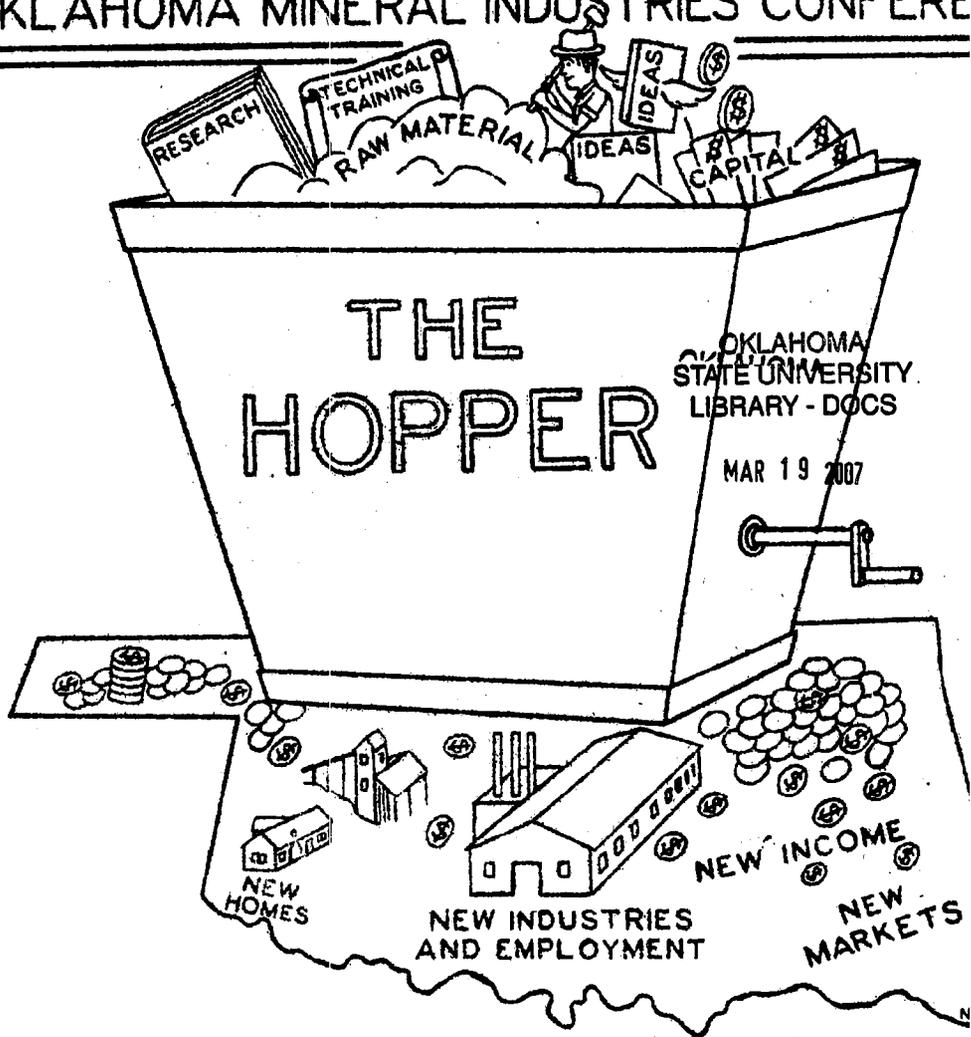


OKLAHOMA MINERAL INDUSTRIES CONFERENCE



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HOPPERATOR'S PAGE

Director's Biennial Report for 1945-1946, has been released by the Oklahoma Geological Survey. Copies have been sent to newspapers and chambers of commerce in the state.

NOTE TO EDITORS: A small number of mats were made from the cuts used in this report. These illustrate the relative importance of agriculture, minerals, and manufacturing in Oklahoma, and the relationship of manufacturing to agricultural income. Any of these mats desired by newspapers will be sent upon request, as long as the supply lasts.

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Strategic and Critical Materials Stockpiling Act of 1946, provides for purchase of these materials, by the government. Anyone interested in ascertaining the items included and the procedure to be followed can obtain information by writing J. Carson Adkerson, President, American Manganese Producers Association, National Press Building, Washington 4, D. C.

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A story in the Oil and Gas Journal tells of the properties of strontium greases as lubricants. Has anyone any idea of the amount of strontium salts in Oklahoma oil-field brines? Deposits of strontium minerals occur in the area south of Weatherford, where the tonnage in sight is rather small. The amount that might be extracted from Oklahoma oil-field brines might not be so small.

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MINERALS OF THE ADA DISTRICT

By

H. D. Barndollar, Chairman
Industrial Committee, Ada Chamber of Commerce

(Address before the Oklahoma Mineral Industries
Conference at Ada, Oklahoma, November 7, 1946.)

Ada is not unduly modest in its claims as to what constitutes the "Ada District." Ada realizes her great good fortune in being located adjacent to a tremendous storehouse of natural resources. Ada is proud of her citizens who have taken advantage of nature's gifts, and have established industries to utilize these resources. Ada is proud of her industries and of her status as an industrial center. Ada welcomes those from the outside who, too, realize the value of the natural resources storehouse, and have come here to help us develop them. We hope others, many others, will do likewise. Perhaps some of you visiting us here today for the first time will be impressed by the variety and magnitude of our store-house, and come back. We hope so.

Ada is not unduly modest, neither is she unduly selfish. Ada realizes that she holds no vested right in the resources of the Arbuckle Mountains and south-central Oklahoma. They belong as much to our sister communities; to the State of Oklahoma; yes, to the Southwest. Furthermore, there is enough for all, and it is my firm belief that the industrial empire which is now being built up in the Southwest will depend more and more on the mineral resources of the Arbuckle Mountains.

The Ada district, then, is south-central Oklahoma, including the Arbuckle Mountains. I freely admit that this is also the Ardmore district, the Pauls Valley district, the Sulphur district, the Durant district, or the district of any other

community that has men with sufficient gumption to come in and develop the local resources. Ada will claim a little priority for herself, on that portion of the area in her immediate environs.

There are few places in the world that hold such a large variety and great abundance of industrial minerals and fuels needed for their utilization in so compact an area. It is significant, for south-central Oklahoma at least, that of the twelve industrial minerals mentioned by Mr. Dott earlier on this program, only three are not present in this area. In addition, there are several minor resources which were not included in his list.

Considering the rather small number of industries processing industrial minerals in a state so mineral-rich as Oklahoma, it seems to me significant that located here are one of two cement plants in the state, the only one recovering carbon dioxide as a by-product; one of 3 carbon black plants; one of the biggest brick and tile plants, the only one making buff brick; one of the largest concrete pipe factories; all the state's production of glass sand, and one of the largest glass plants in Oklahoma; the site of the state's second and what will be its largest rock wool plant, and ultimately the largest in the entire southwest. In what I like to call the "Ada District", but what some of our good neighbors may like to call theirs, are the state's entire production of native rock asphalt; one of the principal coal-producing areas; the largest limestone-crushing plant; large producers of agricultural limestone and building stone; the only producer of poultry grits. Though Oklahoma's only pottery plant is located at Sapulpa, the clay used is mined near Ada. I say these things are significant, for they clearly demonstrate the variety, quality, and economic importance of the mineral raw materials available in this area.

Last year in this same hall, Mr. Hugh D. Miser, Geologist-in-charge of the Section of Fuels, United States Geological Survey, told the Oklahoma Mineral Industries Conference that "The reserve supplies of mineral fuels in the Southwest, in Oklahoma, and more specifically in the area accessible to Ada, are ample for the existing industrial plants and any reasonable expansion thereof, as far into the future as we can hope to predict..." With respect to natural gas, he said "I cannot foresee the time when these local supplies will fail, but when that time comes, as it inevitably will, the widespread network of gathering and distribution lines throughout Oklahoma, and reaching into adjacent states of Texas, Louisiana, and Kansas, can supply gas for as long as any industry cares to look ahead...."

Oklahoma is indeed blessed with the basic ingredients needed for building an industrial economy. To an important, but certainly inadequate extent, her people have capitalized on this blessing. Much more can and must be done. Men with "know-how" and venture capital must learn to think industrially and to apply their resources of energy, ability, and money to the development of mineral processing industries.

I have been talking about mineral resources, "know-how" resources, and capital resources. There is another resource equally important in contemplating industrial expansion--the resource of information and knowledge. Here again, Oklahoma is fortunate, really more fortunate than she deserves. In the Oklahoma Geological Survey she has one of the best research organizations working on minerals in the United States. I, myself, have been in the mineral game in one way and another for many years, and during those years have had rather close contacts with State Geological Surveys and private geologists and engineers working on mineral exploration and production.

From a lifetime's experience, I can say that no group or organization, with so little funds, and so little personnel, has carried on such an effective, far-sighted, practical program, as has the Oklahoma Geological Survey during the past few years. With a staff of director, office geologist, two field men, and a chemical engineer, they have uncovered, developed, and pointed out enough feasible industrial propositions to justify investments of many millions of dollars.

The Geological Survey should be better supported. It should be better supported financially: its staff, office and laboratory facilities are wholly inadequate, reflecting niggardly support from a state so potentially rich. If worthwhile to Illinois to appropriate \$384,000 per year to its Survey; Missouri, \$119,000; Pennsylvania, \$112,000, should not Oklahoma, with a much longer way to go industrially, spend more than \$57,000 on hers? The Geological Survey should be supported in other ways; by a greater utilization of their findings and their suggestions by the communities of Oklahoma. It takes that to translate research information into brick and mortar and steel, into new mines and processing plants.

I guess there's a good deal of the prospector in me. I like to roam around over the hills to see what I might stumble across that would have some commercial value. Several years ago I got interested in the idea that the Oklahoma glass industry might use Oklahoma feldspar instead of shipping it in from Colorado at very high cost. There are no pegmatite dikes with large masses of feldspar such as occur in the Rocky Mountains and the Black Hills, but the Tishomingo granite south of here is very coarse, with crystals of feldspar up to an inch across, and it occurred to me that beneficiation might be applied to separate the feldspar from the quartz and other minerals. So I took a large sample of fresh granite from 10-acre rock,

the old state capitol quarry, into the Survey. I don't believe they thought the idea too practical, though they were as interested as I in finding an Oklahoma source of feldspar. The glass industry fights iron all along the line, in glass sand, in limestone, in feldspar, in all its raw materials, so they very sensibly suggested we find out how much iron it contains, and carefully separated a large enough piece of feldspar from the granite sample for chemical analysis. To their disappointment, the iron was too high.

I kept looking, and one day stumbled across a deposit of what looked to me like white feldspar in the Washita River bluff. They told me that this was partially altered granitic material and the difference in color probably had little to do with the iron content. Such proved to be the case, but the Survey thought maybe the stuff would be good for something else.

About that time, the Ada Chamber of Commerce had been bombarded with inquiries for buff-burning clay, and the Geological Survey also had received many requests for similar information. Of course, we already knew of the deposit east of Ada from which the Ada Brick Company and Frankoma Potteries obtain their buff-burning material. The Survey took the stuff I brought in from the river bank, and samples of about a dozen other deposits that I thought were similar, and which I dug out of road banks in the granite area, ground them, and fired them, producing some of the prettiest test blocks I've ever seen. Some of the samples are on exhibit in the lobby. Survey men have seen all the places I sampled, and are of the opinion they represent a large amount of this sort of material.

Back early in the war, when the iron blast furnace was being built at Daingerfield, Texas, it seemed to me there should be dolomite in this area that would be suitable for fluxing stone. The

Survey people showed me several analyses of Royer dolomite from the area southwest of Mill Creek, and told me of its extensive outcrop. I wore out a pair of shoes looking it over, and can tell you from personal observation that there is a tremendous quantity down there in those hills, and there are several good quarry sites. The Daingerfield blast furnace never was operated, but I make the prediction that before too long, somebody will open up that deposit, and once opened, the chemical and other industries of the southwest that use dolomite and magnesium compounds will be clamoring for this stone.

Then take glass sand. During the war, with the supply of tin cut off, food packers had to turn to glass containers, and the demand jumped several hundred percent. This brought new demand for glass sand, and the Survey undertook a re-investigation of sands of the Simpson formation. As a result, it has demonstrated that the glass sand deposits of the Arbuckle Mountains are much more extensive and more accessible to rail transportation than formerly believed. It may be wishful thinking, but I look for a very great expansion in glass manufacturing in Oklahoma, hence a much increased demand for glass sand, so I count glass sand as one of our most important of nature's gifts.

The Ada district, including the deposits south of Sulphur, accounts for all of Oklahoma's production of native rock asphalt, which has been sufficient to rank Oklahoma first in value and tonnage in the nation for many years. You will see the deposits of sand- and lime-rock asphalt now being worked, on the field trip tomorrow. Another deposit lies west of Ada, which has been worked extensively in the past, and will be in production again as soon as the region's construction program gets into full swing.

Limestone and shale have been produced near Ada for many years, to supply the cement plant. Those of you who made the field trip last year and saw the big hole in the ground, realize how much material has been taken out. But there's plenty more. In my roaming around, I've picked up many limestone samples, some of which have been analyzed in the cement plant laboratory, and some in the Survey's laboratory. Many of them proved too high in silica and other impurities to be suitable for chemical industries, but some of them are as good as the best now being used by industries in Ohio, Pennsylvania, Illinois, and other manufacturing areas, and we invite the attention of such industries to our deposits.

Tomorrow you will see one of the oldest and largest limestone quarries in Oklahoma, where stone is quarried and crushed for production of concrete aggregate, railroad ballast, road surfacing, and similar uses. On Saturday's trip you will visit a quarry near Fittstown where limestone is produced for building stone. This is a very beautiful stone, and many tons per week are being shipped to Ada, Oklahoma City, and elsewhere, for home construction. There are other such deposits, and several other quarries in operation. With a full-scale building program, demand for this material will increase many times, and there's plenty more here for the taking.

I enjoy a small reputation around here of which I am very proud. When strangers come to Ada looking for mineral materials, sooner or later they hunt me up. We had an interesting visitor from Illinois last summer looking for a particular kind of limestone, for use in the manufacture of putty powders. I had no idea what he wanted, for I knew little or nothing about putty. To confess the depth of my ignorance, I had thought putty was made from gypsum. But it turned out that putty is made from finely ground limestone and linseed oil, and only a

special type of limestone will work, the most satisfactory being an oolitic stone of rather high calcium-carbonate content, one that has a white color when ground. He had come to Ada because a visitor at last year's Conference had shown him a piece of stone picked up on a field trip.

But this man had me stumped. I thought I knew something about these hills, but here was one I couldn't answer, so I called the Survey. Next day some of them came over, and after listening to the specifications wanted, laid out a systematic trip through the Mountains during which we visited about a dozen deposits. Our Illinois visitor took samples for testing in his laboratory, and I know that he will be back.

Over in the hills west of Troy is a large deposit of stone which will be used in a plant now under construction in Ada to manufacture rock wool insulation. The company plans that this plant will serve to supply insulation to customers in ten or more states in their trade territory, and will be one of, if not the largest such plant, in the Southwest. The impure dolomite to be used was found and reported to the men interested in the company by the Geological Survey. As a matter of fact, this company came to Oklahoma solely because of the Geological Survey. The Oklahoma Geological Survey showed them a number of choices in this state, and experimentally produced rock wool from several deposits, including the one west of Troy. The men of the company finally selected this area. The Ada Chamber of Commerce with the help of the Frisco Railroad persuaded them to locate here. Were it not for the Survey, however, this plant might be in one of our surrounding sister states.

Another resource now available at very low, if any cost, and waiting for someone to utilize, is oil field brine. In the Fitts pool are two plants that gather salt water produced with oil, and return

it back underground as an absolute waste, in order to keep from polluting our streams. Mr. Surwell has just shown you how this waste material could be turned into a profit.

The Arbuckle Mountains area is not notable for its metallic minerals. However, there are sizeable deposits of iron ore, some of which is being used at the cement plant for manufacture of low-heat cements needed for dams and other massive structures. Associated with it are ocherous clays, which, together with the iron ore itself, might be used for paint pigments, drilling mud weights, or otherwise. Southwest of Davis is a deposit of zinc ore, on which mining has been attempted from time to time. No one seems to know how extensive the deposit may be. So far as I know, no one has tried very seriously to find out. Considerable test drilling would be required.

Near Bromide, in the southeastern part of the Arbuckle Mountains is a small deposit of low-grade manganese ore. The ore occurs as both the oxide and carbonate. The last two wars have stimulated some mining, but apparently the deposit is too small and too low-grade for exploitation simply as ore. I wonder, though, if it may not have possibilities for specialty uses, such as manganese chemicals, or otherwise.

I hope you will pardon these personal remarks. I do not want you to think that I believe I know all about the minerals of the Arbuckle Mountains. I do claim to know about and to appreciate the importance of some of them. Nor does the Survey claim to know everything there is to be known. I take a little credit to myself, in that I have made frequent visits to the Survey offices, and have taken our problems to them. I suspect I went so often they got tired of seeing me. I must say, however, that in all my trips over there, never once have I met a representative of another Chamber of Commerce.

From my experiences, I can offer this advice to other communities: Most mineral processing industries have rigid specifications for their raw material, and for some of them water supply is extremely important. Don't make the mistake of blandly advising that you have plenty of limestone, shale, dolomite, sand, ground water, or whatever else is required. My experience with the putty man showed me the great importance of specifications, and the folly of generalities.

If you have a problem relating to mineral resources or ground water supplies, go to the Survey with specific details. If your inquiries are only generalities, you can't expect much more than generalities in reply. If you know what you're after, and present your problem in specific terms, you'll get specific answers. Most of all, take the trouble to go to Norman and get acquainted, sit down and talk with these men, and I promise you'll go home with ideas and information that you can put to practical use.

So far as Ada is concerned, and so far as other towns surrounding the Arbuckle Mountains are concerned, we can point with some pride to our accomplishments. But let's face the bold facts. We've been sitting right on top of this fine assemblage of industrial minerals and fuels for fifty years, and what have we done with them? Sure, we have a few industries in Ada. Most of them have come to us from outside capital. We have a glass plant, a cement plant, a brick plant, and are building a rock wool plant. Count them. Four industrial plants using these raw materials. Remember the list of industrial minerals. Some of them are not even being mined. There are half dozen or more towns surrounding these resources, and some of them don't have even one little processing plant converting these raw materials into new wealth.