

History: It is reported that the property is in receivership, but that an arrangement has been made so that the mine may be worked. In August 1940 the property was inactive. Total production has been a few flasks.

Wells and Waters 34 describe the deposit as follows:

"On the main level porphyritic andesite occurs as a narrow strip about 17 feet wide, bounded on the south by volcanic breccia and on the north by a fault that brings it into juxtaposition with conglomerate. The porphyritic andesite here appears to be a fault block dropped into its present position. Volcanic breccia is also present in the sublevel, but only andesite is exposed on the top level. The fault, which has gouge about 1 foot thick, is normal and pre-mineral, but some post-mineral movement has taken place."

"Ore occurs in a shear zone in the porphyritic andesite, which strikes N.81° E., and is either vertical or dips at high angles toward the south. The ore occupies many closely spaced veinlets that are roughly parallel, though curving and branching in places, and also isolated short-gash veinlets. The veinlets range in width from a quarter of an inch, the usual width, to 6 inches and contain cinnabar, calcite, marcasite, and a little pyrite. Some radial fibrous chalcedony has also been seen. Some veinlets are composed entirely of one mineral, either cinnabar, calcite, or marcasite, but most of them contain two or more minerals and commonly show banding and crustification. Some of the larger veinlets consist of small angular fragments of andesite cemented by cinnabar, calcite, and a little marcasite. . . . Scattered specks of cinnabar occur in the wall rock. The tenor of the ore diminished gradually from the vein into the wall rock, and therefore the boundaries of the ore body are indefinite and must be determined by assay. At present the stoping width averages about 5 feet. The reported results obtained from retorting the ore in 1929 and 1930, together with amounts of cinnabar that are visible, indicate that parts of the lode as much as 5 feet wide may average from 1 to 2 percent of quicksilver. There is no indication that the end of the ore has been reached, and mining at greater depth as well as to the west along the fault should develop more ore."

Since the Wells and Waters report, some 400 tons of ore were stoped on the upper level and run through the furnace.

Equipment: Mine and mill equipment includes a Sullivan air compressor and tool sharpener; Atlas Imperial 80 hp. Diesel driving a 50,000 watt, 125 volt DC generator; blacksmith shop, drill sharpener, air hammer drills, mess hall, bunkhouse, bathhouse, etc., for a 20-man camp. Cars, track, etc.

Mill equipment includes a 50-ton ore bin; a revolving grizzly having 1 inch spaces; an Acme Road Machinery crusher, 9-3/4x14, run by a 20 hp. motor; a 30-ton fine-ore bin that discharges to a Gould Furnace, 30 inches x 42 feet, operated by a 5 hp. motor. Waste goes to the dump via conveyor. Gases from the dust collector go to a baffle box, then to iron pipe condensers, 12 inches in diameter and 20 feet long, then to another baffle box, and finally to tile pipe condenser and stacks.

Informant: Treasurer

Reference: Wells and Waters 34.

Schuetz 38:124.

CHIEFTAIN MINE (Gold, copper, zinc)

Tiller-Drew Area

Location: On South Myrtle Creek in sec.20, T.29 S., R.3 W.W.M., 12 miles by gravel road from Myrtle Creek.

Wells 31-32:57-61 gives the following description:

Metagabbro: Except a small body of dacite, the only rock exposed in the area is metagabbro. As described by Diller, this rock throughout the greater part of its mass has a granitoid texture. Its original pyroxene has been changed into hornblende or chlorite; less commonly the original lime-soda feldspar has been changed to an aggregate of quartz, muscovite, and epidote or kaolin. Although in much of the rock these changes are more or less complete, there are large masses that have especially fine-grained and somewhat diabasic textures in which pyroxene and feldspar remain practically unaltered. The relative proportion of feldspar and pyroxene is in general nearly the same, the feldspar being somewhat more abundant than pyroxene, but in a few places the rock is made up almost exclusively of either feldspar or pyroxene. Quartz is a rather abundant primary constituent in a few places.

"The rock in the immediate vicinity of the mines is coarse-grained, and its feldspar and black minerals are present in about equal amounts. Under the microscope the feldspar, which is bytownite, is seen to be but slightly altered, though the pyroxene or hornblende has been largely altered to chlorite.

"Diller believes that the metagabbro is intrusive into the Myrtle formation and hence must be younger than that portion of the Cretaceous.

"The only structural features observed in the metagabbro are the east-west fractures, which are followed by the veins, and faults of small displacement that range in strike from northeast to northwest and have offset the veins. Both the fractures and faults are characterized by steep dips. Several of the veins in greenstone to the south - for instance, those of the Greenback, Daisy, and Corporal G. Mines - strike approximately east and have in some places been offset by faults that strike from northeast to northwest.

Dacite: Dacite crops out about 3 miles a little west of north of the Chieftain mine. It is fine grained and contains phenocrysts of quartz. The groundmass has been completely altered to quartz and sericite. According to Diller, two varieties of dacite occur near the town of Myrtle Creek. One is decidedly porphyritic, with well-developed crystals of quartz and feldspar, and the other is nonporphyritic and closely resembles quartzite. The second variety is found, under the microscope, to consist of quartz and feldspar, largely plagioclase, with numerous shreds of hornblende. The groundmass of the first variety is similar but much finer grained. Diller states that the age of these rocks can not be determined but that some masses of them are apparently younger than the metagabbro and serpentine."

"According to Edward Law, the present manager, the Little Chieftain deposit was discovered about 1898 and developed by Armitage & White, who shipped some good ore. They sold it to Hamilton & Cramer, who did further development work and put it in a stamp mill some time between 1903 and 1905. The production to the end of 1905 includes about 1,000 tons of ore ranging in value from \$55 to \$175 a ton, which was shipped to the Tacoma smelter. Mr. Law obtained the property in 1928 and, after some development work, shipped 20 tons of ore running \$110 a ton in gold and silver. Since March 5, 1930, the property has been operated by a company called the Chieftain Mines (Inc.)".

"The Chieftain mine is on the west bank of Letitia Creek in the NW $\frac{1}{4}$ sec. 20, T. 29 S., R. 3 W. The lower adit is a few feet above the creek, at an altitude of about 1,100 feet. The accessible workings include a lower adit 330 feet long, an intermediate or "mill" adit 555 feet long, and an upper adit 80 feet long. The lower and mill adits are connected by a raise along a stope. There are other workings, which are now caved, including an old drift on the lower level, which extended beyond a fault mentioned below.

"The mine is on a quartz vein of variable width, which strikes S. 80° W. and dips 65°-75° N. This vein has been traced by discontinuous outcrops and surface float for a distance of 1 $\frac{1}{4}$ miles. The most easterly outcrop is at a short adit a few hundred feet east of the Chieftain mine; the most westerly outcrop is marked by two shafts on the Hall homestead.

"The lower and mill adits of the Chieftain mine explore the vein for a length of about 640 feet and to a maximum depth of 170 feet. So far as explored the vein consists of lenses and discontinuous stringers of quartz. These lie in a shear zone bounded by slickensided walls that are from less than a foot to about 4 feet apart. Locally the walls are lined with a thin layer of gouge. In some places the zone is composed entirely of quartz; in others it is mostly altered rock. The wall rock is cut by many veinlets of quartz and contains a little pyrite near the vein. In general, however, it is free from sulphides. Horseshoes of rock included in the vein are largely altered to sericite. The vein itself has been strongly sheared, as is shown by the strain shadows and many microscopic fractures in the vein quartz as well as by the ease with which it shatters.

"Irregular grains, patches, and streaks of sulphides in places form as much as 10 percent of the vein. Coarsely crystalline pyrite is the predominant sulphide. Chalcopyrite and sphalerite occur in subsidiary amounts. The pyrite is mostly bright, though in part dull and dirty, probably owing to granulation. Chalcopyrite forms small patches near the pyrite but is rarely associated directly with it. Sphalerite is likewise commonly associated with the chalcopyrite.

"Under the microscope the sphalerite is seen to contain blebs and veinlets of chalcopyrite. Sylvanite and petzite (tellurides of gold and silver) occur as small irregular patches or threads in both the chalcopyrite and sphalerite and here and there by themselves in the quartz. Neither was found, however, in the pyrite. Petzite contains a smaller amount of tellurium than sylvanite, and the silver content of both is variable; in the specimens from the Chieftain mine it is low, probably less than 25 percent. No free gold was seen. During the period of mineralization the deposition of quartz was continuous. Pyrite is the oldest sulphide. Sphalerite was deposited next and was succeeded by chalcopyrite. Sphalerite was deposited next and was succeeded by chalcopyrite. Sylvanite and petzite were deposited last. The tellurides are almost exclusively associated with chalcopyrite and sphalerite, and the abundance of these sulphides, which are readily seen, is therefore some indication of the value of the ore.

"The vein is cut 300 feet from the portal of the main level by a fault zone that strikes due north and dips at a high angle to the west. It has produced a horizontal displacement of 80 feet distributed over a series of slips. Elsewhere some horizontal faults have displaced the vein a few feet.

"On the upper level, as well as in an old glory hole that extended down to it, the vein is a typical vuggy iron-stained gossan, and some of the ore in its oxidized portion was probably free milling. On the mill level the vein has been completely oxidized to the east of the fault. West of the fault it shows only slight oxidation and on the lower level none.

"The character of the vein and the minerals described indicate that the deposit falls into the mesothermal type of Lindgren. Though the sulphide minerals that carry the gold are abundant in spots they are not concentrated in definite shoots but are distributed irregularly throughout the vein. Much of the quartz now showing carries considerable sulphide, and the vein on the main level beyond the fault is well mineralized. From these facts it is reasonable to assume that the ore continues in depth and that within the limits imposed by the size and tenor of the vein a considerable tonnage can be mined."

CONTINENTAL MINE (Gold)

Tiller-Drew Area

Wells 31-32:57-61 describes the property as follows:

"The Continental deposit was discovered in 1897 or 1898 by a man named Chancy, who sold it to Kruse & Stewart about 1903. They operated it for about six years. In 1919 the mine was purchased by W. C. Bates, the present owner. In 1931 the mine was under bond and lease to Larsen & Elliot. The production is not definitely known. Evidence given in a law suit claims that ore worth \$168,000 has been mined".

"The Continental mine is in the NW $\frac{1}{4}$ sec.20, T.29 S., R.3 W. Willamette Meridian, on a very small stream that flows into South Myrtle Creek. It is located on the same vein as the Chieftain mine but about 1,500 feet to the west and a few hundred feet higher. The dumps are large and indicate that considerable work has been done. Some of the old workings are caved or filled, but about 1,000 feet of tunnel besides two raises and some of the stopes are still accessible.

"The vein has been explored along the strike for 500 feet and for a vertical distance of 250 feet. To the west the workings stop at the property line. The vein in general strikes east and dips 60°-75° N. In width it ranges from less than a foot to about 4 feet. There has been very little displacement of the vein along faults that strike northeast and are vertical or nearly so. The character of the vein and the kind of mineralization are the same as in the Chieftain mine.

"Two shafts have been sunk on this vein west of the Continental mine, on the Hall homestead, but both were caved when visited. Some vuggy iron-stained pieces of quartz were found around the collars of the shafts. East of the Chieftain mine there is a short adit on what is probably the eastern continuation of this vein. The quartz showed only a few scattered specks of pyrite.

"Mining in the past has been limited to taking out the vein material that yielded a profit. As the sulphide minerals are irregularly distributed the stopes were irregular in outline. The whole width of the vein was mined".

Reference: Wells 31-32:57-61.