

State Department of Geology and Mineral Industries

702 Woodlark Building
Portland, Oregon

SANTIAM COPPER MINE (gold, silver, copper)

North Santiam district

MARION COUNTY

Known at various times as:

Freeland Consolidated (dissolved 1914)
Electric Mining and Smelting Co. (dissolved 1914)
Consolidated Copper Mining and Power Co. (1914-1925)
Lotz and Larsen Mine (1916-1925)
Northwest Copper Co. (1926-1930)
Rainbow Mine (lessees 1941)

Owners: Frederick B. Andrews, Lake Grove.

Location: On both sides of river, in W $\frac{1}{2}$ sec. 19, T. 8 S., R. 5 E.

Area: 12 claims, now called Santiam numbers 1 to 12. Old names include Minnie E. or Northwestern (now Santiam No. 2), May Day (now No. 8), Shilo (now No. 10), Lower Granger (now No. 11), Five Spot (now No. 12), as well as the Josephine, Chief Justice, Go Devil, etc.

History: In 1903 Stafford reported that the Freeland Consolidated had 300 feet of tunnel, crosscuts, and drifts, with a shaft 84 feet deep.

Parks and Swartley (p. 69) reported that the Electric Mining and Smelting Company's claims and the Freeland Consolidated Company's ground, about 25 claims in all, had been combined in 1914 under the Consolidated Copper Mining and Power Company, and leased to Lotz and Larsen in 1916. At this time 210 feet of drifting had been done on the Minnie E. or Northwestern vein at the river's edge. Much of the mining and development was done in 1915-17, and two carloads (138 tons) of ore and some concentrates from a small mill were shipped in 1923, 1924 and 1925. By 1926 the property was in the hands of the Northwest Copper Company, and a detailed sampling job was done by the Bureau of Mines, and a report written by W. J. Elmendorf. Under his direction the 96-foot winze in the north tunnel was sunk in 1927, and 3 tons of sorted ore was shipped in 1928.

In 1930 the mine was taken over by the Santiam Copper Mines Co., and lessees shipped 14 tons of bulk ore in 1940. A small mill was built and between May and September, 1941, seventy-three tons of concentrate was shipped from the mill. Since that time the property has been idle. An abstract of the smelter returns taken from originals and photostats, is as follows:

SHIPMENTS OF ORE AND CONCENTRATE TO THE
TACOMA SMELTER

<u>Date</u>	<u>Tons (dry)</u>	<u>Copper (%)</u>	<u>Silver (oz)</u>	<u>Gold (oz)</u>	
10-9-23	20.666	10.16	2.6		} sorted ore, No. 1 stop
10-17-23	29.629	11.36	3.49	.01	
8-26-24	31.655	3.97	1.29		} crude ore, No. 2 stop
9-26-24	39.934	4.68	1.60		
9-9-25	4.698	20.05	5.17		concentrates
9-9-25	11.479	6.52	2.10		crude ore, north tunnel
7-30-28	3.283	14.54	4.66	.01	sorted ore
4-25-40	14.547	7.39	2.34	.01	bulk ore
5-29-41	3.926	12.68	3.12	.04) Concentrates (average returns from smelter \$28.76 per ton.)
6-17-41	4.760	21.62	6.37	.05	
7-3-41	5.325	23.18	5.43	.05	
7-19-41	5.289	22.88	6.03	.06	
8-1-41	5.491	25.40	6.04	.04	
8-12-41	5.416	23.41	6.60	.04	
8-23-41	5.885	17.34	5.10	.04	
8-27-41	5.795	16.39	4.45	.04	
9-10-41	5.603	18.28	5.16	.04	
9-26-41	5.144	19.62	4.63	.03	
10-9-41	5.785	16.02	3.46	.02	
10-18-41	8.400	11.33	2.99	.04	

Development: Most of the work has been done on the Minnie E. or Northwestern vein, on both sides of the Little North Santiam River and nearly all the production has been from the main drift, on the south side which follows the vein approximately S. 43° E. for 1000 feet, the last 100 feet being dug in

1941. There are 6 chutes and raises on three stopes, the first of which breaks through to the surface. Nowhere except at the extreme end of the tunnel is there more than 160 feet of backs, the average is closer to 100 feet.

The north tunnel has about 300 feet of drift, 100 feet of it on a vein branching off the northwest. Near the face of this branch there is a 96-foot winze.

Geology: The Minnie E. or Northwestern vein strikes N. 43° W., except for 350 feet adjacent to the river. Dips vary from 50° E. to vertical, averaging about 70° E. Callaghan and Buddington describe the geology as follows:

"The country rock on the north side of the river is agglomeratic oligoclase andesite, and that on the south side is mainly porphyritic oligoclase andesite. Chalcopyrite is the principal ore mineral, but there are also subordinate pyrite, sphalerite, and an unknown white metallic mineral, visible only under the microscope, that contains copper, silver, bismuth, and sulphur.

Though ore minerals are sporadically distributed throughout the vein, there are four fairly distinct narrow ore shoots, as shown in plate 17. That in the north drift is 100 feet long and in some places 18 inches wide. A winze, now full of water, is reported to have exposed 14 inches of chalcopyrite 96 feet below the tunnel. In places the shoot contains three seams of almost solid chalcopyrite, each 3 inches wide, associated with quartz stringers and altered rock. The vein pinches down to 1 inch at the end of the drift. An assay map by W. J. Elmendorf shows an average metal content for this shoot of 4.47 percent of copper, 1.22 ounces of silver to the ton, and no gold for a width of 6 feet. A shoot at the portal of the drift on the south side contains only a small amount of chalcopyrite. The first 180 feet of drift has an average metal content of 1.25 percent of copper, 0.1 ounce of silver to the ton, and no gold, according to the assay map. A shoot nearly 200 feet long extending southeastward from a point 280 feet from the portal has been partly stoped. This shoot averages, for a width of 5 feet, 2.41 percent of copper, 0.75 ounce of silver to the ton, and a trace of gold. Another shoot about 80 feet long, extending southeastward from a point about 760 feet from the portal, has been partly stoped. The vein at the face of the tunnel consists of 4 to 5 inches of nearly solid chalcopyrite, 1½ inches of quartz with a little calcite, and 7 inches of gouge.

An open cut about 500 feet east of the main tunnel reveals a seam of chalcopyrite half an inch wide. Some open cuts and a short drift west of the mouth of Gold Creek show gouge seams and some pyrite but no appreciable chalcopyrite.

Several of the tunnels along Gold Creek are believed locally to be on the same vein. The Mayday or Santiam No. 8 tunnel, on the west side of Gold Creek about 1,700 feet north of the camp, follows a soft pyritic altered zone 6 inches wide N. 40° W. for 100 feet. The Josephine crosscut, about 100 feet south of the footbridge near the forks of Gold Creek, extends 65 feet to a vein that strikes N. 10° W. and dips 70° E. The vein consists of gouge seams in andesite with no appreciable sulphides. The Shilo or Santiam No. 10 drift, 300 feet up the west fork of Gold Creek from the forks, follows a seam of pyritic altered rock with quartz and calcite stringers for 215 feet, mainly N. 15° W. The Lower Granger or Santiam No. 11 is a short distance north of the Shilo. A crosscut extends 155 feet S. 65° W. to the vein, which is followed by drifts of 110 feet N. 10° W. to a cave-in and S. 5° E. to a face that reveals silicified rock with a few quartz stringers. Vein matter on the dump contains scattered pyrite, a few streaks of chalcopyrite, and a very little sphalerite. The Five Spot tunnel or Santiam No. 11, about 1,200 feet upstream from the Lower Granger, consists of a crosscut 275 feet long running S. 80° W. and a drift on the vein for 50 feet N. 3° E. The vein dips 60° - 70° W. and consists of a breccia of country rock with vuggy quartz veinlets and disseminated pyrite."

On the Little North Santiam River road, $\frac{1}{2}$ mile east of the Gold Creek bridge, and about 65 feet above the river level, in the SE $\frac{1}{4}$ sec. 19, is a tunnel running 270 feet N. 35° W., with four crosscuts, two of them 120 and 140 feet to the east and northeast, and two of them running 30 and 80 feet to the west. The country rock is grey andesite, with narrow vertical vein showing very little quartz and containing arsenopyrite, chalcopyrite, and malachite. A sample from the dump gave only a trace of gold and copper, and no lead, zinc, or silver.

References: Stafford, 04:57
Parks and Swartley, 16:69
Callaghan and Buddington, 38:95-97

Report by: J.E.A. July, 1945



STATE DEPARTMENT OF GEOLOGY
AND MINERAL INDUSTRIES

702 WOODLARK BUILDING
PORTLAND 5, OREGON

July 26th 1945

RECEIVED FROM F. B. ANDREWS, on loan, with
return upon demand, the following report:

Report on Property of Northwest Copper
Company, Marion County, Oregon, typescript,
by William J. Elmendorf, Mining Engineer,
Seattle, Washington, dated August 15th,
1926, in yellow paper binder.

Abridged copy of the foregoing, without
photographs, in blue binder.

STATE DEPARTMENT OF GEOLOGY
AND MINERAL INDUSTRIES

by

Chief Geologist

SANTIAGO MILL

2.5 TON COARSE ORE BIN

SCREW FEED

5' HARDINGE CONICAL BALL MILL

18" x 10' AKINS CLASSIF IN CLOSED CIRCUIT

7 CELL FLOAT UNIT

2, 3' x 6' FILTER PAPER W/ SUCK & BLOW

2.5 TON CONC BIN

ALL ELEC DRIVEN

MILL RUSTED AND IN VERY POOR REPAIR

POWER HOUSE

F M ALTERNATOR I/E TYPE

75 KVA

BELTED TO

900 RPM

WEST ELEC (GEA?)

3 PH

125 V 29 AMPS

60 KVA

900 RPM

480 V

60 KW

NO DIESEL TO FURNISH PRIME
POWER

80 PF

85 AMP (PEAK)

CHICAGO-PNEU 12x12 COMP
DIESEL DRIVEN

4x8' RECEIVER

AIR HOIST FOR RAISING ORE UP TO BOTA

SANTIAM MINE

N. SANTIAM DIST

Marion

STATE DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

ASSAY LABORATORIES

SAMPLE INFORMATION REQUESTED

Grants Pass

Baker

cont

The law passed by the Legislature, governing the free assaying and analyzing of samples sent to the State Assay Laboratories, provides that certain information be furnished the Laboratory regarding samples sent for assay, etc. A copy of this law will be found on the back of this blank. Please read the law carefully. Will you please fill in the information called for on the following blank, as far as possible and return the same to the nearest State Assay Laboratory along with your sample? If you have made out a blank, this copy is for your future use. Keep a copy of the information on each sample for your own reference.

Your name in full Frederick B. Andrews ✓

Postoffice address Rt. 1, Box 338, Sherwood, Oregon.

Are you a citizen of Oregon? Yes . . Date on which sample is sent . Sept. 3, 1946.

Name (or names) of owners of the property. . Andrews

Name of particular claim and date of location. Santiam Mine

Location of property or source of sample (describe as accurately as possible below):

(1) County Marion (2) Mining district . N. Santiam

(3) Township . 8.S. (4) Range . 5.E. (5) Section . 19 (6) Quarter Section . W 1/2

How far from passable road? 1/4 mile

For what minerals or elements do you wish the sample analyzed? . Au, Ag, Cu:

(Unless other minerals or elements are specifically named this sample will be assayed for gold and silver only.)

Type of sampling: Channel (length) Grab X Pipe

Report mailed Called for

IMPORTANT: A sample, to be of value, should be taken in an even channel across the vein from wall to wall. Its position in the workings should be marked and the width measured. Assays of unlocated samples, without widths, are of little value; they create little interest in the minds of experienced investors and engineers.

(signed) Frederick B. Andrews

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

Description

Sample Number	GOLD		SILVER		Copper		Total
	oz./ T	Value	oz./ T	Value	Percent	Percent	
P-5151	0.02	\$0.70	2.30	\$2.08	3.10%	\$8.77	\$11.55

Report issued

and filed