

**Statewide Mineral
3-16-38 Survey Started
Fulton Co.**

A state-wide mineral survey to be made by the Works Progress Administration through sponsorship by the Arkansas Geological Survey started in 31 counties March 14, according to Floyd Sharp, state WPA administrator.

Hardy H. Nash has been appointed supervisor of Fulton county. He has established an office with County Judge Delbert Davis.

This project is said to be one of the largest white-collar projects ever undertaken by the WPA. Purpose of the project is to "locate, measure, estimate describe, test and map the accessible resources of the state, such as construction materials, minerals and water tables for use in determining their adaptability for economic use."

A total of 450 workers will be employed in the 31 counties. The work will be extended to include 55 counties later, Mr. Sharp said. Total employment in all counties will be 600 with approximately 15 workers in each county.

Supervisors for the counties were selected by Mr. Sharp with the co-operation of Kenneth O. Warner, state personnel director, and Dr. George C. Branner, state geologist. A two week school was conducted and persons with the highest grades were selected, Mr. Sharp said. Additional supervisors will be selected from applicants with a "preferred" classification.

**Fulton Co. 3-25038
Mineral Survey Under Way
"The Headlight,"**

After a week of instruction, local men have been assigned to the State Mineral Survey, which started work in Fulton county March 21, Hardy A. Nash, Supervisor, states. The men started work near Salem and will work in this vicinity until the plans are perfected.

Men who have been appointed Junior Engineer Aides are: Lemuel Scott, Dick Weathers, Ray C. Carter, Lee Bowling, J. R. Blevins and P. S. Roberts. Rempel Estes is timekeeper, Oscar Hammond, truck driver, and Miss Ruby Burrow, typist.

Mr. Nash urges that all land owners or persons interested in the survey give information concerning location of samples of mineral or clay should be kept by the land owners or interested parties after the samples have been examined and tested in laboratories in Little Rock and Benton.

Such information as to the nature and value of samples taken may be had without cost by writing to the State Geological Survey, Little Rock. All such reports are filed in the office for information available to any outside interests, interested in the various minerals and resources of the state, thus inviting outside capital into the state and creating more work and better prosperity for the State of Arkansas.

We will greatly appreciate the cooperation of the people of Fulton county, as the more help we receive from you the more thorough our reports can be with the hopes of locating some deposits that will be of great benefit to the people of this section of the state. However, we do not wish to cause any false hopes and will only give out information when the source has been thoroughly tested in our Little Rock laboratory by a specialist in this work.

If you have samples of materials that you wish looked at especially, we will be very glad to take their location for reference in our work. When our crews are working in that neighborhood, we will investigate the deposit and determine the likelihood of creating a paying enterprise, which is the main object of this work.

The project is under the supervision of Robert O. Beckstrom, State Supervisor, 117 N. Victory St., Little Rock. Mr. Beckstrom, a former Professor of Geology in Colorado School of Mines, has just completed a successful survey of this nature in Oklahoma.

The entire project is sponsored by the Arkansas Geological Survey.

**Reports Say
'Ghost Town'
May Revive**

Gazette 10-30338

By CARUTH S. MOORE.

Evening Shade, Oct. 29.—Sharp county's ghost town, Calamine, may return to life. Sixty years ago lead and zinc were being mined and smelted in large quantities at Calamine. Expensive equipment had been purchased and installed by the Arbuckle Mining Company and other Eastern syndicates. A large "hotel," which also served as a sort of clubhouse for workers, was erected. Half the population of that end of the county worked in the mines and smelting plants.

The settlement received its name for the place where the ores were found. The larger lodes of ore were just beginning to be touched, old timers will tell you. The deposits were apparently almost inexhaustible, they say.

Shut-Down Unexplained.

Suddenly, something happened. What it was is still a mystery. Everything was going full blast. In fact, the residents will tell you that preparations were in the offing to enlarge the works. The laborers were dumfounded, upon going one morning to their tasks, to be met with the announcement that "the mines had closed down."

That was all they ever knew. The men who superintended the work had vanished overnight. Various stories began to get about. One was that silver had been mined and minted.

The buildings rotted down. Much of the equipment was carried away. Pipes were used to run water into stock pens. One may occasionally even today see the smelting pans being used for chicken watering pans or flower beds.

The mystery of the desertion remains unsolved. The owners or their representatives and heirs, in more probability, continue to pay taxes on their holdings around Calamine. The explanation probably is that poor transportation facilities existing at that time made the mines less profitable than the residents thought.

Believe Deposits Larger Than Realized.

Interest is reviving in Calamine deposits of ore. The WPA mineral survey has recently uncovered a new stratum of zinc. This, hitherto unknown, runs along a little creek west of the settlement, and is said to indicate that the ores may be more widespread than was formerly thought. Some leases have been taken and a shaft or two been sunk.

Word is going around that "the mines may reopen." Residents are beginning to recall how "my father told me there was ore at the head of a certain creek branch." They will tell you: "I know a bluff where the ore runs back a long ways, and I haven't ever showed it to anybody," and so on.

**Survey Lists
Deposits In
Fulton County**

Gazette 6-11-39

By TOM SHIRAS.

Salem, June 10.—The Fulton county mineral survey, conducted as part of the state-wide WPA mineral survey sponsored by the state Geology Department, has located large deposits of tripoli, dolomite and road building materials, particularly gravel.

The survey, under direction of Richard Brewer, county supervisor, has extended pretty well over the 465 square miles designated for study.

Besides mineral and road building material deposits, the survey has recorded the location of streams, lakes, water wells and springs and has analyzed their waters.

Until this survey was started, the known deposits of tripoli in Arkansas were in the western and northwestern sections. Deposits discovered recently in Fulton county are in the extreme western and southwestern sections, near Mammoth Spring, Elzabeth, Viola, Bexar, Wild Cherry and Argosy.

Many Uses for Tripoli.

Tripoli is a form of finely divided silica. The action of water has dissolved the calcide in the rock, leaving soft, porous, white silica. This material is easily crushed and is used extensively as a polishing cement. It also is used in the manufacture of cement, the making of soap powder and as a filler for certain grades of paint.

A deposit of this material 11 miles south of Mammoth Spring, is being utilized for the manufacture of a household cleaner by a company in Hardy. This deposit is about 18 feet thick and covers an area of about 20 acres. The cleaner manufactured from it is recommended for cleaning and

polishing glass, metal surfaces and painted surfaces.

Tripoli deposits near Bexar and Wild Cherry were located by outcroppings along road ditches. At Bexar the exposed surface of one deposit extends about 30 feet, the thickness of the deposit being about 20 feet. The outcropping near Wild Cherry has a 300-foot "face" and the deposit covers about 200 acres.

About eight miles north of this deposit, near Viola and Argosy, is a deposit ranging in depth from six to 10 feet. It has an overburden of sandy soil, about six feet thick.

Dolomite Plentiful.

Fulton county has large deposits of dolomite, which is valuable as a building stone and for other uses. It is a good mineral fertilizer, is used as a flux in smelters in the manufacture of lime calcimine and in stucco. This valuable stone is found in nearly all sections of the county, the thickness of the beds being estimated at more than 2,000 feet.

In the vicinity of Mammoth Spring, the rock occurs in bluffs from 10 to 60 feet high. Some of the deposits are crumbly and brittle, sandy and porous. Others are hard, light colored and fine grained. Across the county near Vidette, in the extreme western part, dolomite has been found in bluffs from 20 to 300 feet in height. There the stone is pink and is believed to be the first of this color found in the county.

Some fine gravel, valuable for road building purposes, has been located near Viola, the deposit being 900 feet long, 80 feet wide and nine feet deep. It is estimated to contain 20,000 cubic yards. In an adjoining section another fine deposit of gravel was found covering about four acres, the estimated amount being 480,000 tons.

Considerable information concerning Mammoth Spring has been accumulated by the survey. It is one of the largest springs in the United States. Its flow varies from about 250 to 350 cubic feet per second. The water is "hard,"

containing about 158 parts per 1,000,000 of lime and 139 parts per 1,000,000 of magnesia. The summer temperature of the water is about 58 degrees.

Besides Mammoth Spring, the survey examined and listed 286 water wells and 118 springs. The average depth of the wells is 60 feet. In the western and southwestern parts of the county dug wells range in depth from 10 to 42 feet. Only in rare instances is soft water found. In this same section the drilled wells have a range in depth from 60 to 190 feet. The water in almost all wells is hard.

Work of Mineral Survey In Fulton County

In March 1938, a Mineral Survey conducted by WPA workers and sponsored by the State Geological Survey began work in Fulton County. Locally the work is under the direction of Richard Brewer, County Supervisor. His sixteen assistants are authorized WPA registrants of Fulton County.

Of the 625 square miles in Fulton County's area, 486 were designed for investigation. Beside the mineral deposits, this survey is recording the exact location of streams, lakes, water wells and springs, and submitting samples of their water for analysis. The railroads, highways, power transmission lines, bridges, dams, all are being recorded on the field sheets of the workers, who walk over the allotted area section by section. This latter information is being used to correct errors in published county maps.

Of the minerals located and mapped thus far, those of most importance commercially are tripoli, road marking materials and dolomite.

Until this Survey was begun the known deposits of tripoli in Arkansas were in the western and northwestern parts of the State. That recently discovered in Fulton County is in the extreme western and southwestern sections, within four miles of the settlements of Elizabeth, Bexar and Wild Cherry. The exposures near Bexar and Wild Cherry are found in road ditches. At Bexar the exposed surface extends for 30 feet, the thickness being about 20 feet. The outcrop near Wild Cherry has a 300-foot face and the deposit covers 200 acres. Approximately 8 miles north of this deposit in the vicinity of Argosy and Viola, is a deposit ranging in depth from 6 ft in a 20 foot pit, to a 10-foot bluff near Viola. Both deposits have an overburden of sandy soil about 6 feet thick. Tripoli is a form of finely divided silica, which, in Fulton County, is derived from the leaching of siliceous limestone. The action of the water has dissolved the calcite in the rock, leaving soft, porous, white silica. This is easily crushed and is extensively used as a polish in the manufacture of dynamite and other explosives, in the manufacture of cement, soap powder and as a wood filler by paint makers.

At a point in township 20 N, R 5 W, about 11.5 miles south of Mammoth Spring and within 2 miles of Many Islands, a deposit of tripoli covering 20 acres with a depth of 18 feet is being utilized for the manufacture of a household cleanser by a company in Hardy, Ark. This new indus-

try began operation in February, 1939. Samples of this material were sent to the laboratory in Little Rock by Mr. Brewer and showed the following:

Silica,	81.70 per cent.
Alumina,	13.76 per cent.
Moisture,	3.98 per cent.
Ferric Oxide,	.34 per cent.
Calcium Oxide,	.19 per cent.
Alkalies,	.02 per cent.

Total 99.99 per cent

The cleanser is recommended by its manufacturers for cleaning and polishing glass, paint and metal surfaces.

Road making materials, consisting of chert and gravel, are found in different parts of the county. Small, loose chert is scattered over almost the entire area. Gravel of a quality adapted to road making has been located by the Survey in the west-

ern part, about four miles north west of Viola. This gravel is in a creek bed, the deposit being 900 feet long, 80 feet wide and 8 feet deep, estimated to contain 20,000 cubic yards. In the adjoining Section (S. 3, T. 20 N., R. 10 W.) gravel covers approximately 4 acres, the estimated amount being 480,000 tons. The Survey has listed several deposits, easily accessible, with details as to quality, for the State Highway Department.

In mineral terms, dolomite is described as a magnesian lime stone. It is found in beds, like limestone. While its chief use in Arkansas has been that of a building stone, it is also valuable as a mineral fertilizer, as a flux in smelters, in the manufacture of lime and in calcimine and stucco. In Fulton County dolomite is found in nearly all sections; the series of dolomite beds which underlie Fulton County have an estimated thickness of more than 2000 feet, in the vicinity of Mammoth Spring the rock occurs in bluffs from 10 to 60 feet high; some deposits are crumbly and brittle, sandy and porous, others are hard, light colored and fine grained. It is one important mineral used in the manufacture of mineral wool. Across the county, in the extreme western part, one mile from Viola, dolomite has been found in bluffs from 20 to 300 feet in height. At this point the mineral is pink and believed to be the first of this color found in Fulton County.

Thus far the Surveying crew has examined and listed 286 water wells and 118 springs. The average depth of the wells is 60 feet. In the western and extreme southwestern parts of the county the dug wells range in

depth from 10 to 40 feet; only in rare cases is soft water found.

In this same section the drilled wells have a range of depth between 60 and 190 feet. The town of Mammoth Spring does not use the spring water for municipal purposes, but has a well 350 feet deep, serving a population of 650; the daily consumption of 5000 gallons is supplied by a tower tank with a capacity of 7,500 gallons per day. Many families in Mammoth Spring have private wells or springs. Because of the quality of the water over the county, cisterns are used for soft water storage, and they are numerous in all parts. The depth of these reservoirs vary between 14 and 35 feet. The data collected on wells and springs will be valuable in determining the position of the water table and the yield of wells in Fulton County for different seasons of the year. This will also be useful in determining future ground water supplies for domestic and municipal use.

Mammoth Spring is one of the large springs of the United States. The summer temperature is 58 to 59 degrees. Its flow varies from about 250 to 350 cubic feet per second, or from about 112,000 to 150,000 gallons per minute. The water is hard, having about 158 parts per million of lime and 139 parts per million of magnesia.

The Survey in Fulton County has given particular attention to the locating and recording of all monuments, witness trees and bench marks of Land Survey divisions. Each section corner is described, and where no marker is in evidence, notation is made to that effect. The survey has found that county maps now in use contain a number of inaccuracies, especially in the northern part of the county where extra sections are not even shown. In some instances the roads have been found to be a mile off the location indicated. These corrections will be seen on the new maps which will be made from the recorded data of the Survey.

When the Survey is completed, all records, samples and reports on analysis of minerals and waters will become the property of the State Geological Survey. From this George C. Branner will compile and issue bulletins

on the minerals and waters of Fulton County, which will be available to those interested.

The State offices of the Mineral Survey are at 117 N. Victory Street, Little Rock. Robert C. Beckstrom is the State Supervisor, and R. E. Vandruff is the Technical Supervisor of the project.