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MINERAL RESOURCES OF THE LARAMIE AREA

Geologically, the Laramie Basin comprises the intermontane valley between the Medicine Bow Mountains on the west and the Laramie Range on the east. The mineral resources of this region may be classified as (1) metals, (2) nonmetals, and (3) mineral fuels. Many of the mineral occurrences have been described in the publications of the Geological Survey of Wyoming, located at the University of Wyoming, or in those of the U.S. Geological Survey. The Natural Resources Research Institute at the University engages in research on the quality and potential uses of mineral raw materials, and information on their industrial utilizatinn is available from that agency.

Metallic Minerals

No metal mines are at present operative in the Laramie area, although copper and precious metals were mined in the early days. Current operations are largely development work.

Precious metals.- Gold, silver, platinum and palladium were produced from mines in the Medicine Bow Mountains. Most operations were on relatively small scales and were of an intermittent nature. Several mines, however, were fairly important producers, notably the Rambler mine. Placer operations were carried on from time to time and a few rich placer deposits were discovered. It is estimated that about $250,000 in gold has been produced in Albany County since the first gold mining activity in 1868.

Copper.- Many copper prospects were opened in the Laramie area and although some showed promise, only one important copper mine was ever developed. This mine was closed by a fire in 1918 and has not operated since that time.

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Titaniferous magnetite.- The titaniferous magnetite deposits in the Iron Mountain area, northeast of Laramie, constitutes a large unexploited source of titanium. Titanium dioxide is the best pigment for the manufacture of white paint, and metallic titanium and titanium tetrachloride are substances with many uses. The Iron Mountain deposit contains over 6 million tons of ore ranging up to 23% titanium dioxide. There are several million tons of lower grade ore. Supplementary tonnages of high-grade ore are available nearby. The ore also carries an appreciable amount of vanadium, a metal important in the production of certain types of steel.

Nonmetallic Rocks and Minerals

Alumina rock.- A body of rock carrying 30% or more alumina occupies an area 30 miles long and 10 miles wide in the Laramie Mountains, just northwest of Laramie. A plant designed to extract alumina from this rock has been constructed near Laramie but has not yet been operative. Metallic aluminum may be derived by the refining of alumina.

Bentonite.- Bentonite is a peculiar clay with swelling properties and a colloidal nature which makes it useful in many ways. Wyoming is the largest bentonite-producing state but the deposits near Laramie have not yet been extensively exploited. Those in the Rock River area are of good quality and mining conditions are favorable, but other deposits elsewhere are possibly subject to commercial development.

Cement rock.- Natural rock suitable for the manufacture of cement is common in the Laramie area. At present the rock is utilized in the manufacture of Portland cement in a plant near Laramie.

Cordierite.- Deposits of cordierite, as yet unexploited, have been found northeast of Laramie. This mineral is used in producing porcelains

which are resistant to thermal shock and the mineral, as it occurs near Laramie, appears suitable for use in certain types of porcelain.

Feldspar.- Albany County is the State's largest feldspar producer. This mineral is used in the manufacture of certain types of glass and deposits are worked in the mountains south and east of Laramie. All is shipped in the raw state for use in the glass industry elsewhere.

Fluorite.- Commercial deposits of fluorite, a mineral important as a flux in steel manufacture, have been worked near Cowdrey, Colorado, southwest of Laramie.

Graphite.- Graphite deposits of possible commercial grade occur in the Laramie Range, northwest of Laramie.

Gypsum.- Gypsum, and the earthy form known as gypsite, occur commonly in the Laramie Basin. Plaster products are now manufactured from gypsite at a plant at Laramie, but raw ground gypsum may also be used as a soil conditioner or as a rock dust in coal mines.

Limestone.- Almost inexhaustible quantities of high-grade limestone occur along the foothills east of Laramie. At present some of the rock is used in the cement industry, but this rock, which is composed of almost pure calcium carbonate, is suitable for use in glass manufacture, in the chemical trade, in sugar refining, and as a soil conditioner.

Magnesium sulphate.- Saline lakes yielding magnesium sulphate, or Epsom salts, lie about 50 miles north of Laramie. The salt runs as high as 85% magnesium sulphate and large quantities are available.

Natural construction materials.- Limestone, sandstone, granite and other rocks suitable for crushing for building purposes, for railroad ballast, for highway construction, or for other uses abound near Laramie. Native stone is quarried nearby and has been used extensively for the larger public buildings. Large supplies of sand and gravel are available.

Clay suitable for use in the manufacture of bricks, tile and sewer pipe occurs in abundance.

Pumicite.- A deposit of pumicite, or volcanic ash, occurs in the southern part of the Laramie Basin. The ash is very pure and might be used as an ingredient in scouring powders or in the manufacture of light-weight concrete building blocks.

Rock wool.- Rock which may be suitable for the manufacture of rock wool occurs in the Laramie area. Rock wool is made by fusing certain types of rock to produce a mat of glass fibers possessing excellent insulating qualities.

Silica sand.- A deposit of high-grade silica sand, which was used in glass manufacture in early days, lies about three miles east of Laramie. The sand is suitable for making certain types of glass, for use as an abrasive, or in the manufacture of scouring powders.

Sodium sulphate.- Sodium sulphate occurs as saline lake deposits southwest of Laramie. These deposits were worked in the early days for soda used in a glass factory at Laramie. In addition to its use in glass manufacture, sodium sulphate is used in making paper, in stock feeds and as a flux. The Downey lakes contain over 300,000 tons of salt averaging about 90% sodium sulphate.

Mineral Fuels

Coal.- Coal was mined in the Laramie Basin as early as 1865, but no mines now operate in the Laramie area. The large strip and underground mines in the Hanna Basin are only 80 miles from Laramie, however.

Petroleum.- The Laramie Basin has been an oil-producing area since 1918 and the important fields lie northwest of Laramie. The Rock Creek and Quealy fields have an aggregate daily production of about 3,000 barrels. Seven other fields closer to Laramie have an aggregate production of about 900 barrels per day.