

WYOMING MINING - 1954

by
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INTRODUCTION

During 1954, interest in Wyoming mineral deposits attained a new high. Much of the activity has been directed toward the exploration and development of newly discovered uranium prospects, but increasing interest has been shown in selenium, lithium, and the rare earth minerals.

Three metal mines were active during 1954; the Sunrise and Good Fortune iron mines in Platte County, and the Carissa gold mine in Fremont County. A fourth was under development.

At present the most important non-metal production is bentonite, but the output of trona and sulphur continues to increase.

METAL MINING

Gold. - During the past year renewed gold mining activity was initiated in the Atlantic City-South Pass district. The Carissa mine, formerly the State's largest producer, reactivated operations in July, 1954, after a four-year lapse. The operators were reported to be shipping one bar of gold per week.

The Duncan mine, near Atlantic City, has been under development for several years. During the last year the operators sank a ventilation shaft which opened up a new gold-tungsten mineralized zone. At present they are installing a new flotation mill and hope to be in production sometime during the latter part of 1955.

Iron. - The Colorado Fuel and Iron Company mine at Sunrise, Platte County, continued to be the State's largest producer in the metallic field. It is reported that 470,000 tons of iron ore were shipped during 1954; the production being about 30 percent less than in 1953.

The operators of the Good Fortune mine, which was reactivated in 1952, reportedly did no mining in 1954, but some ore was shipped that had been stock-piled on dumps.

Manganese. - Manganese deposits in Wyoming have been known for many years, but little development has taken place since most of them are small and too low grade to be shipped as run-of-the-mine ore. During 1954, however, limited production of manganese on an experimental scale occurred in Albany and Crook Counties.

Copper. - The old Copper King mine, 22 miles west of Cheyenne, continued development work through much of 1954. In addition, some core drilling was done by the U. S. Bureau of Mines.

Titaniferous-magnetite. - The Union Pacific Railroad continued geological mapping, magnetometer surveying, trenching and sampling of the large titaniferous-magnetite deposits at Iron Mountain, northwest

of Laramie. As a result of this exploration work, several new ore deposits were added to the known reserves. In addition, recent ore dressing tests on the lower-grade ores indicate that high-grade concentrates can be made easily and cheaply.

Additional titanium occurrences have been reported from Sheep Mountain, west of Laramie, and other parts of the State, but it is too early to predict whether they are of mineable grade.

NON-METALLIC MINING

Bentonite. - In general the production of bentonite was slightly less than in 1953 with most of the mining near Moorcroft and Osage, Crook and Weston Counties; Kaycee, Johnson County; and Greybull, Big Horn County. Most of the activity was in mining and development, but several operators have installed additional milling equipment, and others have directed research towards new uses of bentonite, particularly in foundries and in the lining of irrigation canals.

Sulphur. - In recent years Wyoming has become an important shipper of elemental sulphur as a by-product of natural sour gas. During 1954, there were three plants in operation; at Worland, in Washakie County, and at Elk Basin and Silvertip in Park County. It is anticipated that production of sulphur will be greatly increased in 1955, since the Jefferson Lake Sulphur Company has recently completed construction of a new plant at Manderson, in Big Horn County, to recover elemental sulphur as a by-product of the sour gas production from nearby gas fields.

This plant, which has a capacity of 125 tons of sulphur per day, has been designed to permit the addition of more sulphur producing units at a later date. The entire sulphur production of the plant will be processed over a patented flaking machine, producing a flake approximately 3/4 inch thick and of irregular shape. One of the three largest producers of sulphur in the United States, Jefferson Lake Sulphur Company has additional plants in Texas and Louisiana.

In addition to the sour gas plants, development and exploration is continuing on the surficial sulphur deposits located near Cody and in the Sunlight Basin, Park County.

Trona. - Production of trona, a sodium sesquicarbonate, from the Food Machinery and Chemical Corporation mine at Westvaco, Sweet-water County, increased over that in 1953. Much of the activity here was in mine development and the application of new equipment and mining methods.

Limestone. - Production of limestone in the State for 1954 increased over that of 1953. Most of the production came from the Great Western Sugar Company's underground mine at Horse Creek, where the estimated production was 169,700 tons. Additional limestone was produced by the Utah-Idaho Sugar Company's mine at Fox Creek. Most of the limestone production is used in beet sugar refining, and for concrete aggregate, railroad ballast, and fluxing stone for foundry use.

Cement Rock and gypsum. - All cement rock is produced by the Monolith Portland Midwest Company in Laramie, who report that production increased over the 1953 period. In addition, they also produced limestone and gypsum for use in the manufacture of cement.

Phosphate rock. - Production from the San Francisco Chemical Company mine, west of Kemmerer, has been curtailed this year since the mill has been used to process ores from Rich County, Utah. Estimated mill production for the year 1954 was expected to be 185,000 short tons.

Light weight aggregate. - During the past several years, pumice has been mined in the Leucite Hills area, Sweetwater County, for use as a light weight aggregate. In addition, the Ideal Cement Company of Fort Collins, Colorado, has undertaken exploratory work on certain Cretaceous shale beds in southeastern Wyoming with the view toward developing a light weight aggregate from these deposits.

Miscellaneous non-metallics. - The Lovell Clay Products Company, Park County, mined 15,000 tons of shale that was used in the production of vitrified clay sewer pipe, brick and hollow block. They report that a major plant expansion has been undertaken and that a limited amount of research toward new uses and treating methods of the shale was carried on.

Sodium sulphate was produced near Casper, but only maintenance work was done at the Iowa Soda Products Company plant, north of Rawlins.

The Mikolite Sales Corporation has announced that they will market a combination soil conditioner and fertilizer which will be processed from vermiculite. The product, which will be available after the first of the year, will be produced from their plant in the upper Platte Valley, near Encampment.

Preliminary development work is being done on a lithium deposit that was discovered during the latter part of 1954 near the Rattlesnake Range of western Natrona County. The lithium probably occurs in the mineral spodumene in a pre-Cambrian pegmatite dike.

URANIUM

New discoveries of uranium deposits in Wyoming during the year 1954, greatly stimulated prospecting throughout the State. In addition to the Black Hills, Pumpkin Buttes, and Gas Hills areas, which were discovered during the 1951-1953 period, several new discoveries have been made. Among the most important of these are the Crooks Gap-Green Mountain area in southeastern Fremont County, the Poison Basin-Baggs area in southwestern Carbon County, the McComb area in northeastern Fremont County, and the Pedro Mountains area in northern Carbon County. Additional discoveries have been made in northern Park County; near Mayoworth, Johnson County; in the Shirley Mountains-Freezeout Hills area, Carbon County; near Saratoga in Carbon County; and in the Laramie Peak area in northern Albany County.

Although the operators in the Black Hills and Pumpkin Buttes areas have shipped their ore to the Atomic Energy Commission buying station at Edgemont, South Dakota, the lack of such a buying station in central Wyoming has undoubtedly inhibited the development of many of the uranium prospects in this part of the State. Late in October, however, it was announced by the Atomic Energy Commission that a uranium ore-buying station will be installed at Riverton. The plant, which began operations in March, 1955, is operated by the American Smelting and Refining Company for the Atomic Energy Commission and will employ automatic sampling methods.

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Black Hills area. - During 1954, the major share of the State's uranium production came from Crook County, in the Black Hills region. Most of the deposits, thus far, are randomly distributed in the Lakota and Dakota sandstones, of Cretaceous age, and vary in size from hundreds to a few thousand tons.

The principal producer here has been the Homestake Mining Company which has shipped an average of about two car loads per week to Edgemont. During the early part of the year, Homestake conducted open-pit operations near Carlile, but after July 1, when most of the ore was mined out, moved operations 35 miles away to new ore bodies near New Haven. In addition

the Little Missouri Mining Company, whose stripping operations are located about five miles west of New Haven, continues to produce at a steady rate. One of the newer operators here, Rounds and Schirmer, has opened up and shipped ore from a property located just north of Devil's Tower.

Besides the intense flurry of claim staking and property leasing in this area, there has been considerable diamond drilling by the Atomic Energy Commission and some by the Bureau of Mines and others, but no public information is available which would suggest whether any additional important ore bodies were found.

Pumpkin Buttes area. - Since the discovery of uranium mineralization by the U. S. Geological Survey in the fall of 1951, considerable exploration has taken place in this area. Most of the ore deposits occur in the lower part of the Wasatch formation, of Eocene age. Here, the principal uranium mineral is uranophane, although occurrences of carnotite, meta-tyuyamunite, liebigite, and uraninite have been noted. Some anomolous radioactivity is also found in the underlying Fort Union and overlying White River formations, but so far no mineable uranium deposits have been found in these formations.

In addition to about 53,000 feet of exploratory drilling done by the Atomic Energy Commission in this area, Kerr-McGee Oil Industries and Jenkins and Hand did considerable development and some exploratory work this year. Kerr-McGee, operators of the vast assemblage of leases and claims acquired by Jenkins and Hand in this area, mined out two ore bodies of 1,000 tons each and are presently mining a third ore body of

approximately 2,000 tons. In addition to these, several small surficial high-grade deposits were mined and shipped. All ore was shipped to Edgemont.

Gas Hills area. - Since the discovery of uranium mineralization in the Gas Hills area of the Wind River Basin in the fall of 1953, there has been a virtual rush of activity here. Thus far, all of the uranium mineralization found occurs in the Wind River formation, of Eocene age. The largest bodies discovered appear to occur at the edges and ends of major channel deposits within this formation. In some places several large trees have been found which are almost completely replaced by uranium minerals. At the present time, seven uranium minerals have been found in this area; they are meta-autunite, uraniferous apatite, uraninite, uranospinite, liebigite, uranophane, and metazeunerite.

The largest operation in the district is the Lucky Mc open-pit mine which is reported to be producing 30 tons of ore per day. The operators intend to install dragline automatic loaders to increase production to 100 tons daily. In addition to the Lucky Mc organization, others, such as Mountain Mesa Uranium, Sateco Uranium, Green River Oil and Uranium, and Vitro Uranium Corporations, have been shipping limited tonnages of ore. Although ore shipments have been made to Edgemont, S. D., and Rifle, Colorado, many operators have stockpiled, awaiting the opening of the new buying station at Riverton. Since this has occurred production in the area should increase rapidly, with many other operators initiating mining operations.

Exploration in the Gas Hills area has been brisk with both the Atomic Energy Commission and U. S. Geological Survey maintaining field parties there during the summer and fall. Core drilling has been done by the Atomic Energy Commission and others. American Smelting and Refining Company, lessees of the Jenkins and Hand claims, have done surface and radiometric mapping as well as initiating a diamond core drilling program.

Crooks Gap - Green Mountain area. - The principal producer in this area has been the Coke River Development Company, which has shipped over 1,000 tons of ore from their Sao-Ball strip mine lease. The uranium mineralization has been identified as occurring as both uranophane and phosphuranylite and is found in conglomeratic sandstones of early Tertiary age.

Baggs - Poison Basin area. - The uranium occurrence in the Poison Basin area coincides with an area known to be high in selenium. Uranophane and schroëckingerite are the principal uranium minerals and are found in the Browns Park formation of Miocene (?) age.

As a result of recent core drilling by the Atomic Energy Commission, Sapphire Petroleum Limited has recently driven a 100-foot exploratory adit into a deposit of high radioactivity. Since operations are being suspended during the winter months, the results of this exploratory work will not be known until sometime in 1955.

Other deposits. - Exploration in the McComb area, northeastern Fremont County, has indicated uranium mineralization in the form of meta-autunite in Eocene rocks. A few car load shipments have been made from this area.

One of the most interesting uranium deposits in Wyoming is located in the Pedro Mountains of northern Carbon County. Here, a uraninite-molybdenite deposit is found adjacent to the footwall of a graphite bed in pre-Cambrian rocks. A few test shipments from this deposit have been made by the Nugget Coal Company, but results of these are unknown at the present time.

Exploratory work is being carried on by the Donna Mining Company on deposits in the Shirley Mountains, northern Carbon County. Mineralization is reported to be in the Morrison formation, of Jurassic age, and constitutes the first discovery of what may be commercial deposits in this formation in Wyoming.