

1985 Luncheon Meetings

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Wyoming Industrial Minerals — Or When a Rock is Not a Rock!

Industrial minerals — nonmetallics and nonfuels used in high volume, low cost applications — only constitute 2.54 percent of the mineral industry (including oil and gas)

Abstracts of Papers

revenue of Wyoming, but they are important local sources of revenue. Wyoming produces soda ash from the world's largest deposit of trona. Trona provides the fourth largest mineral revenue in Wyoming after oil, gas, and coal. Wyoming is also the nation's largest producer of bentonite. Gypsum is mined in the Bighorn Basin for wallboard, another construction material, and near Laramie for use in cement. Clay is mined near Evanston for brick and tile production, and at Laramie for use as an expandable lightweight aggregate. Sodium sulfate is mined near Natrona and shipped to the Midwest for use in chemicals.

Sand and gravel, stone, and crushed stone have many uses. Limestone is quarried and crushed in many places for use as construction aggregate, construction fill, sugar rock (used in the beet sugar refining process), cement, and locally for dimension and ornamental stone. Granite is quarried in several places and crushed for construction aggregate and railroad ballast (the rock used to weight ties and carry the railroad bed). Clinker (baked and fused rock formed by the burning of underlying coal) is used in the Powder River Basin as a construction aggregate and as railroad ballast. Marble is mined west of Wheatland by Basins, Inc. and south of Lusk by the Pacer Corporation and used for decorative and ornamental stone and aggregate such as white roofing rock. Where available, natural deposits of sand and gravel are quarried, sorted, and used for construction aggregate.

Specifications used to determine the suitability of rock for industrial applications include color, hardness, fracturing, density, and durability. However, the development of industrial minerals, particularly aggregate, stone, and crushed rock, often depends more upon factors other than the rock itself. A rock is not a rock when transportation, land acquisition costs, and other economic factors make it unsalable. The Powder River Basin offers a good example of this. Clinker is used as aggregate even though rocks such as limestone, granite, or quartzite would be more suitable. Railroad ballast is another example. The Burlington Northern Railroad imports ballast from Wisconsin and Oklahoma to Wyoming even though adequate stone is available in Wyoming adjacent to existing railspurs. Granite from west of Cheyenne is used by the Union Pacific Railroad as ballast on the entire line east to Omaha, Nebraska, since hard rock is unavailable east of Cheyenne.

Industrial minerals that may be produced in Wyoming in the future include sulfur, salt, potash, phosphate, quartzite, hydrofrac sand, silica sand, travertine, and basalt.