STATE OF OREGON
DEPARTMENT OF GEOLOGY & MINERAL INDUSTRIES

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OREGON'S MINERAL INDUSTRY

This issue of the Ore.-Bin reviews mineral industry activities in the state for the past year and summarizes present conditions.

Judged by possible future effects in increasing the value of the state's mineral production, there were two very important happenings in the industry in 1942. These were the starting of construction of concentrating plants for the treatment of chromite sands in the Bandon-Marshfield area, and the extensive exploration campaign begun and prosecuted by the Freeport Sulphur Company on the nickel deposit on Nickel Mountain near Riddle in Douglas County. Both of these projects are dear to the Department's heart since, in a measure, they both represent successful culmination of long-continued efforts of the Department to secure development of two of the state's important mineral resources by experienced operators.

In October, 1942, all gold mines, both lode and placer, were closed by War Production Board order. Only those very small operations which handle not more than 100 tons per month in the case of lode mines, and not more than 100 yards per month in the case of placers were allowed to continue. Any activity that rates as a "mining operation" must produce in greater quantities in order to carry on. The stated object of this closing order was to conserve critical materials needed in mining of war minerals and to divert labor from a "non-essential" industry to "essential" industries.

While the Department felt (and it has since been demonstrated) that the conditions of the order were unnecessarily strict and that it would fall far short of accomplishing what it was intended to accomplish, the fact remains that Oregon's four-million-dollar gold mining industry was anesthetized for the duration.

In the field of nonmetallic mining, most of the operations which could obtain adequate labor and operating materials worked at capacity throughout the year. Construction for war purposes was at a high level and consumed large amounts of Portland cement, sand, gravel and crushed rock. Maintenance work on roads was considerably below normal due to priority difficulties of road contractors. This condition caused a decrease in production of road metal.

The Department had originally planned to make a survey of the state's nonmetallic mineral production for 1942. But, because of the deluge of questionnaires sent to producers by Governmental agencies, the Department decided to refrain from adding another request for information to the already groggy operators. Therefore an exact estimate of the value of nonmetallic mineral production may not be made at this time. Such value of production probably exceeded $6,000,000 in 1942.

Present metal mine production is confined to quicksilver, chromite, manganese and antimony deposits. A relatively small amount of gold and silver is being produced by two

properties in eastern Oregon which are allowed to operate because their shipments of ore to smelters are valuable as siliceous flux.

During 1943 a large increase in value of chromite production will result due to chromite sand operations. It is likely that there will be a greatly increased antimony production from both northeastern and southwestern Oregon. Some new quicksilver production will come in but output from some of the older properties will probably fall off, so that the amount produced in 1943 will be about the same as last year.

New base metal exploration is possible and highly desirable, but present Government regulations and tax policies are not conducive to new mineral developments by experienced operators.

Although WPB is eager to increase copper production, the RFC seems to be reluctant to make loans on small copper prospects.

Nothing substantial in the way of production may be expected from Oregon zinc properties until smelter facilities are available in the Pacific Northwest.

Mining labor has been insufficient in quantity and unsatisfactory in quality due to proximity of high-pay jobs in the shipyards and logging industry. There has been no base metal operation, other than quicksilver, in the state since the closing of the H. & H. mines in the Bohemia district as a result of inability to maintain satisfactory labor.

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PROGRESS REPORTS

Western Oregon

Chromite

A number of properties in southern Oregon produced chrome in 1942, and sold it to the Metals Reserve Company ore purchasing depot at Grants Pass. Brief descriptions follow:

Lloyd Lewis opened the Mount Sexton chrome property north of Grants Pass. Some ore was shipped.

Sherman Smith mined from several localities; most of his ore came from the deposit on King Mountain.

J. N. Grisson worked the Deep Gorge deposit on the Illinois River at the mouth of Briggs Creek.

Fisher and Anderson took ore from the Brown Scratch property on Briggs Creek.

George Gallaher worked the Van Gwyn located near the Brown Scratch.

McClung and Krueger opened the Illinois Chrome mine on the west side of the Illinois River.

Hammer and Neubert took out ore from the Black Beauty just across the river and below the Oregon Chrome mine. The owners of the Black Beauty state that they have uncovered more ore at a lower elevation. To date, it has not been necessary to use a single stick of powder in production of ore.

J. E. Kennedy mined low-grade ore from the Griffin property on the Illinois River near the mouth of Deer Creek and delivered several tons of concentrate to the stockpile.

Baker Brothers and Jones brought in ore from the Defense mine south of Mount Ashland.

Oregon Chrome mine near Oak Flat on the Illinois River is under lease to William Robertson who delivered ore to the stockpile in 1942 and continued ore shipments during January, 1943.

Eugene Brown, Grants Pass, stockpiled ore from the High Plateau at O'Brien before the winter closed the Oregon Mountain road. He moved this ore to the Grants Pass Metals Reserve during November and December. Brown has been one of the most consistent producers. His road was supposed to have been treated with winter maintenance by the Forest Service but confused instructions issued held up this maintenance until it was too late for this winter season. However, development work is in progress at the mine, pending early opening of the road. While the High Plateau is located over the line in California, all business connected with the operation is done in Oregon.

Drilling by the U. S. Bureau of Mines at the Sourdough mine on the north fork of Smith River was discontinued late in December. Ralph Mason, Grants Pass, manages the property for Rustless Mining Corporation.

The Pacific Company, which leased the Sordy property on Chrome Ridge in the Briggs Creek district discontinued operations for the winter. Plans are being made for resuming shipping as soon as snow conditions permit. John Day of Medford is president of the company and R. B. McGinnis is superintendent.

Crescent-Pacific Company, formerly operators of a dragline floating dredge on the Applegate River, have taken over the Hicks chrome property in California west of the High Plateau. Some ore was shipped during 1942, and development work is progressing during the winter months.

Coquille Stockpile: Delivery of chrome ore to the Coquille stockpile was not up to expectations. Kelland, Coy, and Rockard delivered ore from the White Rock property near Powers and one or two truckloads came in from deposits near Carpenterville. There have been numerous promises that shipments would be made.

Chromite sands: Construction of concentrating plants to treat the chromite sands of the Coos Bay district is progressing. The Krome Corporation will start producing primary concentrates within a few weeks. Humphreys Gold Corporation is constructing a primary concentrator near the Lagoons, north of Bandon. Porter Brothers have been carrying on extensive testing work in a treatment plant at Bandon. Defense Plant Corporation is financing a secondary concentrator located at Beaver Hill, northwest of Coquille, to treat concentrates from the various primary milling plants.

Quicksilver

The continued interest in quicksilver as an essential war metal is reflected in the prospecting, location, and examination of quicksilver deposits. Several old properties are being re-opened, and new occurrences have been found.

The Mountain King property on the divide between Sam's Valley and Evans Creek, has been explored and a 25-ton Herreshoff furnace was installed in 1942. Some quicksilver was delivered to the Grants Pass Stockpile.

The Buena Vista and Maud S. mines, north of Tiller on Deadman Creek, are reported active. The Buena Vista installed a furnace plant several years ago.

Work at the War Eagle mine, north of Beagle, is confined to the coal vein in which cinnabar is found. An attempt is being made to separate the coal from the cinnabar by flotation. As yet, no work has been done on the Rainier vein.

The Pacific Syndicate which owns the Webb-Taynor property started production from a Herreshoff furnace in 1942.

The Roxana group, north of the War Eagle, is being opened by a group of California men. Cinnabar showings are found over a wide area.

Milton Murphy and E. S. Noe have been developing their claims in the Rainbow group, on Brush Creek, near Steamboat Mountain, in the upper Applegate area, and have entered into a

contract with Horse Heaven Mines, Inc. A 7000-foot access road has been built to the workings. This mineralized zone appears to extend northeastward into the head of Palmer Creek where cinnabar has been found on the Davisson claims.

Antimony

Emerson Merrick of Medford, Oregon, is operating the Blue Jay Antimony property on the Applegate River. Stibnite in kidneys that will permit shipment of 50 percent ore is mined from a persistent zone. Shipments are made from Medford. At present, development work is being carried forward and additional ore has been exposed.

Antimony prospects on Kanaka Gulch and Grouse Creek have been investigated but insufficient work has been done to encourage development. Specimens of high-grade ore are found. The Lowry Antimony produced during the last war but the high-grade lenses were mined out. To date, no new lenses have been found.

Nickel

The Freeport Sulphur Company is extensively exploring the nickel silicate deposits of Nickel Mountain near Riddle. An eight-mile access road to the property has just been approved and the Public Roads Administration is expected to start construction in the immediate future. The exploration of the deposit was started soon after the shortage of nickel developed in the war production program. If this property gets into production, it will be the only nickel mine in operation in the continental United States.

The ore being prospected is nickel silicate called garnierite- a greenish mineral that resembles some oxidized copper ores. Localities other than Nickel Mountain have been found southwest of Grants Pass along the west side of the Illinois Valley from Eight Dollar Mountain to the Oregon line. The ore is secondary and frequently is found in the red soil which overlies peridotite and serpentine areas.

Copper

The present shortage of copper has stimulated interest in southern Oregon copper deposits. Mines having a record of production include the Silver Peak mines, near Riddle; the Almeda, near Galice on the Rogue River; and the Queen of Bronze-Waldo-Cowboy group near Takilma. The Mammoth Lode is being explored near Railroad Gap, north of Trail. There are rumors concerning the opening of various other copper properties but as yet no actual work has been done.

The H. & H. mines which brought into production the Champion and Musick mines of the Bohemia district in Lane County were obliged to shut down both underground work and 100-ton concentrator because of inability to secure and hold a sufficient labor supply. Mine labor quit for the more highly paid jobs at shipyards, cantonments and logging camps. The H. & H. mill concentrates contained copper, lead and zinc, as well as silver and gold.

Manganese

Manganese deposits of southwestern Oregon were described in Department Bulletin No. 17. Many of them consist principally of rhodonite with superficial amounts of black oxide. The coastal region shows considerable promise of small production of low-grade ore. Shipments were made from the MacAdams property east of Langlois during 1942 and from a property east of Gold Beach.

Surface exploration by trenching was done at the Tyrrell deposit northeast of Medford in the Lake Creek area, and plans were made for further development.

Iron

Interest has been shown in iron ore deposits, either for use in the sponge iron pilot plant at Cascade Locks, or as high specific gravity material for ship ballast. There are reports that the Tolman iron property, north of Gold Hill, will be worked for ballast

material, and it has been considered as a source of magnetite for sponge iron.

Gold

Gold operations were halted by the WPB order in October, 1942. However, prior to that time, most of the larger lode mines had discontinued production because of priority and labor problems. The several dredges also closed down.

Some of the gold operators have been getting into strategic mineral production but generally speaking, it is doubtful if the gold mine closing order has materially benefited the strategic minerals program. Men employed at the time of the closure were either too old to work in the larger mines in other areas, or they were not experienced in underground work. Often placer miners are prejudiced against work in underground mines. At the same time the order has worked considerable hardship on the small-mine operators, especially the placer miners who are limited to mining 100 yards of gravel a month.

Limestone

Southern Oregon limestones are noteworthy for their high calcium and low magnesium content. Many of the deposits are low in silica and analyses of 97 to 99 percent $CaCO_3$ are not uncommon. Washington Brick & Lime Company's quarry and kilns on Williams Creek have been producing high-grade chemical lime. Pacific Portland Cement Company's quarry on Marble Mountain has produced limestone for cement and paper mill use. Limestone was produced from the Beeman quarry on Kane Creek.

A much greater quantity of limestone should be used on Willamette Valley farms, and there is a shortage of industrial lime in the Portland area. Lower railroad freight rates out of Grants Pass would be a great stimulus to this industry.

Coal

Some interest was shown late in 1942 in the coal of the Medford area. Production was contemplated for Camp White use and to relieve the expected shortage of fuel, particularly fuel oil, for domestic use. The Camp White requirements called for a much larger output than could be obtained from the Medford coal properties. While the Medford coals are "dirty", beneficiation would produce a product that should have a local market, at least.

The Southport or Flannigan coal mine southeast of Marshfield was leased to the Loritan Investment Co. of which Paul Murphy, Oswego, is president. Production has been stepped-up to over 75 tons a day. A further large increase is planned. The coal is of sub-bituminous grade. The mine has been worked consistently on a small scale for many years.

Silica

The quartz quarry and silica plant of the Bristol Silica Company operated continuously throughout 1942 and so far in 1943. The rock is exceptionally pure silica and tests have shown its usability for metallurgical purposes. When quarried, it readily breaks into smaller sizes without excessive fines. Until recently, principal production has been for chicken grit, but shipments of metallurgical flux are increasing.

Clays

Use of brick in the construction of Camp White and Camp Adair has benefited the southern Oregon brick industry materially. In southern Oregon, the Klamath Falls Brick & Tile Co. has had a part in this production.

At Hobart Butte, Lane County, the Willamina Brick Co. quarried several hundred tons of refractory clay a month during 1942. The clay was shipped to Willamina for processing into fine brick. The U. S. Bureau of Mines is drilling this clay deposit to determine the quantity available for possible alumina manufacture. Similar drilling was done near Molalla, in Clackamas County, in the Ellis clay property. Department Bulletin No. 6, "Preliminary Report on some of the Refractory Clays of Western Oregon" by Hewitt Wilson and Ray C. Treasher, published in 1938, brought these deposits to the attention of the Bureau and formed the groundwork for the investigations.

Eastern Oregon

Chromite

The Seneca ore purchasing depot of the Metals Reserve Company received chromite shipments from several properties in the chromite area south of Canyon City during the 1942 season.

Both the U. S. Geological Survey and the U. S. Bureau of Mines made investigations in the area.

Anthony Brandenthaler made some shipments of chrome which were delivered at Baker and were sampled and assayed by the State Department analyst under an arrangement with Metals Reserve Co. One shipment was made of float material found at the Winterville Placers near Whitney. Another shipment was made by Brandenthaler from a chromite deposit near Unity.

Quicksilver

Horse Heaven Mines, Inc., in northeastern Jefferson County continued to operate throughout the year and is the second largest producer in the state. During the summer of 1942, geologists of the U. S. Geological Survey mapped the deposit and made recommendations for further exploration.

In the Ochocos, Crook County, Cinnabar Mines, Inc., which controls the Number One and Blue Ridge Mines, installed a Gould rotary furnace. Some quicksilver was produced but it was found necessary to carry on development work in order to get an additional ore supply. The No. 1 shaft was sunk an additional 62 feet from the 100-foot level and drifts are being extended from this shaft to get under the ore shoots which had been discovered in the Blue Ridge Mine and which had been reportedly only partially mined out. The drift easterly from the No. 1 shaft is reported to have encountered the expected ore shoot and to have found ore of anticipated grade. Ray Whiting is superintendent.

The Mother Lode Mine, owned by R.F.C. and leased to Gilkey Bros., was active during the summer and fall of 1942. Underground exploration was done and some surface ore concentrated in a log washer.

The Taylor Ranch Mine produced early in the year. Work was suspended because of the need for further exploration in order to get an ore supply. This property changed hands in the summer of 1942.

Eickemeyer Bros., owners of the Maury Mountain Mine, obtained an R.F.C. Class C mining loan and drove a development tunnel for the purpose of draining some old development openings. This work was designed to open new ground for mining.

In southeastern Oregon the Bradley Mining Co. continued to mine ore at the Bretz mine and to furnace it at the Opalite mine.

Antimony

The Gray Eagle (Kohler) mine, near Baker, has shipped a car of low-grade antimony ore to the Midvale Smelter, Utah, and a car of high-grade to the Texas M & S Co., Laredo, Texas. These are the first shipments for 1943. During 1942, twenty-five tons of high-grade was shipped to Texas and 105 tons of unsorted ore to Utah. Recent development has shown a substantial tonnage of milling-grade ore in sight and plans are being made for installation of a small mill. Engineers of the United States Bureau of Mines are expected to examine the property in the near future in order to study the feasibility of a drilling program, since there are good indications of additional ore shoots on the vein. The ore is chiefly antimony oxides. Operations are under the direction of Mr. Smith of Boulder, Colorado, who has acquired an interest in the property. Mr. Pat O'Brien, Baker, Oregon, is owner.

Some other stibnite occurrences are known, notably in the Anthony Lakes district, but there has been little or no recent activity in prospecting there.

Tungsten

Some prospecting was done for scheelite in the Cliff mines east of Baker.

The Department mapped the geology of the Chicken Creek locality (approximately 175 sq. miles) where small stringers of scheelite occur sparsely in the granite of the area and where scheelite is known to be present in the placer gravels of Chicken Creek, formerly placered for gold.

Copper

Diamond drilling of surface croppings above the old glory hole and active underground development is being pushed by Cooley Butler on the old Iron Dyke mine, copper producer, at Homestead, Oregon. The development tunnel has already intercepted the shaft which is being dewatered, and has penetrated the ore body beyond for considerable distance. Present plans include bringing the assay office and various pieces of additional equipment here from their mine, the Scotia, in Grass Valley, California. The Scotia, being a gold mine is now closed. If sufficient ore is developed at the Iron Dyke - and the prospects are encouraging to date - a new mill will be designed and built near the tunnel entrance at Homestead. Fred Kalenborn, geologist for the Butler interests, is in charge of the work.

The Carnahan copper property on the Snake River north of Homestead, was reported to have been investigated and that exploration was planned.

The area surrounding the junction of the Imnaha and Snake Rivers containing copper occurrences was investigated by the Department during the summer of 1942. The copper veins in this area are small and in general quite low-grade. A G.M.I. Short Paper describing the ore deposits will be issued by the Department in two or three months.

Gold and Silver

The few gold lode mines were affected by the War Production Board closing order, but in general priority regulations and lack of an adequate labor supply discouraged lode mining even before the order was issued. The largest dredge operations, however, were in eastern Oregon and the shutting down of these was a blow to several communities. The largest of these placer operations were the Sumpter Valley Dredging Company, Porter Bros. Dredging Company, the Sunshine Mining Company, Burnt River Division, and the Western Dredging Company. The Ellis Mining Company, with holdings consisting of several of the famous old gold mines in the Borne district, continued shipments of ore to the Tacoma smelter until snow closed the road. Shipments will be resumed when the snow conditions permit. The mine is allowed to operate because of the value to the smelter of shipments as siliceous flux.

The Oregon King mine in Jefferson County, operated throughout the year and shipped in carlots to the Tacoma smelter and the International smelter at Salt Lake City. The silver content of the ore is of greatest value, but gold is also important. The ore contains small amounts of lead and copper. A mill was built at the property in 1942. This property also is allowed to operate because of the value to the smelter of its ore as a siliceous flux.

Some leasers shipped a small amount of siliceous gold ore from the Cougar Independence mine near Granite.

Limestone

The Oregon Portland Cement Company quarry, at Lime in southern Baker County, operated at capacity throughout the year. Most of the output went into the manufacture of Portland cement, but some stone was used in the Willamette Valley as agricultural stone. Some 20,000 tons of high-grade material was shipped to the sugar mill at Nyssa, and about 10,000 tons was sold to the sugar mill at Nampa, Idaho. The Oregon Portland Cement Company has kilns both a Lime and at Oswego near Portland.

Diatomite

The only large operation for production of diatomite was at the quarry of the Oromite Company at Lower Bridge west of Terrebonne on the Deschutes River. This company ships a high-grade processed material used mainly as a filter-aid.

Pumice

Some shipments of lump pumice were made from deposits south of Bend. Pumice brick and tile, light-weight construction materials, were manufactured by two companies.

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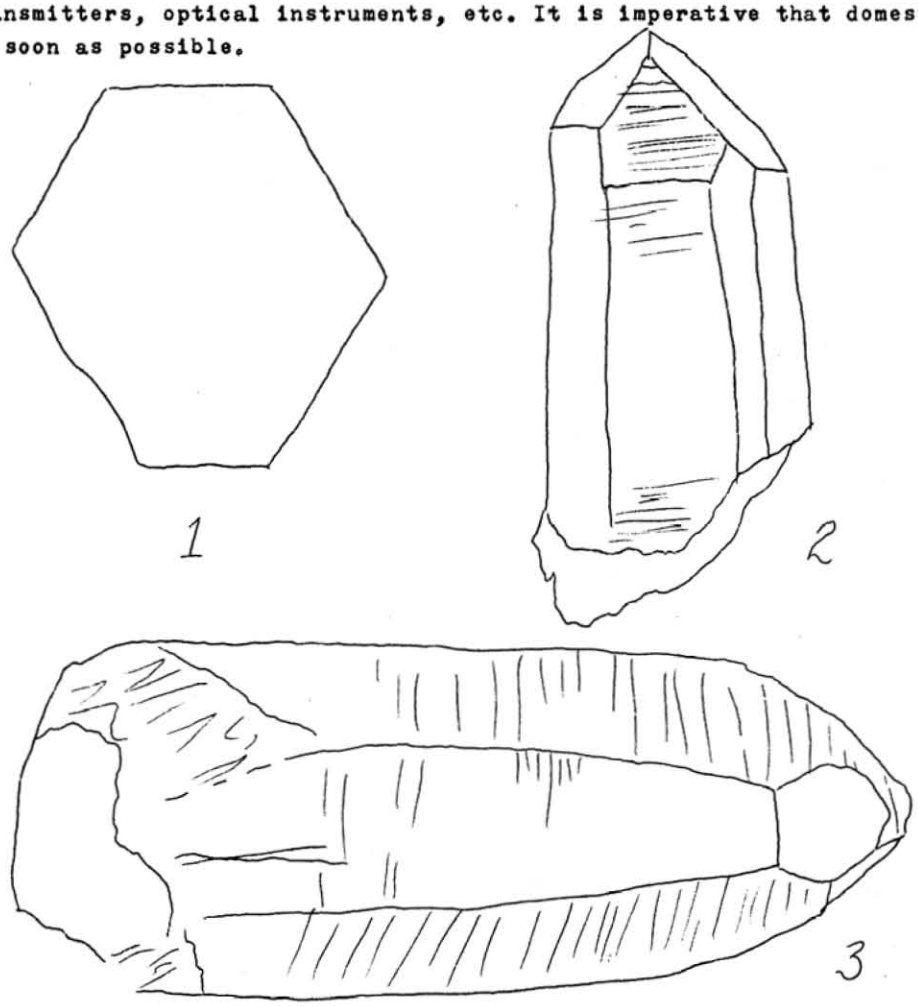
ROCK CRYSTAL WANTED

Quartz crystals as illustrated below are urgently needed by war defense industries for radio transmitters, optical instruments, etc. It is imperative that domestic sources be found as soon as possible.



1. Section sawed from middle of crystal showing six-sided form.
2. Smallest size desired (½ pound). 3. Ideal size single crystal.

Material to be used must be perfectly transparent and free from flaws, fractures, inclusions and color, and not smaller than crystal No. 2. No. 3 crystal is an ideal size, but crystals much larger can be used. CAUTION! Even if crystals found are transparent, they still cannot be used unless they possess certain electrical and optical properties that can only be determined by laboratory tests. Colored crystals on the ground surface often indicate the presence of clear quartz underneath. If you find these crystals on your property, or know of property on which they are found in quantity, write at once giving full details. Two firms have been appointed by the Metals Reserve Co. as official agents for Oregon, and are equipped to test crystals for the qualities needed. They are:

(1) Radio Specialty Co., 403 NW 9th Ave., Portland (See Mr. Dillard or Ben Strohbach).
(2) Sentry Crystal Co., 206 W. Washington St., Portland (See Ray H. Rosenholm).

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