nickel - Epi - H₂O salts.

25% clay development.

Geochem

Au - Ag - As - Hg - Sb.

Green Mineral ?

Request Zinc Assay or Pulp 6/6/88 Phone -

Date 5/10/88

District Zn CK.

Claim T 293 R 1 E SEC 30

Sample Description _____

Sample taken by _____

Assay for:

	ppm	ppm	ppb	ppm	ppm	
Au	Ag	As	Hg	Sb	Zn	
Ø	.2	52	36	4.1	? 50	

GREEN MIN ?

Sign on door of main camp building says:

"To Moe Platt and to whom it may concern--You and all persons concerned are hereby notified that we claim a possessory lien against all of the personal property located on what is known as the Palladium Gold Mine premises."

15th May 1958

James W. Graham

George Clark

Margaret Clark

Tiamon M. Hatcher

No one on property.

Tunnel #1 (see sketch) has compressor by it and looks open. Accessible by cable car which was tied up so I did not try it out. River too high to wade at this time of year.

Tunnel #2 looked for but not found. May be covered by new road.

Tunnel #3 looked for but not found.

Specimens on porch of house are like those described by Callaghan and Buddington (1938).

A new road crosses the river 1 mile east of the mine (see topographic map); the road may well cross the vein etc to the s.e. of the mine.

Timber in the whole area is heavy and there is no indication of work other than that in the one adit on the south side of the river.

Diorite in road cut near camp shows ca, 1/2 % blebs and seams of py (see sample), also green alteration mineral.

Conclusions: Mineralization is similar to that at Bohemia except copper must be subordinate to lead, zinc. This prospect has no significance so far

as the copper prospect is concerned. Furthermore, outcrops are few and poor.

Report by: Koch

RECORD IDENTIFICATION

RECORD NO..... M015533
RECORD TYPE..... X1M
COUNTRY/ORGANIZATION. USGS
INFORMATION SOURCE... 1 2
MAP CODE NO. OF REC..

REPORTER

NAME..... BRADLEY, R.; WALKER, G. W.
DATE..... 78 10
UPDATED..... 81 04
BY..... FERNS, MARK L. (BROOKS, HOWARD C.)

NAME AND LOCATION

DEPOSIT NAME..... ZINC MINE
MINING DISTRICT/AREA/SUBDIST. TILLER-DREW AREA
COUNTRY CODE..... US
COUNTRY NAME: UNITED STATES
STATE CODE..... OR
STATE NAME: OREGON
COUNTY..... DOUGLAS
DRAINAGE AREA..... 17100302 PACIFIC NORTHWEST
PHYSIOGRAPHIC PROV..... 13 KLAMATH MTNS

QUAD SCALE QUAD NO OR NAME
1: 62500 RED BUTTE (1955)

LATITUDE LONGITUDE
43-02-33N 122-47-40W

UTM NORTHING UTM EASTING UTM ZONE NO
4765350.0 516750.0 +10

TWP..... 029S
RANGE..... 001W
SECTION.. 23
MERIDIAN. WILLAMETTE

POSITION FROM NEAREST PROMINENT LOCALITY: ON BOTH SIDES OF THE SOUTH UMPQUA RIVER 13.3 MILES NORTHEAST OF TILLER

COMMODITY INFORMATION

COMMODITIES PRESENT..... ZN PB CU

ORE MATERIALS (MINERALS, ROCKS, ETC.)

EXPLORATION AND DEVELOPMENT

STATUS OF EXPLOR. OR DEV. 2
 YEAR OF DISCOVERY..... 1910
 PRESENT/LAST OPERATOR..... PLAT-NORKEA

DESCRIPTION OF DEPOSIT

DEPOSIT TYPES:

VEIN

FORM/SHAPE OF DEPOSIT: IRREGULAR LENSES

SIZE/DIRECTIONAL DATA

SIZE OF DEPOSIT..... SMALL

STRIKE OF DREBODY.... N 60 W

DESCRIPTION OF WORKINGS

UNDERGROUND

COMMENTS(DESCRIP. OF WORKINGS):

WORKINGS TOTAL 2300 FT; 17 SHORT ADITS, MOSTLY CAVED

PRODUCTION

UNDETERMINED

PRODUCTION COMMENTS..... SMALL AMOUNT OF ORE SHIPPED IN 1920'S; NO RECORDS AVAILABLE

GEOLOGY AND MINERALOGY

AGE OF HOST ROCKS..... ED

HOST ROCK TYPES..... TUFF BRECCIA

IGNEOUS ROCK TYPES..... DIKES OF AUGITE DIORITE AND ANDESITE

PERTINENT MINERALOGY..... DISSEMINATED PYRITE, CALCITE, QUARTZ

LOCAL GEOLOGY

NAMES/AGE OF FORMATIONS, UNITS, OR ROCK TYPES

1) NAME: COLESTIN-FISHER

AGE: ED

SIGNIFICANT ALTERATION:

CLAY ALTERATION OF HOST ROCK

GENERAL REFERENCES

1) OREGON METAL MINES HANDBOOK, 1940 , ODGMI BULL. 14 - C, V. 1 , P. 130 .

2) CALLAHAN, E. AND BUDDINGTON, A. F., 1938, METALLIFEROUS MINERAL DEPOSITS OF THE CASCADE RANGE IN OREGON: USGS BULL. 893, P. 130

Plat - Norke a Mining Group

Owners: Partnership of about 26 or 27 men (Mrs. R. L. Whipple has all the records)

Location:

Area:

History (see attached sheet)

Development: Altogether 17 tunnels; #1 - 200' at river level; #2, 3 & 4, are 50' not over 100' above river; #5 - 400' about 50' above river; #6 - 107', 2100' above river; #7, 691', 2460' above river; #8 - 307' - 40' above river; #9 - 170' about 900' above river; remainder are 50'-75' in length scattered over property. Only mining is a 270 T test, road in Brementon Work, in 1939 (July + Aug) taken for #5. 36 T taken for #1. #5 averaged \$17 + #1 averaged \$46 across a 14' face.

Equipment: Hand tools for mining; bench & case method of open cut and timbered. No underground operation.

MILL: Primary ore bin 40 T to a Dodge type crusher throat 6x10 to $\frac{1}{2}$ " conveyed to an 8 T hopper & then to a pulverizer that crushes to 200 mesh. (Temporary MW hay-cutters). No air classifier that rejects anything under 200 mesh, capacity 15 T per hr. Material crosses the river on a (timbered) dinky engine + high-line with $1\frac{1}{2}$ ton flat skip. No fine ore bin 100 T capacity with worm feed (timbered) to a 42" x 72" rod mill (outside measurement) 36" x 72" inside, equipped with salt water hardened cold-rolled liners.

Rods are 14, 3 are 18" diameter + other are smaller, 3 are 12", + remainder 6" down to 2". Rod mill turns 5 rpm, has 800# quicksilver charge, fine grinding Cl is released - Voltage between 2 ends

Flint Tubes - voltage & ampere not stated, worm conveyors plated - and the tubes are rubber lined. 3200# of quicksilver in each tube.

Roll amalgamator - 5' dia., - would 5' turn counter to one flow + counter to each other, A.C. on both voltage + amperage not stated. Oxygen for air assists in electroplating.

Driers + electrolytic flumes - Zn, Cd, Bi, X group, lead is saved by concentrator in flumes.

Geology #5 adit inspected. Wall rock is a silicified tuff which has been fractured + softened. Entire mass is impregnated with sulfides so that at almost any place a distinct sulfur odor is detected when rock is broken. In the first X cut - in 317', the tuff zone contacts a hard volcanic rock that is slightly greenish in color. Contact seems to be almost vertical - it is not definite + sharp but the tuff is easily distinguishable by a different system of fracturing.

The tuff is well silicified + in the wall it would be taken, readily for a flow rock. Some of the tuff contains large, softened, pumice(?) fragments. Some of the adjacent rock contains sulfides bled away from the contact.

Structure seems to be somewhat on edge. If so - the tuff zone being less competent, was fractured, then impregnated with silica, then with silica + sulfides. Some of the fractured areas have been altered + softened + the sulfide grains + crystals seem to be larger in these softer zones.

Main sulfide is pyrite. Some galena grains were seen. Pyrite in small masses as pyritohedra not over 1/8" in diameter. In the harder, silicified tuff, much of the sulfide seems to be in small strings or veinlets. At one point a greenish stain, similar to eggs was noted. Walling stated that it was ferrous sulfate. Adit is fairly dry except at portal. Some sphalerite seen in ore in bin but none in the tunnel was seen.

O. P. Warner, Supervisor of Conats, U. S. Navy Yard, Bremerton Wash,
supervised construction of metal parts + their erection. Supervised 40% of
the building const. on its ground.

C. Freston, Roseburg, worked during foundation laying and as consultant
during 2 months, May + June 1940.

C. A. Bushnell, 45 yrs. practice as engr. of const., partly with U. S. gov't, partly
under contract work in Middle West, Alaska, + Wash., supervised const. at
all times; practicing engr. for last 20 yrs. in Wash.

Equipment was designed + constructed at Bremerton, Wash. by

Frank Van Klee under suggestion for O. E. Walling.

Plant designed + const. in Wash.

Zinc Mine (Plat - Eureka)
~~Consolidated~~

7/25/58'

Tiller Drew.

Pressler was retained. Drilled in
1957. Jim Graham of G.P. may be a
part owner. Talk to Pressler first.

Report by Treasurer on file.

Jim Graham, G.P.

Red Butte Quad. Moe Platt, Redwood
Hotel, Leaser

4/10/59

Zinc Mine, Tiller-Drew area, Douglas Co.
 Sign on door ^{of main camp building} says:

"To Moe Platt and to whom it may concern —
 You and all persons concerned are hereby
 notified that we claim a possessory lien
 against all of the personal property located
 on what is known as the Palladium
 Gold Mine Premises"

15th May 1958

James W. Graham
 George Clark
 Margaret Clark
 Giamon M. Hatcher

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Conclusions: Mineralization is similar to that at Bohemia, ^{except} ~~shallow~~ copper must be subordinate to lead, zinc. This prospect has no significance so far as the copper project is concerned. Furthermore, outcrops are few and poor.

Report by: Koch.