Next March, City's Great Water Reservoir Thoro

GAZETTE 7-1-37

Big Lake Will Be 100 Feet Deep

Next March, or thereabouts, water consumers of Greater Little Rock will turn happily away from the murky Arkansas river for their supply and look with—shall we say, jubilance—to a giant reservoir containing 14 billion gallons of fresh water—a lot of it spring water—covering 1,290 acres in the verdant hills along the Alum Fork river.

Before Christmas comes this winter, believes Mayor R. E. Overman, the city's new $3,500,000 spillway and dam some 32 miles west of the city, as the crow could fly quickest, will begin impounding the water of the rains and snows from a drainage area of 43.5 square miles.

Alum Fork river, now an almost dry creek, will become 100 feet deep piled up behind the dam. It's great swollen stomach will stretch out among the valleys like tenacles of an octupus and when the great storehouse is full, it will have a shoreline of 12 miles.

Nature to Fill Lake.

About December 1, the little artificial tunnel through the side of the hill that now carries the meek Alum Fork's waters way while the dam and spillway are being built, will be plugged securely and the workmen will sit back to watch nature in one of her great, enthralling achievements slowly fill up the great lake.

With the average year's rainfall of 45 inches, Burns and McDonnell, the engineers, estimate that only 12 months need elapse before the capacity of water impounded, (14,000,000,000 gallons) has been reached. The city, of course, can begin to draw upon the supply after three or four months.

At the average current consumption of only 2 1-2 billion gallons a year, the drain of Greater Little Rock upon the reservoir will be neglible—unless a prolonged drouth comes, and here the engineers, too, have provided for the emergency. The main reservoir itself can provide water for Greater Little Fock for three years without a drop's replishment, and even if this should come to pass—three years without rainfall—the emergency reservoir nearer the city would easly take care of the strain.

Spillway Is Valve.

The spillway, 300 feet wide at the top, serving as an emergency valve in case rainfall is excessive, will begin to discharge surplus water when the altitude of the reservoir reaches 740 feet above sea level. The altitude of the top of the dam itself will be 755 feet when completed, so that the water will never get within 15 feet of the dam's top.

The spillway and dam are separated by a natural mountain, the spillway being built in the valley to the north and the dam being constructed in the valley to the south. This separating hill will be an island poking its head up above the waters when the reservoir is filled.

The question of how the water will be brought into Little Rock over mountains and through dales is on the lips of many Little Rock users. Of course, gravity will play a major role—in fact, most of the time only gravity will be needed. The reservoir will be 228 feet higher than the city of Little Rock and the water, once started through the giant concrete pipes, will automatically deliver a never-ending stream to the city.

Project at a Glance.

But to give you a quick view of the size of the project, and to clarify the details of the enormous project, here are a few of the salient statistics:

PIPE LINE.

Length of pipe line.....32.4 miles
Diameter of pipe line.....39 inches
Type of pipe.....
.....Steel, Cylinder, Concrete
Length of pipe section.....16 feet
Weight of pipe section..8,000 pounds
Length of tunnel No. 1 (east)..
.....1,525 feet
Length of tunnel No. 2 (west)..
.....1,068.4 feet
Width of right-of-way.....50 feet
Maximum delivered capacity..
.....25,000,000 gal. per day

THE DAM.

Drainage area above dam.....
.....43.5 sq. mi.
Length of dam (exclusive of spillway) .....2,400 feet
Height of dam.....115 feet
Width of dam—bottom.....600 feet
Width of dam—top.....20 feet
Cubic yards of earth in dam...
.....1,500,000
Area of impounded lake..1,290 acres
Length of lake shore line.....
.....Approx. 12 miles
Quantity of water impounded (spillway elevation).....
.....14 billion gallons
Safe net annual yield of water shed with storage.....
.....10 billion gallons
Usable storage....11 billion gallons
Present annual demand, Little Rock and North Little Rock .....2 1-2 billion gallons
Elevation top of dam.....755 feet
Elevation spillway.....740 feet
Length of spillway.....300 feet
Capacity of spillway.....
.....225,000 gals. per second
High water level elevation..750 feet
Low water level elevation..725 feet
Normal water level elevation..
.....738 to 740 feet
Difference in elevation between surface of lake and filter plant receiving basin...228 feet

CLEARING.

Clear lake of all trees, houses and debris.
Clearing required.....1,400 acres
Stumps and roots removed 280 acres

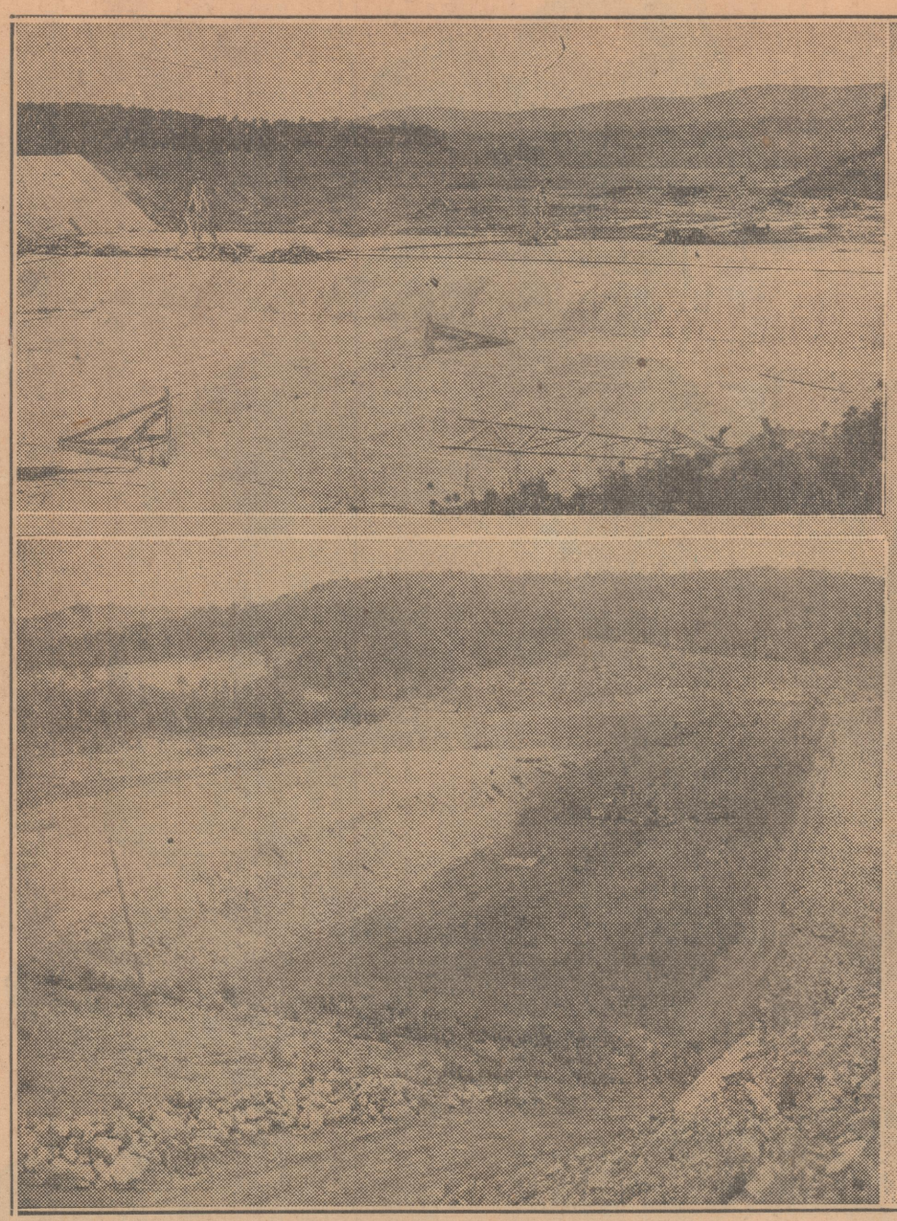
FILTER PLANT.

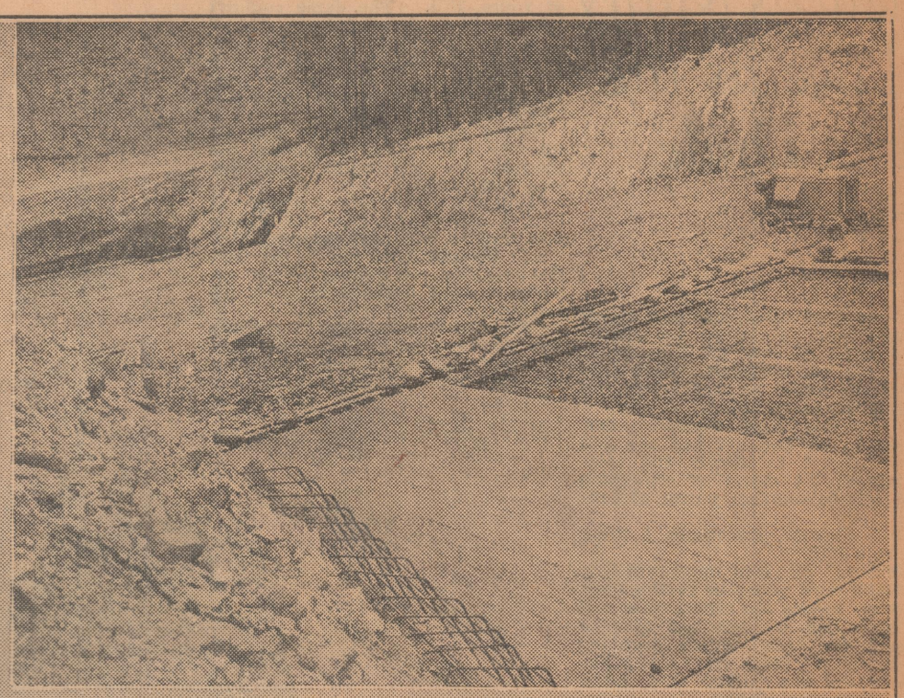
Capacity (minimum) .....
.....8,000,000 gals. per day
Location: South slope of Water Works hill.
Features: Automatic regulation of chemical feed.
Modern methods of feeding and mixing chemicals.
Centralized control of all operations.
Three-story modern brick and reinforced concrete.

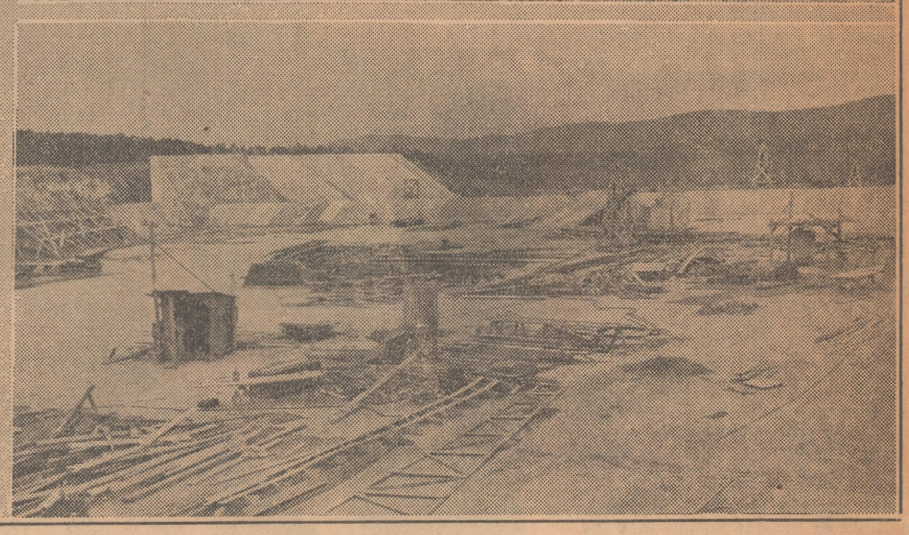
EMERGENCY RESERVOIR.

Length of dam.....1,700 feet
Height of dam (maximum) 65 feet
Width at bottom..... 325 feet
Width at top..... 20 feet
Area of reservoir..... 25 acres
Capacity of reservoir 120,000,000 gal.
High water elevation..... 540 feet
Difference in elevation between reservoir and filter plant 30 feet
Cubic yards of earth in dam 243,000
Location of reservoir—1 1-2 miles west of city limits on Highway No. 10.

Here's Where City's Fresh, Sweet Water Supply Will Start







—Democrat Staff Photo.

Upper left shows a close up of the top of the concrete spillway in the city's $3,500,000 waterworks project on Alum Fork river some 32 miles due west of the city by airline and 48 miles by road; the spillway will act as a safety valve to protect the dam in an adjoining valley and when the water level in the great reservoir behind it comes within 15 feet of the top of the dam, it will flow over the spillway to hold the water at that level. As you look into the picture, you see the empty reservoir over the top of the spillway, with the trees and shrubbery having been cleared away; huge draglines in the dim distance, scooping up dirt from the dam, can barely be seen. Upper right is the outside end of the spillway, down which the water will casade when it flows over the top of the spillway (the photgrapher here was standing at the very top); note the rock wall on the opposite side through which it was necessary to cut. Lower left, an almost-birds' eye view of the great half-mile dam being built between two mountains in the valley immediately south of the valley containing the spillway. The top of this dam will be 755 feet above sea level, some 15 feet higher than the spillway's top; the highest portion at the extreme left of this picture is still 45 feet too low; draglines and trucks are working 24 hours a day to make this enormous fill ready by the time that winter rains set in along about November or December. Lower right is another view of the top of the spillway, giving an idea of its width. This, too, is looking west into the reservoir.

Pipeline To Alum Fork Completed

City Water Supply

Gazette 7-2-37

The last length of pipe in the 32.4-mile pipeline from the Alum Fork dam site of the new water supply project was laid Wednesday afternoon near the Twelfth Street Pike about 10 miles from Little Rock. Mayor Overman said yesterday. The Lock Joint Pipe Company, contractors, and S. E. Evans, subcontractor, completed the line four months ahead of schedule, the contract price was $1,561,000.

Seven miles of the concrete and steel line have been tested. Engineers plan to test the remainder within the next two weeks. The line can be connected to the city system as soon as control valves are installed and right-of-way beautification is completed.

Recently Completed Plant To Give Benton Abundance Of Pure Water for Years

Gazette 7-11-37

Benton—This city's new $39,000 water system, recently completed, was formally approved by the city council this week and was taken over from the contractors.

John L. Young, superintendent of the plant, shortly before the approval, reported that the system was in excellent working order, and that contractors had carried out all work as specified. R. E. Williams, city engineer, also approved the project for the Public Works Administration the agency through which the improvement was financed.

The project includes a filtration and coagulation building, better pumping equipment, and concrete storage reservoirs.

The filtration and coagulation building, located beside the city's electric light plant, is said to be as up-to-date as any in the state. The rapid sand filter method is used to purify the water. Two such filters are enclosed in the building, permitting the washing and cleaning of one without interruption of operation of the other. Each filter has a capacity of 360,000 gallons per day, or a total in the new plant of 720,000 gallons a day at the normal rate. The coagulation basin allows proper settlement of the water after the chemicals have been added.

The new "raw" water storage reservoirs are located in the west part of Benton near the city limits. There are two of these, each made of concrete, and each with a capacity of 500,000 gallons. This is double the capacity of the old earthen one.

The McGeorge Construction Company of Pine Bluff was the contractor.

Since the new system has been put into operation much praise has been given it by visitors to Benton. One of these visitors, M. Z. Blair, chief engineer of the state board of health, wrote the following letter to Mayor L. B. White congratulating Benton citizens on the project:

"To the mayor: The construction of the new water purification plant at Benton is practically completed and we wish to express our sincere appreciation of the very thorough manner in which this work was carried out by your engineer and contractor. Our observations show that both the design and construction were carried out with painstaking care, with the result that Benton will be provided with a most modern and efficient plant. It is our feeling that the new plant will enable you to more economically produce a water of continuously high degree of purity.

"The city officials of Benton are to be congratulated upon the very successful consummation of this project."

Well Supplying Cabot's Water System Nearly Dry.

7-25-37

Special to the Gazette.

Cabot, June 24.—Cabot's 522-foot well, from which the town expected to obtain an adequate water supply, is nearly dry and patrons of the water system have been requested to conserve water. The contractor was notified of the diminishing supply, but he said that it was somebody's else worry, because he guaranteed water for only one year, and the year has passed. However, the commissioners of the district notified the contractor's bondsmen today of their intention to file suit.

Burke Warns President to Stay at Home

Nebraskan Fears Western Swing Would Mean Party Purge.

Washington (UP)—Sen. Edward F. Burke, D. Neb., Saturday night warned President Roosevelt that a personal tour of western states to muster sentiment against Democratic rebels in congress would be "ruinous" to the administration.

The stock Nebraska senator, one of the leading foes of the president's defeated judiciary program, said that persistent suggestions that Mr. Roosevelt was planning a swing through the west "clearly indicates" intention to attempt a purge of the party.

"It would be the final clear indication of a party purge directed against all who are unwilling to line up with the statement of Democratic National Chairman James A. Farley that the president should have anything he wants," Burke said.

Although Farley has emphasized that there would be no reprisals against Democratic rebels except those which the voters might see fit to inflict, the insurgents generally viewed reports of a presidential trip as a move against them.

Five State Tour.

ships without likelihood of outright collision with the British government. Good rail service feeds to the interior of China from Hong Kong. Airplanes imported from abroad for the Chinese armies might be assembled there and flown to air bases in the interior.

Britain Further Aggravated.

London (UP)—The halting of a British refugee ship by Japanese warships at the mouth of the Whangpoo river Saturday night aggravated Great Britain's anger over the machine-gunning of her ambassador to China.

The refugee vessel, the 3,000-ton freighter Shengking, is under charter to British naval authorities to aid in removing refugees from Shanghai to Hong Kong and to provide supplies for British army and naval forces in the war zone.

The halting of the Shenkking off Woosung was the first instance of Japanese interference with foreign shipping under the new naval blockade of 800 miles of China's coasts, from Swatow in the south to the mouth of the Yangtze in the north.

The commander-in-chief of Britain's naval forces in the Far East was reported to have forwarded an immediate protest to the Japanese authorities and to have demanded an explanation.

Reports of the halting of the Shengking attained great interest in London where public opinion—and anxious foreign diplomats—awaited disclosure of the contents of the formal British protest demanding "fullest satisfaction" for the attack on British Ambassador Sir Hughe Knatchbull-Hugessen by a Japanese warplane.

J. L. Dodds, counsellor and charge d'affaires of the British embassy in Tokio, will deliver the protest. It was understood Britain was asking an indemnity and an apology, as well as rigid assurances guaranteeing British subjects in China against any similar attacks.

Many observers believed that Tokio would not take an out-

City's Levee Project Will Use 300 Men

Engineers Await Free Rights-of-Way Before Asking for Bids.

$455,000 Is Involved

Construction, to Start Soon, Will Require More Men.

When the rights-of-way have been obtained by Greater Little Rock, the United States engineers are ready to launch the $455,500 levee and seawall project that will bridle the obstreperous Arkansas river to keep it out of North Little Rock's business section and out of the low places around Little Rock itself.

The projects were authorized by Congress in the omnibus flood control bill and allotment has been made of $110,500 for the Little Rock levee and $345,000 for the North Side levee-seawall.

Construction will require about five or six months for each project. It probably will be several weeks before work will begin. It is estimated that 100 men will find employment on the Little Rock project and twice that number on the north side project.

The two projects will be built by private contract on low bids submitted to the Engineer office. When construction work is to begin, advertisements will be published by Lieut. Col. Stanley L. Scott, district engineer, for bids.

Has Two Sections.

The Little Rock project has two sections, as noted on the map to keep high water back from low places in the city. The west half will begin north of the Riverside golf course and following the general course of the river to near the Lincoln avenue viaduct. It will make use of existing levees or will enlarge them. The east half will begin at high ground near the north end of Bond street and extend eastward to high ground about the city limits.

The length of the two sections is 4.1 miles and nearly 300,000 cubic yards of levee will be built.

The North Little Rock protecting wall will begin near the rock crusher plant at the foot of Big Rock. An earth levee will extend from there to 700 feet east of the Missouri Pacific bridge. A seawall will extend from there to the Broadway bridge and then a levee between the Broadway and Main street bridges. Another concrete wall will extend from the Main street bridge to 600 feet east of the Rock Island bridge where it will join a levee extending to high ground near the Cotton Belt shops. There will be 5,325 feet of concrete wall and 10,705 feet of earth levee, a total of 2.9 miles.

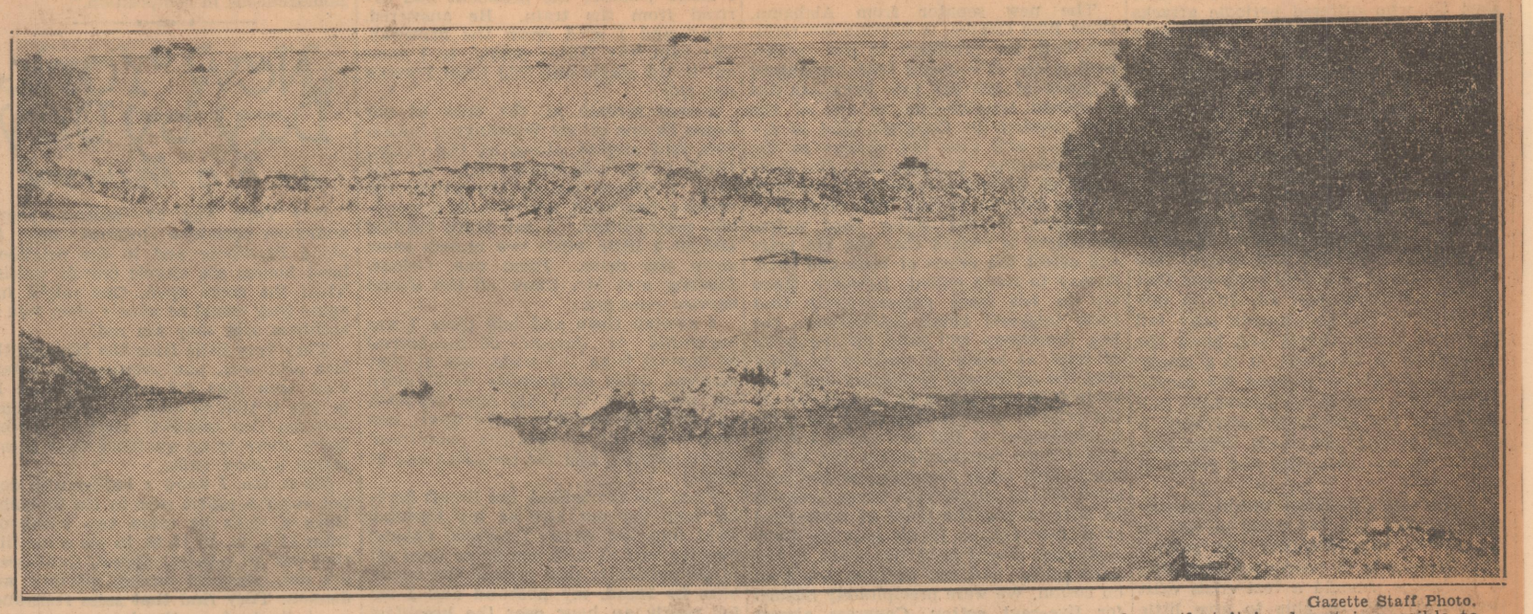
Levee 8 1-2 Feet High.

The average height of the structure in North Little Rock will be 8 1-2 feet, three feet higher than 1927 high water. The levee will have an eight-foot crown, except for about 2,200 feet west of the Missouri Pacific bridge to Vestal's greenhouses, which will have a 24-foot crown for a roadway. The levee will contain about 123,000 cubic yards of earth.

A hearing will be held at 2 p. m. Tuesday at the city hall on a proposal for flood control works southeast of Little Rock at the junction of Fourche Bayou and the Arkansas river and also for proposed works on the south bank of the Arkansas river between Little Rock and Fort Smith. Information is desired, according to the announcement of the hearing, on the type of flood control works desired and the amount of land that would be protected.

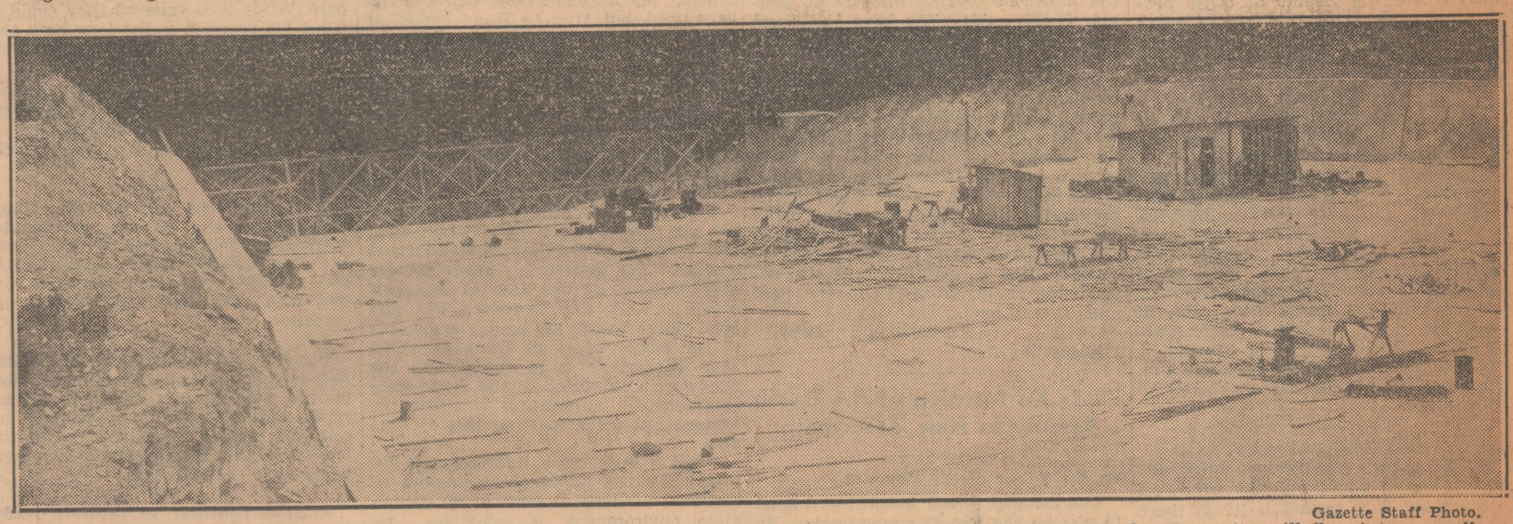
CONTRACTORS WORKING DAY AND NIGHT TO COMPLETE HUGE RESERVOIR SO THAT CITY CAN HAVE NEW WATER SUPPLY IN FEBRUARY

Gazette 8-29-37



Gazette Staff Photo.

This picture of the dam was taken about 200 yards below the 100-foot high structure. The dam is so large that it is almost impossible to obtain a complete picture of it. About half of its length is shown. Six hundred feet wide at the bottom, the dam is terraced to a width of 20 feet at the top. It will be 115 feet high when completed. The trucks on top of the dam are spreading dirt which has been taken from borrow pits above the dam. Sheeps-foot-rollers and sprinklers follow the trucks and pack the dirt until it is more compact than surrounding mountain formations. The pond in the foreground was caused by damming up the creek in order to obtain water for sprinkling. Towers supporting lights for night work can be seen at the extfeme left end of the dam.



Gazette Staff Photo.

The concrete spillway is 300 feet long and will carry the overflow during flood stages after the lake is filled. The water will flow into a small valley below the steel foot bridge which can be seen in the background. The bridge will enable visitors to cross from the picnic grounds and observation platform to the dam.

A small, sparkling mountain stream soon will displace the muddy, mighty Arkansas river as a source of water for Little Rock and North Little Rock. Engineers constructing the $3,500,000 water supply project predict the fresh, soft mountain water will be in city mains by February. Completion of the huge, earthen dam on Alum Fork within a few weeks, will mean sufficient fall and winter rains can be stored to provide enough water for use of the two cities. Crews are working day and night at the dam.

The earthen dam being constructed on the Alum Fork of Saline river, 33 miles west of Little Rock, will be completed by September 12, Alvin Hall, superintendent for L. O. Brayton & Co., contractors, said yesterday. The 2,400-foot mound has reached a height of 100 feet. When completed, it will be 115 feet high and impound a lake of 1,290 acres or slightly more than two square miles.

The entire water supply project is more than two-thirds completed. Three of the seven contracts awarded are finished, the dam is practically complete and the remaining contracts will be completed in 1938. The lake site has been cleared of trees, houses, and debis at a cost of $52,300. A Forest Service road 5.8 miles long which would have been inundated by the lake has been relocated at a cost of $40,190. The 32.4-mile pipeline from the dam to Little Rock has been completed at a cost of $1,603,000. The dam will cost about $960,000 upon completion.

Other Contracts.

Jobs which will be completed by 1938 are the auxiliary reservoir west of the city, to be completed at a cost of $96,611 and the filteration plant being erected at the reservoir on Ozark avenue at a cost of $223,353.93. L. O. Brayton & Co. will move part of its equipment to the auxiliary reservoir after completion of the main dam to aid Contractor S. E. Evans. Difficulty is being experienced at the auxiliary dam because of a lack of suitable earth.

L. O. Brayton & Co. has the largest fleet of Euclid Trac-trucks in the South and the fifth largest in the United States at work on the main dam. Sixteen huge tractors with trailer bodies capable of carrying from 11 to 14 cubic yards of dirt are working day and night to finish the dam.

Lake to Be Filled Soon.

Marion L. Crist, resident engineer for Burns & McDonnell, project engineers, said the conduit through the dam would be closed this week and storage of fall and winter rains begun. The annual yield of the 43 square-mile watershed will be 4,000,000,000 gallons of water in the driest years and 14,000,000,000 in normal years. The lake will fill in one year of normal rainfall.

When filled, the lake will contain enough water to serve Litte Rock and North Little Rock for 3 1-2 years without additional rainfall. The lake will be 4 1-2 miles long with a shore line of approximately 14 miles. It will store 14,000,000,000 gallons of water, of which 11,500,000,000 gallons will be usable.

Designed for Future Needs.

Water will leave the lake through a pipeline from the intake structure, pass through two tunnels under small hills near the dam and then enter the pipeline to the city. The capacity of the pipeline is 23,000,000 gallons of water per day. Present consumption is about 6,500,000 gallons for Little Rock and North Little Rock. A pump could be used to increase the capacity of the pipeline to 25,000,000 gallons per day. It is estimated, however, that the pipeline will serve until about 1975 or until the population of the two cities is doubled.

Spillway Capacity Large.

At the east end of the dam is a natural saddle where a concrete spillway 300 feet long has been completed with a discharge channel to carry flood waters back to a tributary of the main stream below the dam. The spillway is capable of carrying 30,000 cubic feet of water per second, which is the equivalent of a river 300 feet wide and 10 feet deep flowing at the rate of 10 feet per second. In the discharge channel below the spillway crest, the water will have a velocity of 70 feet per second or nearly 50 miles per hour. Its tremendous energy will be dissipated against a mountain side.

Observation Platform.

Overlooking the spillway and dam and much of the lake, the caretaker's cottage and garage have been erected on a small knoll. In front of the house there is a flagpole in a small plot surrounded by a native stone wall. Steps lead to a parking plaza constructed at the edge of the spillway, near an observation platform. A steel bridge has been constructed over the spillway.

Pay From Profits.

The water supply project cost will be amortized by profits earned from municipal distribution. The distribution system of the Arkansaw Water Company was bought at a cost of $3,850,000. In the first nine months of municipal operation, cash surplus amounted to $212,399. Revenue derived from municipal operation will be sufficient to pay for the distribution system, according to estimates.

Storing of Water in New Reservoir Begun.

Gazette 9-2-37

Storage of a new water supply for Little Rock began Tuesday when the conduit at the Alum Fork dam was closed, Mayor Overman was told yesterday by Marion L. Crist, resident engineer. About two inches of rain fell Tuesday and the new lake is expected to begin forming soon, Mr. Crist said.

All earth will be placed in the dam by September 12, construction engineers said. Concrete gutters and riprapping and clean-up work around the dam site remain to be completed.

Mayor Overman, Mr. Crist and D. H. Daugherty, member of the Board of Public Affairs, went to the dam yesterday afternoon. The lake will be Little Rock's water supply by February if normal fall and winter rains occur, engineers estimate. The conduit closed carried regular flow of Alum Fork under the dam while it was being constructed.

Little Rock's Water Supply

City Obtained Its First Water From Springs. Later Cisterns Were Installed. New Modern System Costing Millions of Dollars Is About Ready for Use.

as the springs and wells were inadequate to meet the needs of the fast growing community. In 1837, the City Council passed an ordinance calling for the construction of a system of public cisterns. Old records show their location as follows:

Two cisterns at Markham and Main.
One at Fourth and Main.
One at Third and State, now used as a manhole.
One at Fifth and Center.
One at Eighth and Main.
One at Third and Rock.

Another cistern with a capacity of 600 barrels was located where the Rainbow cafe is, in the alley then known as Elm street.

The old cistern on the grounds of the War Memorial building was government-owned and was placed there to protect the building from fire. Another government-owned cistern was on the old arsenal grounds. Later, when horse-drawn street cars were operated in the city, this cistern was made into a turntable for the cars. The chain of cisterns were filled with rain water and sometimes refilled from nearby wells. Their original cost was estimated at $12,503, but because of poor construction and faulty workmanship, the amount expended was nearer $15,000.

To have a plentiful water supply for fighting fires, the following ordinance was passed:

"It shall be unlawful for any person or persons to take even by bucket or pipe any water from any of the public reservoirs or cisterns of the city used for the extinguishment of fires."

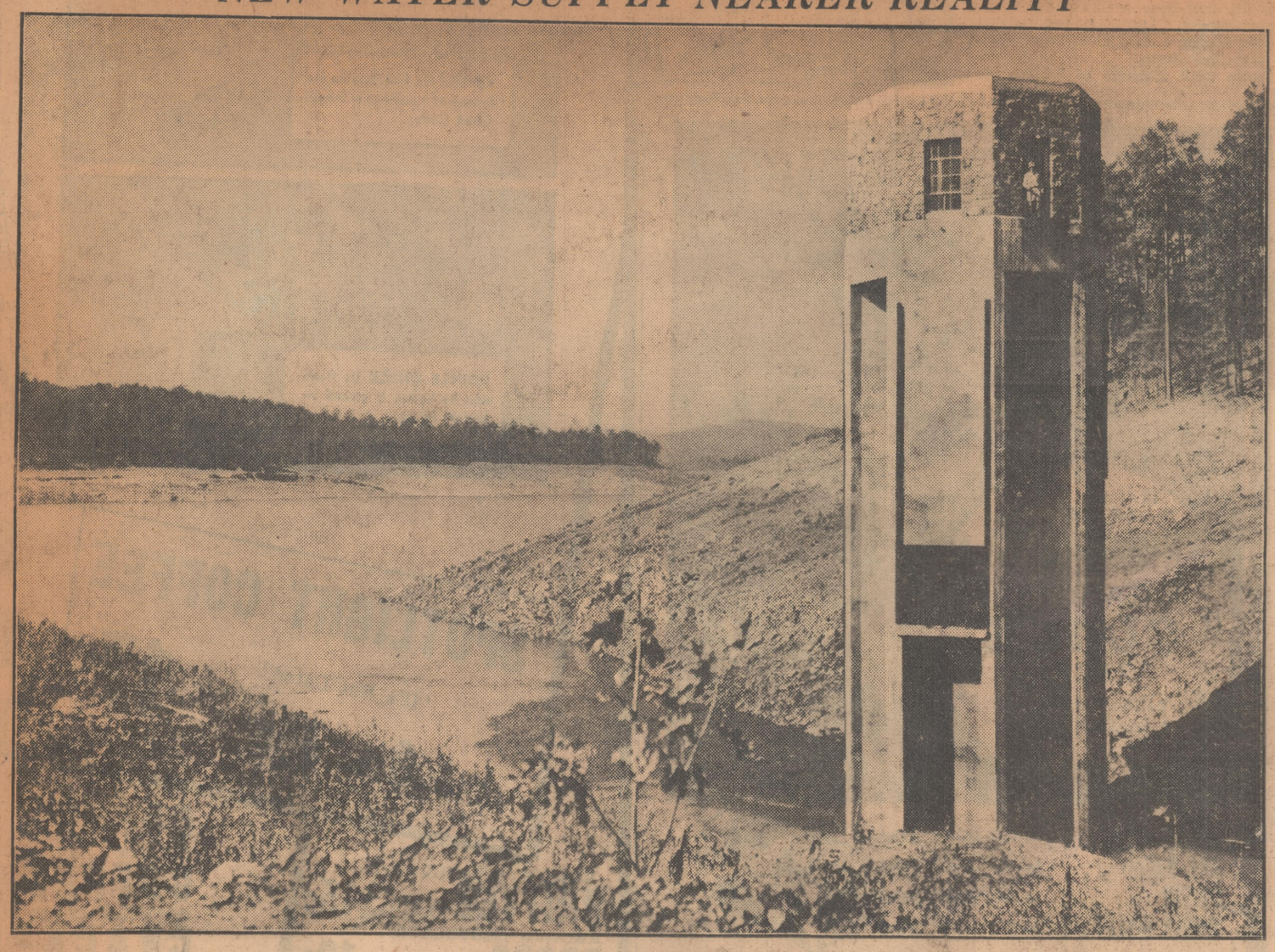
At the time the old fountain on the War Memorial grounds was brought from the Philadelphia Exposition in 1876, there was no running water in Little Rock and the fountain was placed on the lawn at the home of John Wassell. When water was piped to the statehouse in 1888, the fountain was moved to its present location.

The first movement to obtain a water system was begun in 1877, even though at the time the city engineer of Little Rock was having the cisterns repaired. The majority of the people took no stock in the talk of a water system. They were convinced that the cisterns were the only waterworks the city would have for many years to come.

That year the Home Water Company was formed by a group of enterprising businessmen and a franchise was received from the city. Markham, Main, Ringo, Sherman, Fifth and Ninth streets were selected for the main lines of pipes. At the organization meeting, John Wassell was elected president, Zeb Ward, vice president; G. P. Rumbough, secretary, and Logan H. Roots, treasurer. Within two years there was more than enough water for the people who then numbered about 20,000. The Home Water Company operated for several years and to take care of an increasing demand, a reservoir was constructed on the high hill overlooking the river. Just before the water was to be turned into the mains of the new system, the wall dividing the upper reservoir of the waterworks from the lower, gave way. More than 10,000,000 gallons of water rushed down the hillside and caused considerable damage.

In 1889, the Home Water Company sold its franchise and property to the

NEW WATER SUPPLY NEARER REALITY



—Photo by Richard E. Overman Jr.

. The tower in the foreground houses the intake through which water began flowing yesterday to the city from the Alum Fork reservoir of the $3,500,000 water supply project. Recent rains partially filled the reservoir, creating a lake two miles long, which engineers estimated would provide Greater Little Rock with a year's supply of water. The lake was about one-sixth filled late yesterday.

BASIN ON ALUM FORK COLLECTS YEAR'S SUPPLY

Pipeline Flow Diverted.

Gazette
~~11-12-37~~

A year's supply of water for Greater Little Rock had run into the Alum Fork reservoir 33 miles west of Little Rock last night, following six and one-half inches of rain this week.

Marion L. Crist, resident engineer for the $3,500,000 water supply project, said the flow into the lake would continue several days.

The heavy rain caused a 30-foot rise in the lake and filled it one-sixth full, Mr. Crist said. The lake is approximately two miles long now. The sudden rise, reaching above the first intake opening, caused the water to flow through the 32.4 mile pipeline to Little Rock. The valve at the filter plant was closed and the water diverted into the auxiliary reservoir just west of the city limits and south of Highway 10.

Mr. Crist and Richard E. Overman Jr., progress engineer, partially closed the valve at the Alum Fork intake tower yesterday. The restricted flow through the pipeline into the auxiliary reservoir should fill it within a week, Mr. Crist estimated.

Had the valve at the filter plant been open, a miniature flood through the area surrounding Pulaski Heights might have resulted. The water apparently reached the filter plant shortly before 1 a. m. Thursday morning. Engineers said they had not expected the rise to reach the intake tower so soon after the rain.

At 4 p. m. yesterday, Mr. Overman estimated that 6,000,000 to 7,000,000 gallons of water (approximately a day's supply for Greater Little Rock) was flowing into the reservoir hourly.

City Could Begin Using Water Soon.

Mr. Crist said an additional heavy rain would fill the lake to such an extent that the city might begin using the water if it desired. Additional piping at the filter plant to divert the water through the old filter system would be necessary. The new pipeline carries water to a new filtration plant which is under construction.

Crist said he did not know whether the city would wish to construct the additional pipeline. Under present plans, the new water supply will not be used until the filter plant is finished or neary finished, about the middle of February.

Present Bad Taste Due to Well Water.

L. A. Jackson, manager of the Municipal Water Works, said the unusual taste of city water the last few days was due to use of hard well water to augment the supply taken from the Arkansas river. The low river stage caused salt content of the water to increase and the deep well water has been used for dilution. It was impossible to soften the well water because of repairs under way at the filter plant. This intensified the taste of chlorine, he said. A rise in the river has made it possible to discontinue use of well water and as soon as the w ter now in the distribution system is consumed, the water will revert to its former taste, he said.

Radio Links Alum Fork Dam to City

Gazette 1-2-38

When Little Rock's new $3,500,000 water supply project is placed in operation soon it will have more unique angles than a Symbolist painting, a Gazette reporter concluded yesterday, after a stroll around the filter plant construction site.

Take this business of constant co-operation between the men at the lake-reservoir on Alum Fork, who control the flow of water into the 32.4-mile pipeline, and officials at the filter plant and distribution head here, for instance.

Obviously, there must be some fancy co-operation between the guardians of the dam and the directors of the water circulation here. There is a telephone line between the dam and the filter plant, but it's not exactly what you'd call a first-class affair.

Last winter, for instance, one storm accounted for 83 breaks in the line.

Radio Proves a Success.

For those moments, Richard E. Overman Jr., progress engineer for the project, explained yesterday, a shiny new $3,000 two-way radio communication system already has been installed, for "experimental purposes." After several weeks' trial it has become obvious the idea was a complete success, Mr. Overman contends.

The way it works is a little complicated. For instance, if the control man at the dam wants to know something in a hurry, he flips a switch on the radio transmitter out there. That act does something that turns on the receiver at the Little Rock end of the line. That flips another gadget that turns on a bell that would summon the Board of Waterworks Commissioners from their beds if turned on loud enough.

On the other (or dam) end a similar set of gadgets exists. But when men at the filter plant want action they can get even more noise into their call. A siren with a "listening distance" of approximately five miles will be installed to advise residents of Saline county that information is desired at Reservoir Hill in Little Rock.

Water Generates Power.

More complications include a rig at the dam which makes the water itself generate power to operate the radio outfit out there. Officials at the dam turned it on yesterday for the benefit of a reporter. It works all right.

Under terms of the license granted the Waterworks Board by the Federal Communications Commission, the 100-watt set may be used only in cases of emergency, and two hours a week for experimental purposes. The radio will be operated by licensed operators at the dam and inside the filter plant.

It operates on a frequency of 7.3 meters, or 41,000 kilocycles, and is licensed to operate 24 hours a day—for emergencies. Comparison of costs for a first-class telephone system and the radio shows that the radio equipment costs $3,000; a telephone system would have cost $8,000.

Gazette 1-16-38

There is an old legend connected with the site of Little Rock.

A man of the Great Spirit (thought to be one of the French Jesuit priests) was taken sick far up in the mountains. He was beloved by the Indians, and in an effort to save his life, they placed him among blankets in a canoe and journeyed with him toward the "Springs of the Sun." After many weary days, they landed on the high rock above the river and brought him water from a clear, cold spring near the bank (said to be the old spring in the rear of the War Memorial building). They killed a young deer and made broth in a copper kettle, but their efforts were unavailing. The man talked with the Great Spirit through the night, then called the Indians about him and delivered a prophecy.

"The day shall come when a multitude of paleface people will build a city above my body and they and their children's children shall be thicker than the birds in the grove."

The Redmen buried their friend and counselor high above the river, so no floods should touch his body and placed his ivory cross upon his grave.

The spring mentioned in this legend was known far and wide among the Indians and the site was one of their favorite stopping places.

Another well known spring of the early days is in the Pulaski county jail yard. A mining camp was once established at what is now the foot of Spring street, and the men used the spring. In the town's beginning, the spring furnished water for the greater portion of the inhabitants and later supplied steam for certain manufacturing enterprises.

On the western slope of Big Rock, a chalybeate spring gushed out of the mountain and made its way to the river. As the years went by, the water was found to have beneficial effects upon the skin and kidneys and the spot became a favorite summer rendezvous.

The many frame buildings in Little Rock soon constituted a fire hazard and it became necessary to provide some method of protecting property

Arkansaw Water Company which continued serving the people up to 1936.

As far back as 1876, the Arkansas river was considered unfit for human use. It was possible to clarify the turbid water, but the chlorides remained. Visitors coming to the city remarked on its beauty, its desirability as place of residence, on the friendliness of its people, but they "made faces" when tasting its water. Many industries sought other locations while some drilled their own wells and used their private water supply.

In 1889, two attempts were made to obtain another source of supply. Well water was utilized, but it was found necessary to go back to the river for the main supply. The system broke down in 1913, and the muddy river water was introduced directly into the pipes. At that time, there was further talk of diluting the river water with that from Little Maumelle, but the cost was held to be prohibitive.

The system was in jeopardy during the flood of 1927 when crews worked behind sand bags day and night, up to their waists in water, to save the plant at the river's edge from inundation.

In 1934 another attempt was made to find another source of water and the Chamber of Commerce Water Committee furnished funds to defray incidental costs of the investigation. The surveys were made by WPA labor under the direction of M. Z. Bair, sanitary engineer, and Dr. George Branner, state geologist. The conclusion was reached that the logical supply should come from Alum Fork of the Saline river. Succeeding investigations only confirmed that conclusion and today, the present dam is on the exact site selected at that time, and the pipe line follows the route suggested by Bair and Banner.

Before Mayor Overman took office, he secured options on the property involved and this step saved the city of Little Rock many thousands of dollars. The City Council instructed the mayor to go ahead, but warned: "You cannot spend any of the city's funds." The mayor had the estimates, but no funds nor prospects of getting them.

To secure federal aid, the city must have its own distribution system to have revenue with which to pay the loans. Many obstacles loomed and time was an important factor in securing a PWA grant. The water system was owned by a private company. It was making a good profit and in no mind to sell.

Mayor Overman convinced its officials that the people of Little Rock wanted good water and furthermore, they were going to have it. An agreement was finally reached by which the water company agreed to purchase an annual amount of water to pay interest and retirement costs, plus the cost of normal maintenance.

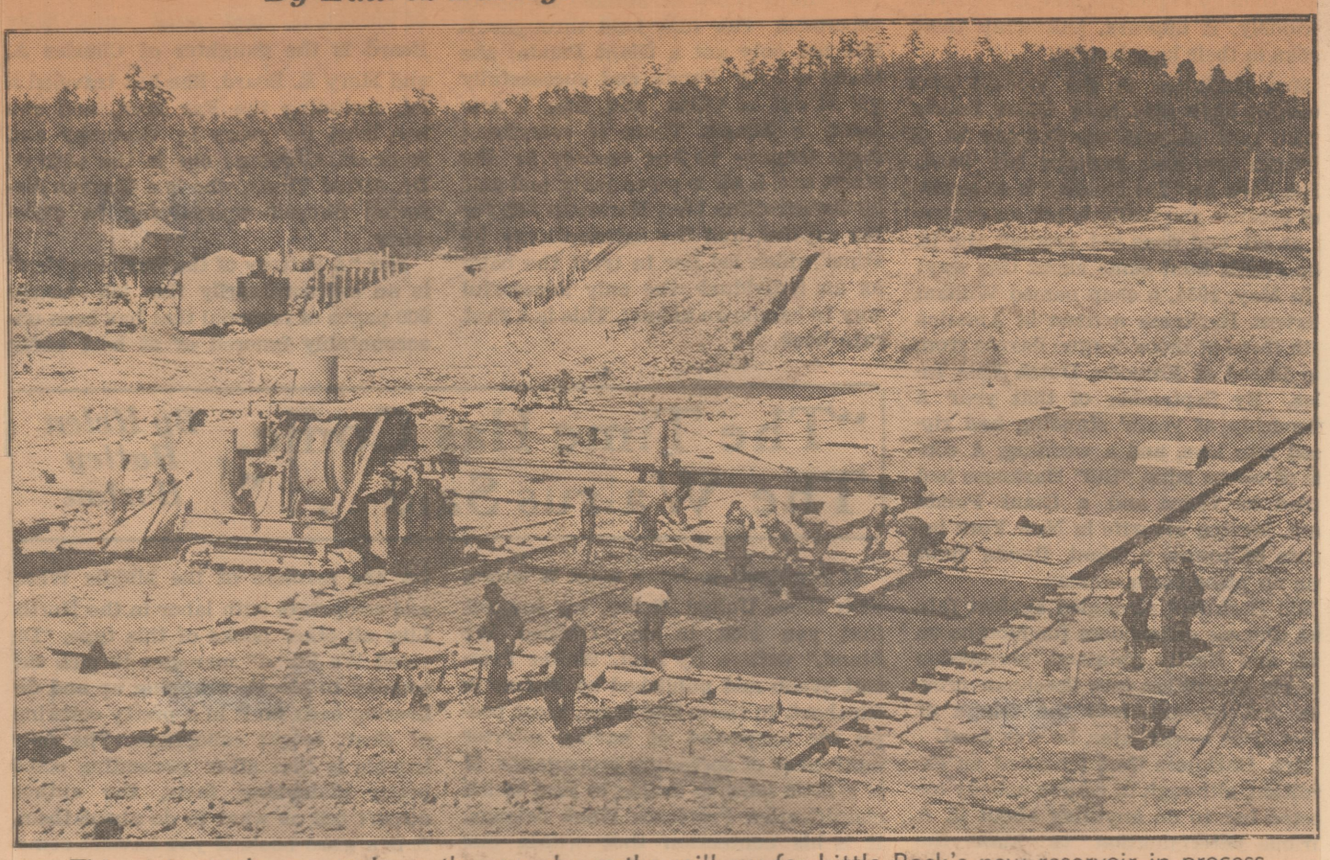
Burns & McDonnell Engineering Company was then retained to prepare plans and estimates in time to file application for a PWA loan, and Marion Crist, resident engineer, was placed in charge of all operations.

The time for filing the application was short, the amount of work involved great, and temperatures were near the century mark. The territory to be investigated was hilly, rocky and infested with ticks, chiggers, tarantulas and occasional poisonous snakes, but the application was filed within the time limit and the work on the final surveys began October 1, 1935.

The city and the water company reached an agreement on a price of $3,850,000 for the waterworks property, and since April 1, 1936, the city has operated the system and the construction for the new supply.

Nine hundred and eighty-nine pits were dug and the soil tested; 25 kinds of earth were put through laboratory tests to discover the percentage of moisture and water was forced through the various types to determine their resistance, for building a solid earth dam. The dam, when completed, was one-third more solid than the surrounding hills and just as thoroughly impervious to moisture as though it were made of concrete.

By Laurez Earley.



This picture taken several months ago, shows the spillway for Little Rock's new reservoir in process of construction.

The contract for the pipe line was let to the Lock Joint Pipe Company of Ampere, N. J. The line is constructed of reinforced concrete and is 32.4 miles long, with an internal diameter of 39 inches. Each joint is 16 feet long and weighs 4 1-4 tons. The fact that concrete pipe was selected was fortunate for Little Rock because it resulted in three-quarters of a million dollars more being spent locally for pay rolls and materials than would have been the case if cast iron or steel had been used. Under S. E. Evans, sub-contractor, two crews composed of common labor from the National Employment Service were used on the pipe line and these two teams distinguished themselves by their teamwork, as a friendly rivalry developed between them.

Alum Fork has a drainage area of 43 square miles, with an average rainfall of 48 inches, and it is estimated that the flow into the reservoir will be 14,000,000 gallons in normal years and 4,200,000,000 gallons in the driest years. The present source of supply will provide water for a city four times as large as Greater Little Rock. The lake, 4 1-2 miles long, has a shore line of approximatly 15 miles. At the west end of the dam is a natural saddle in which a spillway designed to carry 30,000 cubic feet per second, has been constructed to allow the excess water to flow out of the lake and into the stream below. Water for the twin cities will be taken from the lake at a deep point out from the spillway where a tower of octagonal shape has been erected, with four water intakes at different depths. Water for city use leaves the lake through a tunnel approximately 1,000 feet long, thence across a small valley in a pipe line, through another tunnel 1,500 feet long, then into the 32.4 miles of pipe.

At the westerly edge of the city limits is the auxiliary dam with a storage capacity of 92,000,000 gallons. Under emergency conditions, this reservoir will serve the city 10 days should it become necessary to shut down the Alum Fork line.

The old filtration plant has been enlarged by the addition of a new 8,000,000-gallon-per-day unit and the new supply is delivered to the reservoirs on the hill at the filter plant by gravity which eliminates the former costly operation of pumping.

City's New Wate Too Soft; Must Be Harden ed With Lime; Huge Saving in Soaps Seen

Democrat 1-24-38

Water so soft that it will have to be hardened somewhat is the promise of engineers and chemists when Little Rock's new supply from Alum Fork is turned into the distribution system here next month or early in March.

The layman is accustomed to thinking of softening water, but not of hardening it, so the idea probably seems a little queer.

The reason is this: Water which does not contain a certain amount of carbonates, one form of hardness, has a corrosive effect on pipes. Alum Fork is in this class. Therefore, enough lime will be added to harden the water to the point where this corrosive effect will be destroyed.

In contrast to the action of this untreated soft water, hard water, such as Little Rock has used for many years, leaves scale deposits in the pipes.

Engineers said the new water will not wash out the scale.

Analysis shows that Little Rock's present water supply averages 154 parts per million of hardness. The new supply is about 10 or 12 parts per million.

In other words, the new water is from 12 to 15 times as soft as the old.

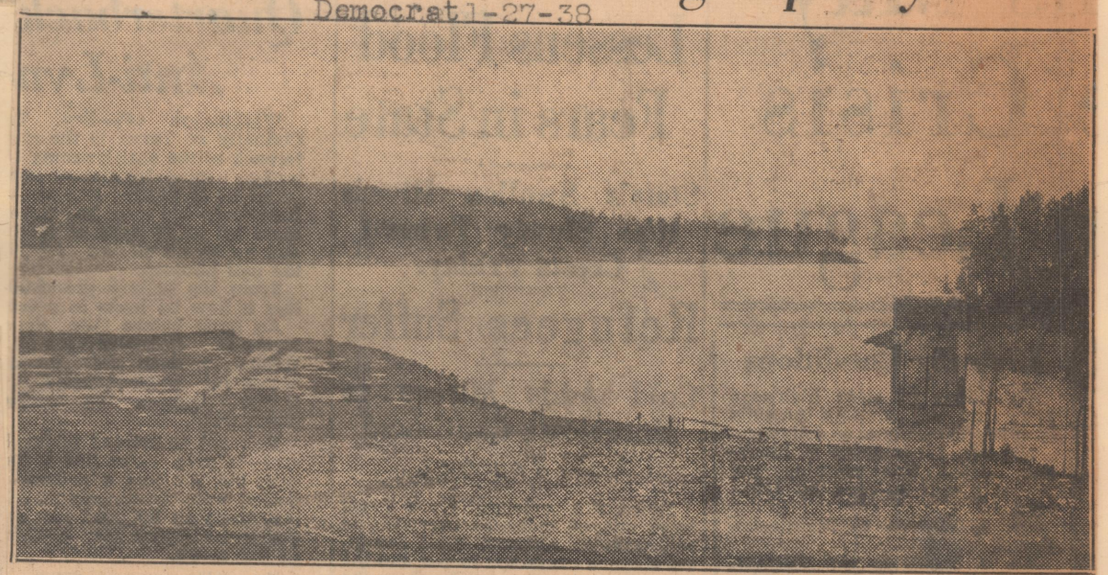
Officials expect that between one-third and one-half as much money will be spent in materials for treating water as is now spent. The present cost is around $18,000 yearly.

The biggest economy, however, will be that effected by consumers in soap bills. Engineers' estimates of a reduction of between $100,000 and $200,000 in purchases of toilet and laundry soaps, washing powders, shaving creams, etc., have been publicized previously.

Water hardness, chemically, consists of calcium and magnesium sulphates and calcium and magnesium bicarbonates and free carbon dioxide, which are washed down from the mineral deposits in the hills of Oklahoma and northwest Oklahoma into the Arkansas river.

New Reservoir Nearing Capacity

Democrat 1-27-38



This photograph, taken by Resident Engineer Marion L. Crist, shows Alum Fork reservoir of Little Rock's new water supply system almost to the top of the intake tower as a result of recent heavy rains. The water has reached a depth of 86 feet at the dam, (upper left) within 14 feet of the point at which it will start to run over the spillway (lower left). Mr. Mr. Christ estimated there was 8,600,000,000 gallons of water in the lake, 64 per cent of capacity. Of this total, 3,600,000,000 gallons come from the recent rainfall. Two years average supply for Greater Little Rock is stored above the lowest intake level.

Water at Alum Fork Lake Seeps Through Slate Beds; To Necessitate Grouting

Democrat 2-15-38

Forcing of concrete into slate beds in a localized area both adjoining and beneath the earthen Alum Fork dam of Little Rock's new water supply system to stop a slight seepage will start soon, Resident Engineer Marion L. Crist said today.

The seepage is through the natural earth and not through the dam, but if allowed to continue, might weaken the dam, Mr. Crist said. The condition is not unusual and is not alarming or serious, he said.

Treatment will be what engineers know as pressure grouting. Mr. Crist explained that deep holes will be drilled into the earth at intervals of 10 feet for about 100 feet and that cement will be forced into these holes under pressure. The pressure will force the cement into the open veins of the slate formation, filling the crevices and making them water tight when the mixture hardens.

Pressure grouting of the entire base on which the dam rests was considered during construction, but was decided against. The localized treatment, which will cost less than $5,000, will be less expensive than treating the entire base would have been, the engineer said. There has been no other seepage. The work was authorized by the Water Works Commission.

Work to Stop Seepage at Alum Fork Dam Explained.

Gazette 2-16-38

Pressure grouting for an area at the east abutment of the Alum Fork dam to prevent seepage is not unusual and not unexpected, Marion L. Crist, resident engineer for Burns & McDonnell, water project engineers, said yesterday in announcing that grouting had started.

The seepage discovered was through the natural earth near the spilway and was not through the dam. It is necessary that grouting, or forcing concrete deep into the earth where the seepage is occurring, be done to protect the dam. The present grouting will cost less than $5,000 while to have grouted under the whole base would have been an expensive project, he said.

WATER OF ALUM FORK IS HEADED FOR CITY MAINS

In Use Late Today Or Tomorrow.

Gazette 2-19-38

Soft water from the Alum Fork reservoir, Little Rock's new source of water supply, created at a cost of $3,500,000 by construction of a dam on Alum Fork of Saline river, was started toward the Greater Little Rock distribution system at 9 Thursday night, Herbert L. Thomas, chairman of the Board of Waterworks Commissioners announced last night.

It is estimated that at least 40 hours will be required for the soft water to reach faucets in the homes of consumers.

Mr. Thomas said that the Alum Fork water had been made available to meet an emergency created by the Arkansas river flood. Advised that the Arkansas river was expected to reach a stage of 31 feet here Tuesday, the board ordered the water turned into the filter plant mains. The new filter plant has not been completed and the old filter plant beds will be used to treat the water.

Commission Stresses Cautions to Consumers.

The following cautions to consumers were stressed by Chairman Thomas:

The Alum Fork water has been turned into the mains three weeks in advance of schedule to meet an emergency.

The new filter plant has not been completed and several chemicals designed for treatment of the Alum Fork water have not been received.

The resultant quality of water will not be so high as will be possible when full use of the new filter system is possible.

A reddish tinge may be noticeable in the water but the discoloration will not impair its purity.

The discoloration may be caused by encrustations in the distribution mains.

High River Stage Threat To Pump Plant and Intake.

It is not planned to return to the Arkansas river supply, Mr. Thomas said. If it is found that the old filter equipment cannot be used adequately on the Alum Fork water, the present arrangement will be continued until completion of the new filter plant, expected in about three weeks. It was explained that high stage of the Arkansas river had interferred with operation of the intake supply of the old system.

Mr. Thomas recalled that in 1927 hundreds of persons worked frantically to save the waterworks pumping plant on the bank of the river so that the city's water supply could be maintained. Because Alum Fork supply was available the present emergency has been met more easily, he said.

Reservoir Filled With Three Years' Supply.

The Alum Fork reservoir filled completely Thursday night and 15 inches of water was pouring over the spillway late yesterday afternoon. The spillway is 100 feet above the base of the dam. The water was reported rising slowly, although rains in the area have ceased. Marion L. Crist, resident engineer for the project, estimated 1,500 cubic feet of water per second or 540,000 gallons per minute were flowing over the spillway. The run-off is expected to continue several days.

The reservoir contains 14,000,000,000 gallons of water, 12,500,000,000 of which are usable, he estimated. The amount is equivalent to a three-year supply for Greater Little Rock without additional rainfall. Should rainfall be no greater than the lowest ever recorded in the area, the supply would last more than five years, he said.

The diversion conduit under the dam was closed August 31, 1937 but it was not until November 10 that a heavy rain occurred which stored water in the lake. The lake has filled in about four months, refuting skepticism of natives and many Little Rock residents.

The present lake has a shore line of 12 miles and stretches 4.2 miles back of the dam. The lake covers 1,290 acres.

Work of Nearly Three Years Brought to Culmination.

The soft water has a long story. Mayor Overman was elected on a campaign promise to provide a new water supply and his struggles throughout 1935 and 1936 finally resulted in PWA-financed acquisition of the Little Rock properties of the old Arkansaw Water Company and a PWA-financed $3,500,000 project for construction of a new source of supply.

The city issued $6,590,000 in bonds to pay for the two projects, $2,500,000 of which was for construction. The PWA made a grant of approximately $1,000,000 to the city.

The Burns & McDonnell Engineering Company of Kansas City, Mo., was hired as engineers for the construction project.

At first planned to include only the Alum Fork dam and the 32.4-mile pipeline from the reservoir to the city, savings on contracts awarded made possible building of a $96,611 auxiliary reservoir just west of the city for use in case of a breakdown of the pipeline and a $224,325 filter plant which will double the capacity of the city's filteration plant.

The construction, started in September, 1936, was completed in six separate contracts. The largest contract was for the pipeline, awarded to the Lock Joint Pipe Company which constructed the line at a contract price of $1,561,682.72. S. E. Evans of Fort Smith was sub-contractor.

The Alum Fork dam was built by the L. O. Brayton Company of Dyersburg, Tenn., at a contract price of $921,726. There were several sub-contractors.

M. E. Gilloiz Company had the contract for clearing the lake site and relocating a Forest Service road which was inundated by the lake The clearing contract price was $52,300 and the road relocation contract price was $40,190.

S. E. Evans constructed the auxiliary reservoir which holds 92,000,000 gallons, enough for a 10-day supply for Greater Little Rock.

The filter plant, which will be completed in about three weeks, is being built by William Peterson of Little Rock and the Municipal Service Company of Kansas City, Mo. Contract price is $224,325.

The present project was achieved only after many discouragements. At one time, the PWA was willing to finance a project whereby the city would have constructed a new source of supply through issuance of bonds and the water would then have been sold to the Arkansaw Water Company by the city. The project later was disapproved by the PWA and a new application for acquisition of the company's property and construction of a new source of supply was necessary.

The latter project was approved and the bonds sold to New York bond houses. The city paid $3,850,000 to the Arkansaw Water Company and took over operation of the property April 1, 1936.

In 20 months of operation, a surplus of $436,382.08 has accumulated in the sinking fund. Operation in 1937 showed a net profit of $252,583 with a gross income of $600,153.59. Fixed charges for bond and interest payments amounted to $169,257.33 and operating costs reduced net profit to the figure shown.

Under terms of the non-trust indenture, a rate reduction cannot be granted until 1941. The stipulation is to insure that a reserve will be built up to guarantee future payments but the accumulation in the sinking fund in 20 months of operation shows that a rate reduction can be made when the trust indenture allows.

ALUM FORK RESERVOIR'S RAGING SPILLWAY

—Gazette Staff Photo.

The huge reservoir created on Alum Fork of Saline river, 32.4 miles (airline) west of Little Rock, created to supply the city, was filled to overflowing yesterday, and five feet of water was raging down the spillway. Water from the Alum Fork pipeline was turned into the old filters Thursday night, and will reach consumers tonight or tomorrow. High stage of the river endangered the Arkansas river supply and caused the Alum Fork water to be used three weeks ahead of schedule to meet the emergency.

Filter Building Work Near End

Democrat 2-27-38

Water Supply System Unit to Be Completed in Week.

The new filter building for Little Rock's water supply system apparently will be finished and equipped within approximately another week, W. H. Williams, vice chairman of the board of waterworks commissioners, said last night.

He said Resident Engineer Marion L. Crist reported both contracts on the unit substantially complete. William Peterson of Little Rock is contractor for the building, and the Municipal Service Company of Kansas City is contractor for installation of equipment.

Liquidated damages provided for in the contracts for delayed completion began to operate against the contractors after last night, according to an order of the commission, several weeks ago. Mr. Williams said the question of damages had not been discussed further at recent commission meetings.

Mr. Williams said WPA officials had agreed tentatively to landscaping around the filter plant and development of a recreation area, including a swimming pool, below the auxiliary reservoir as WPA projects. The commission has allotted a maximum of $7,500 annually for three years to be used for landscaping and recreational development.

Mayor Overman, a visitor to the main reservoir on Alum Fork of Saline river yesterday afternoon, reported that pressure grouting already has reduced amount of seepage through slate beds adjacent to and beneath the dam. Only a small part of the grouting has been completed.

MARION L. CRIST WILL BE CITY'S WATER ENGINEER

Appointee Designed Big Dam.

Gazette 3-2-38

Marion L. Crist, resident engineer for the city's $3,500,000 water supply project, has been appointed engineer and public relations counsel for the Little Rock Water Department, Herbert L. Thomas, chairman of the Board of Waterworks Commissioners, announced yesterday.

The appointment will become effective upon completion of the project which has made soft water available to Little Rock from Lake Winona on Alum Fork of Saline river. Completion is expected by March 15 when the new filter plant is expected to be finished.

Mr. Thomas said he felt Mr. Crist's training and experience made him particularly fitted to handle the activities of the enlarged Little Rock system.

The addition of Mr. Crist is not an enlargement of the personnel of the Water Department, he said, but an action which had been deferred by the city since it acquired the system from the Arkansaw Water Company. The Arkansaw Water Company formerly had its engineering work done in New York city, along with much of its legal work and its policy making.

Engineering duties will include evaluation work, appraisals, compilation of rate structures, new construction and co-ordination of general activities. Since Mr. Crist's experience as an engineer has included work as counsel for cities in such utility activities, the Board of Commissioners believed him well qualified, Mr. Thomas said.

Crist Will Appraise, Map Water System.

Under the terms of the bond trust indenture, the city agreed to have an inspection of the waterworks system made once every five years by a competent waterworks engineer, Mr. Thomas said.

Mr. Crist can make the inspection and report at much less expense than if outside engineers had to be hired, Mr. Thomas said. The amount of salary involved was withheld.

One of the first tasks which will face Mr. Crist will be mapping the water distribution system.

L. A. Jackson, operations manager of the Water Department, said in regard to Mr. Crist's appointment: "Under private ownership, the engineering for the Little Rock plant was furnished by the New York organization; therefore in view of the construction of the new system of supply, in addition to our regular activities, it is essential that we have a resident engineer; and I feel that we are fortunate in having Mr. Crist associated with the Little Rock Water Department."

Appointee Designed Alum Fork Dam, Pipeline.

Mr. Crist, 33, a graduate of Leland Stanford University with the degree of civil engineer, was employed by the Burns & McDonnell Engineering Company of Kansas City, Mo., immediately after his graduation in 1925. He remained with them until 1933, spending eight years in their Los Angeles (Cal.) offices. From November, 1933, until June 1934, he worked for the Metropolitan Water District of Southern California making investigations and economic studies for the location of the Colorado river aqueduct and appurtenant dams. He returned to Burns & McDonnell in 1934.

His work with Burns & McDonnell, engineers for the Little Rock water supply project, has been entirely in the utility field. It has included the design and construction of water, sewer and electric systems in 20 cities and appraisals or reports on such systems in 16 other cities. His work has taken him into 12 states either as a designer or supervisor of construction work or as an appraiser of utility systems.

Mr. Crist first came to Little Rock in August, 1935, to assist in making preliminary application for PWA funds. He returned and assisted in making designs for the project. In February, 1936, he came here permanently as resident engineer for the project.

He is the designer of the $1,561,682.72 pipeline constructed from the Alum Fork dam to the city and wrote the specifications for the Alum Fork dam, auxiliary dam and pipeline. The 32.4-mile long pipeline was the largest single contract of the water supply project.

"In my two and one-half years in Little Rock helping to build the new water supply, I have made many new friends and formed many pleasant acquaintances," Mr. Crist said. "It is with sincere pleasure and anticipation of continued pleasant relationships that I am accepting the post with the Water Department.

"It will be my honest effort to serve that department and, through it, the citizens of Little Rock to the best of my ability. I welcome the opportunity to assist in making Little Rock a finer place to live and a greater city."

Mr. Crist is a member of the American Society of Civil Engineers, the California Sewage Works Association, the Arkansas Engineers Club and the American Water Works Association. He is a licensed engineer in California and Arkansas and holds national registration certificate under which he may practice engineering in more than 40 states.

Water Board's Beautification Plan Outlined

Gazette 3-3-38

W. H. Williams of the Board of Waterworks Commissioners outlined plans for landscaping Reservoir hill, the auxiliary dam, two miles west of the city, and the Alum Fork dam, at the monthly meeting of the Little Rock Federation of Garden Clubs yesterday.

Mr. Williams said that recreation facilities, including swimming pools, tennis courts and baseball grounds and trails would be emphasized. The work will be done through the WPA and CCC and will start about June 1 on Reservoir

Filter Plant Ready to Use This Week

Gazette 3-20-38

The $225,000 filter plant, last construction job of the $3,500,000 water supply project, will be put into use early this week, Marion L. Crist, Little Rock Water Department engineer, said yesterday. It will mark completion of the PWA-financed water supply project.

A few details remain to be completed and chemicals which will be used to harden the water must be delivered before the plant is put into operation. The Alum Fork water will be treated in new chemical units. Gravity filter beds of the old filter plant will be used.

The new plant will increase the filtration plant's capacity from 7,000,000 to 15,000,000 gallons of water daily.

Mr. Crist said pressure grouting at the Alum Fork dam had reduced leakage 62 per cent, cutting down the water leakage from 332 gallons per minute to 128 gallons per minute, which is negligible. The grouting will be continued one week to determine if the leakage can be reduced further, Crist said.

Thomas V. Coyne, resident caretaker for the reservoir, has taken up residence in the caretaker's cottage at the lakesite, Mr. Crist said.

New Filter Plant Put In Operation

Gazette 3-25-38

The city's new $225,000 filter plant, final construction job of the $3,500,000 water supply project, was put into partial operation yesterday and will be operated fully by tonight, Marion L. Crist, Municipal Water Department engineer, said yesterday.

The filter plant will increase filtration capacity from 7,000,000 gallons of water daily to 15,000,000 gallons. The new supply from Lake Winona on Alum Fork of the Saline river has been in use more than a month but old filter beds have been used to treat the water.

Use of the new filter plant will not change the quality of the water noticeably, Mr. Crist said. Its use will insure better control over hardness and probably will improve the palatability of the water slowly as filter plant engineers become acustomed to requirements of the new supply, Mr. Crist said.

The new filter building and filters were constructed by William Peterson of Little Rock and the Municipal Service Company of Kansas City, Mo. It was completed several weeks later than expected and the Board of Waterworks Commissioners granted an extension of time. Certificates of completion were issued to the contractors last week but minor adjustments prevented earlier use of the filter plant.

The Board of Commissioners will meet this morning at Water Department offices.

Water Supply Cost Fixed At $3,345,474

Gazette 3-29-38

Cost of construction of the city's new water supply and pipeline has totaled $3,345,474.51 with an additional grant of $60,000 due the city from the federal government, the annual audit report of the Little Rock Water Department, prepared by Chase & Gaunt, certified public accountants, showed yesterday. Copies of the audit report were filed with the Board of Waterworks Commissioners and the City Council.

The new supply and the plant and distribution system, valued at $3,872,192.66, compose an asset worth $7,217,667.17, the report said. Total assets of the Water Department were listed at $8,137,507.01, including reserve funds, current assets and deferred charges. The federal grant on the construction project has totaled $856,701.71. The additional grant is expected under the agreement by which the federal government will pay 30 per cent of the cost of labor, material and engineering supervision.

The government grant, coupled with earned surplus of $465,281.18 since the city began operation April 1, 1936, makes the surplus total $1,321,982.89. The surplus represents the city's pres-

ent equity in the property.

Bond Fund Balanced.

Funded debt of the department, including bond issues for acquisition of the plant from the Arkansaw Water Company, and the $2,500,000 issue for construction of a new supply, totaled $6,547,000 December 1, 1937.

The audit revealed that the fund set aside to retire bonds and interest, which had been $60,000 short December 1, 1936, had been brought to par and that all provisions of the trust indenture between the city and bondholders had been met. E. L. Gaunt said collections during the nine months the city operated the department in 1936 had been insufficient to meet the indenture requirements.

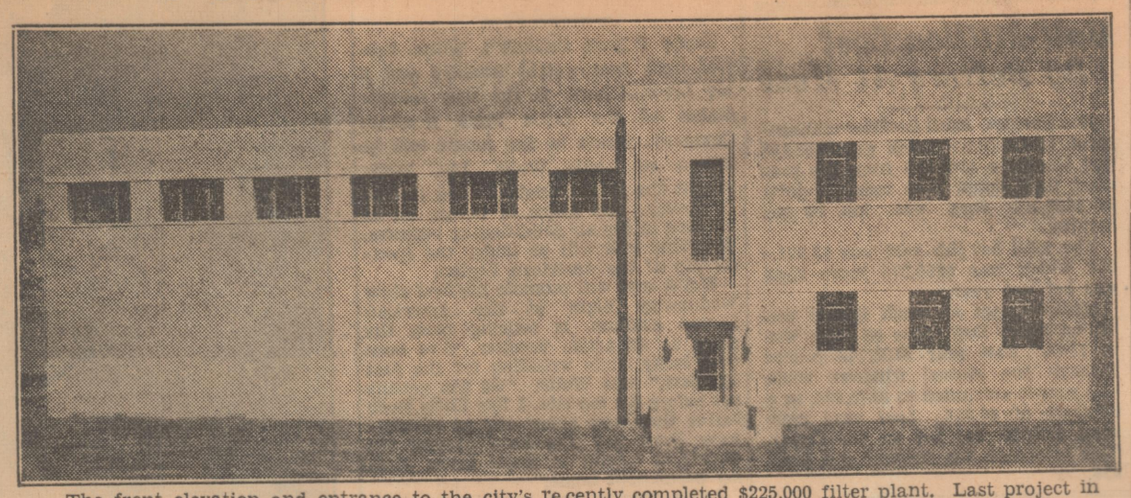
The shortage was made up and regular payments to the retirement fund were made in 1937. Cash reserve funds were $391,493 while reserve funds in securities, totaled $26,335. The securities represent $27,000 in water revenue bonds which the Water Department bought at a discount in the open market.

Increased Cost Expected.

The audit noted that an increase in interest payments and operations cost would be necessary this year. Interest expenses will be increased $100,000 annually due to assumption of the bonds issued to finance construction of the new water supply. Interest on the construction bonds began January 1.

A slight increase will be necessary in operating expenses for supervision and maintenance of the Alum Fork dam and pipeline from the reservoir to Little Rock, the audit said. The operating increase will be offset somewhat due to discontinuance of pumping from the former Arkansas river supply and lower purification costs. Last year, the pumping and purification expense amounted to $66,294.35.

NEW FILTER PLANT, LAST UNIT IN CITY $3,500,000 PROGRAM FOR IMPROVED WATER SUPPLY



The front elevation and entrance to the city's recently completed $225,000 filter plant. Last project in the $3,500,000 water supply project, the plant was put in use 10 days ago. Water from the Alum Fork reservoir undergoes four treatments here before it enters city mains, as pure as science and skill can make it.

Gazette 4-3-38

The well known "last word" in modern water treatment is represented by the new $225,000 filtration plant completed last week as the final unit of the city's $3,500,000 water supply project.

Completely modern in construction, appearance and equipment, the plant is located on Ozark point just north of Ozark avenue. The building is of concrete and brick veneer with stone trim. An attempt was made to have the building as attractive as the neighborhood and the arrangement invites inspection.

Of particular interest to water consumers should be the great care with which the purity and the quality of the water is watched. The plant was equipped with a modern chemical and bacteriological laobratory under the supervision of W. A. Mayhan.

Plan of Treatment.

As the water from the Alum Fork reservoir enters the building from a 39-inch reinforced concrete pipeline, it is treated first with chemicals. After mixing the chemicals into the water thoroughly, the water is conducted through flumes into settling basins for preliminary sedimentation.

Sedimentation is accomplished by settlement out of the chemical, aluminum sulphate, which forms a flaky material called "floc". The floc, as it settles, carries with it all of the coarse suspended matter of mineral and organic nature and much of the bacteria always present in water.

A new and highly efficient piece of equipment, known as a "Flocculator," installed in the settling basin and consisting of slowly-revolving paddle wheels, aids in formation of floc.

After flocculation and suitable settlement time, the water is skimmed from the surface of the settling basin and reconducted into the filter building for filtration. Passing into the top of large concrete basins with deep beds of sand and gravel in the bottom, the water slowly sinks through the sand into a system of under-drains. Passing of the water through the sand and gravel removes other impurities, except a small percentage of bacteria. Sterilization with liquid chlorine completes the purification process.

Automatic Machines.

Interesting to watch are the machines which weigh the chemicals and mix them into the water. Entirely automatic and equipped with trouble signals, the machines measure, with almost laboratory precision, chemicals into amounts as low as one-twentieth tha required by the old river water.

Periodical washing of the filters i accomplished by forcing water throug the concrete basins containing the san and gravel and washing the lighte matter out through a specially con structed sewer. The filtering and wash ing operations can be watched conven iently from a gallery constructed in th building. Water for washing is store in a 150,000-gallon elevated tank at th end of the settling basin.

In keeping with the plan to centra ize filtering operations in one building pumps which supply water to Pulas Heights have been placed there.

Capacity Increased.

Completion of the plant, in additio to centralizing purification operation raises the capacity from 7,000,000 ga lons daily to about 20,000,000 gallon Richard E. Overman Jr., supervising en gineer for Burns & McDonnell En gineering Company, plant designers, es timated yesterday.

Contractors on the building were Wil liam Peterson of Little Rock, for th building, and the Municipal Servic Company of Kansas City, Mo., whic installed new filter equipment. M Overman supervised construction.

MORE ELECTRIC POWER NEEDED FOR ARKANSAS

1-11-39

Mr. Fitzhugh Tells Of Possibilities.

By JOHN L. FLETCHER.
(Staff Correspondent of the Gazette.)

Harrison, Jan. 10.—Arkansas must import 500,000,000,000 kilowatt hours of electricity a year unless potential energy in the White river is captured by hydro-electric power plants within three years, a United States army engineers flood control conference was told here today.

The statement was made by Thomas Fitzhugh, chairman of the Arkansas Utilities Commission, in an endeavor to prove that the market for power developed in the White river basin would justify construction of one to four proposed dams and flood control reservoirs.

More than 1,000 persons, representing state planning boards, utilities commissions, private utilities, the Federal Power Commission and business and civic enterprises in Arkansas, Oklahoma and Missouri attended the all-day hearing. Lieut. Col. S. L. Scott, district engineer with headquarters at Little Rock, was examiner.

It was estimated that the four dams would cost $75,000,000 and, Lieutenant Colonel Scott said, would control 35 per cent of the flood flow from the upper White river watershed. He said the watershed embraces an area of approximately 28,000 square miles.

Proposed Wildcat Shoals Dam Bone of Contention.

The hearing was called to determine whether a proposed dam at Wildcat shoals, near Cotter, may be justified economically for flood control and power development in lieu of the Lone Rock and North Folk dams, also situated in Arkansas, which were recommended by the House Flood Control Committee in Document No. 1 of the 75th Congress.

The fourth proposed dam, situated on the White river at Table Rock, near Branson, Mo., and the Wildcat shoals project drew the majority of support, although Missouri and Arkansas delegations avoided an open split.

Arkansas representatives who declined to express a preference of one site over another "if this section of the state can be assured of a plentiful supply of cheap electricity," included Dr. George C. Branner, state geologist; L. A Henry state Planning Board engineer; Mayor Overman of Little Rock, chairman, and Layton Coffman of Harrison, member of the state Flood Control Commission.

Speakers Criticize Effort To Substitute Projects.

Although Mayor Overman did not voice an opinion, other members of the state Flood Control Commission were sharp in their criticism of the attempt to substitute a dam which had not been authorized for two others upon which congressional authorization already has been obtained.

W. C. Clure of Camden, secretary, and John Morrow of Batesville, a member of the commission, joined County Judge Fred M. Pickens of Newport in pleading for acceptance "of a project already in hand," instead of "trying for the next 10 years to get Congress to act on the substitute."

All Delegates Agree On Advantages of Program.

The evidence of divided opinion did not break until late afternoon. The Arkansas officials and 135 Springfield (Mo.) delegates agreed upon the advantages of a flood control and power development program, although each upheld the proposed site in his state, neither of which has been approved by army engineers or the House Flood Control Committee.

Judge Pickens started the opposition to the new suggested sites when he filed protests by the Newport Chamber of Commerce and the city of Newport to "any proposal that will leave us at the mercy of devastating floods while pressure brought to bear on Congress to start all over again."

REPORTERS' RESEARCH DISPROVES CHARGES AGAINST NEW WATER

Gazette 5-22-38

Quite a bit of talk tending to impugn the purity of Little Rock's new city water aroused the curiosity of a couple of Gazette reporters last week, and the scribes sallied forth to check up on the situation.

Import of most of the talk appeared to be that a suspicion had arisen—somehow or another—that the new city water was responsible for a near-epidemic of stomach troubles, and ailments of the inner organs of the city's residents.

Why the water should cause difficulties in the composite health of the community was not apparent, but many persons appeared genuinely interested in the talk. Several even went so far as to ask a Gazette reporter to investigate charges that several people had been hospitalized by stomach ailments allegedly caused by drinking city water.

A Question of Solids.

The scribes were informed by those presumed to know, that water varies from complete purity in proportion to the relative amount of solid matter it contains—either as suspended matter or in solution. Pure water wouldn't have any solids in it; appreciably impure water would have a rather large solid content.

The reporters, just to compare the amount of solid content in the city water with that of popular bottled brands of drinking water, selected a bottled spring water popular at the capitol and other public offices in Little Rock, where, it was certain that pressure would be brought to secure use of bottled brands, superior or otherwise.

On the bottle labels, a certified mineral analysis of the solid matter content showed that it contained 158.20 parts per 1,000,000 parts of water.

Little Rock's city water has 44.5 parts per 1,000,000 parts of water raw, and 56.2 parts per 1,000,000 after treatment.

City Water Vindicated.

"Residual clorine," one critic of the city water was reported to have said, which would become accentuated along toward the end of summer, caused a decidedly unpleasant taste in the city water and was downright dangerous to the public health.

At the municipal filter plant, the reporters discovered the most sensitive instruments ever designed were unable to detect the slightest trace of chlorine in the city water.

In other words ,the city water is slightly more than 35 per cent "purer" than the highly touted bottled spring water.

Whether the solids in the spring water contained curative minerals couldn't be determined. But people who are thirsty ordinarily don't drink water to cure their ills, but to quench their thirst. So far as getting pure water is concerned, the city water is almost a three to one favorite, if purity is the criterion.

Officials of the Water Department believe that the talk was a part of a propaganda campaign.

Water Checked Every Hour.

As to the possibility that the city water fluctuated in content, being good now, full oi impurities then and so forth from time to time—the scribes discovered that the content of the city supply is checked hourly. Any variation is recorded on a drum, and would be adjusted immediately. So far there has been none.

While they were poking around into the matter, the scribes inquired further into the advantages of pure water. Much has been said, particularly by Marion L. Crist, Water Department engineer, about the enormous savings the city water will afford its users in soap purchases alone.

They found, for instance, that, by using the type of water now available in the city mains, a good cup of coffee can be made with approximately one-third less the amount of coffee that was required when the old hard supply was used.

As one research expert put it: "The woman's lot is as hard as the water supply she uses."

Work on New Dam to Be Started Soon

1-8-39

Special to the Gazette.

Arkadelphia, Jan. 7.—Activities toward the construction of the $8,000,000 power dam and flood control basin at Blakeley mountain, 14 miles north of Hot Springs, will start about February 1, it was said by Bly Wagner, division manager of the Arkansas Power and Light Company who was a guest of the Arkadelphia Rotary Club.

Mr. Wagner said it was believed in the headquarters office at Pine Bluff that the big project is about ready to start. The company has been ready for several months, he said, but the government, which is interested in the flood control phase of the dam, had delayed the work.

Approximately three-fourths of the cost will be borne by the power company, whose objective is hydro-electric power. After the Arkansas Power and Light Company builds the dam to the height required for its plant the government will add 30 feet, making it about 170 feet high. It will create a lake of many thousands of acres, all of which must be cleared of timber.

C. S. Lynch, chief engineer of the power company, will be in charge of the project so far as it affects the hydro-electric plant. The United States engineers office will carry out the federal part of the project.

The project will be of much benefit to Arkadelphia and Clark county because flood control will mean much to the agricultural areas, and perhaps result in the opening to agriculture of thousands of acres of rich river bottom land now subject to periodic floods.

The Caddo river and the Little Missouri river projects are designed to fit in with the Hot Springs enterprise in making the Ouachita river free of floods in Arkansas. Both tributaries empty large volumes into the Ouachita near here.

Gazette 8-11-37

WATER USE REPORT.

Arkansans used $2,924,000 worth of water for irrigation and domestic purposes during last year, Dr. George C. Branner, state geologist, reported to Governor Bailey yesterday. A totai of 7,347,484,000 gallons of ground (deep well) water was used during the period, he said. Depths of the wells ranged from 70 to 3,810 feet.

Water Survey Is Completed

Democrat 9-19-37

State Geologist Submits Report on Wells Over State.

More than 117 billion gallons of ground water, valued at $4,379,000, were used for municipal, industrial and personal purposes in Arkansas in 1936, Dr. George C. Branner, state geologist, reported yesterday in a survey of Arkansas water wells.

The survey, compiled by WPA personnel under the direction of Dr. Branner, was sent to Governor Bailey. Commenting on the survey, Dr. Branner said:

"Its purpose is to make available information regarding deep water wells in the state as an aid to engineers, well drillers and others who prospect for ground water supplies."

The list represents the first step towards the progressive and systematic accumulation of deep water well information in the state, he added.

Rainfall a Factor.

"The fact that Arkansas has an average rainfall of about 45 inches in its northern and southwestern parts and 50 inches in its eastern and southeastern sections, accounts largely," Dr. Branner said, "for the abundance of the ground water supplies in the lowland portion of the state and in certain parts of the upland. These supplies are a most fortunate asset. Their presence, however, is often taken for granted, and their value for municipal, industrial and personal use is not commonly recognized."

Dr. Branner said water was utilized as follows:

Municipal systems in 137 cities, 4,846,254,000 gallons valued at $2,101,000.

Industrial users, 2,500,000,000 gallons valued at $700,000.

Bottled spring water distributors, 1,230,000,000 gallons valued at $123,000.

Rice Fields Swell Total.

Rice field irrigation, 109,900,000,000 gallons, valued at $1,455,000.

The value of water used during the year was placed by Dr. Branner at approximately 23 per cent of all minerals produced.

"This immense quantity of water can be better visualized," he said, "when one realizes that it would cover an area equivalent to that of a standard township, 36 square miles, to a depth of 15 feet and seven inches.

"The availability of adequate ground water supplies of satisfactory chemical content is often an important, if not a deciding factor in the location of water-using industries in Arkansas. The water supplied to railroads and paper pulp mills from wells is an outstanding example of its industrial use in the state."

TELLS OF HUGE WATER VOLUME USED IN STATE

Geologist Branner Submits Report.

Gazette 9-19-37

Municipalities, individuals, businesses and rice growers withdrew for consumption and use from springs and wells in Arkansas 117,247,483,990 gallons of water valued at $4,379,171 during 1936, State Geologist George C. Branner reported to Governor Bailey yesterday.

Dr. Branner wrote: "This immense quantity of water can better be visualized when one realizes that it would cover an area equivalent to that of a standard township, 36 square miles, to a depth of 15 feet and seven inches.

The information was contained in an Arkansas Geological Survey publication entitled "List of Arkansas Water Wells," compiled under the direction of Dr. Branner by Lucy Crooks, with the assistance of WPA workers.

Much Information Given.

The 142-page volume contains information concerning the location, ownership, date of drilling, yield per minute, depth, elevation, depth of water and thickness of water-bearing form of 2,141 wells in the state's 75 counties.

The report shows that the wells vary in depth from 70 to 3,810 feet. It shows that 127 cities and towns secured their water supplies from well systems and 10 from springs during last year. The 137 systems served 322,607 persons, or 17 per cent of the population of the state.

The report showed that water was used for the following purposes:

Municipal supply, 4,585,331,410 gallons, worth $1,982,814.

Independent industrial supply, 2,500,000,000 gallons, worth $700,000.

Bottled water supply, 1,230,000 gallons, worth $123,000.

Irrigation of rice district, 109,900,000,000 gallons, worth $1,455,000.

Eight per cent, or 173 of the wells were situated in the Highland area, which includes the Ozark plateaus and the Ouachita province, and 92 per cent, or 1,968 wells. were located in the Lowland area, which includes the Gulf Coastal Plain.

Data on which the report is based is available at the Geology Department.

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Survey of Water Wells Praised By Geologist.

Gazette 12-23-37

State Geologist George C. Branner received a letter from the United States Geological Survey in Washington yesterday praising a survey of Arkansas water wells recently published by the state Geology Department.

The letter, written by O. E. Meinzer, geologist in charge of the water resources division, said:

"This is a very commendable tabulation of well data, which will fill a long-felt need especially in view of the fact that most of the published reports containing well data are now out of print and are not available generally to the public."

Abundance of Pure Water From Deep Wells.

Gazette 1-23-38

Pine Bluff boasts a city water supply that ranks with the purest and best available anywhere in the country. The water is obtained from five wells from 800 to 1,000 feet deep, the bottom of the wells being in a strata of coarse gravel. The filtration through hundreds of feet of sand, gravel and stone insures that it is free from bacteria. The water is pumped from the wells with electrically-driven pumps, and aereated over the fountain on the south side of the reservoir which has a storage capacity of 3,000,000 gallons.

Water Survey Helps Teeth Of Youngsters

Democrat 3-20-38

The teeth of Bauxite's youngsters are shipshape and sound today, thanks in part to the United States Public Health Service.

A 10-year survey of the efforts of the water supply formerly used at that city was completed this week by officials of the bureau's division of scientific research, Dr. W. B. Grayson, state health officer, said yesterday.

Two staff members, Drs. Dean and McVey, visited the city during the week, made numerous examinations and handed in a favorable report.

The survey, according to Dr. Grayson, began 10 years ago when the bureau looked into the increase of mottled-enameled teeth, from which many of the city's youngsters were suffering. They attributed the condition to an attack on the calcium in the teeth by flouride, then found in the water supply.

During the intervening 10 years, the city has changed its water supply, now being supplied from the Saline river.

Yesterday, when the bureau doctors visited Dr. Grayson, they said no traces of mottled-enameled teeth were found in youngsters they examined.

South Developing Water Facilities

Democrat 3-20-38

Development of water facilities in the South to meet the growing demands for expanding population and steadily rising standards of living, as well as to provide for the increased needs of the South's industry, made great strides in 1937, according to a survey made by the American Waterworks Association.

In the seven states of Alabama, Arkansas, Georgia, Louisiana, Mississippi, Tennessee and Texas 95 waterworks systems were constructed or their facilities extended last year, the association found. At the beginning of 1938 a total of 73 additional projects were either under way or planned for the current year in the seven states. Similar progress is being made in the other Southern states, although the projects in them have not yet been tabulated.

The association, largely because of the great program of water supply development now under way in the South, will hold its 58th annual convention in New Orleans April 25 to 28. Hundreds of water officials and operators in cities in the South are members of the association, many of whom will attend the convention.

Waterworks improvements were completed in Arkansas last year at Benton, Bentonville, Bradford, Crawfordsville, Danville, Green Forest, Hampton, Hoxie, Mammoth Spring, Marianna, Mineral Springs, Mountain Home, Mountain View and Turrell. Projects were either under way or practically completed at Little Rock, Lincoln, Luxora and Marshall.

Clinton Oil Driller Brings In Fifth Artesian Well.

9-21-38

Special to the Gazette.

Clinton, Sept. 20.—Wayne Bradford, Clinton well driller, has brought in his fifth artesian well in Van Buren county in a little more than a year. Three wells are in Clinton, while the last one is at the home of Horace Rogers, at a depth of 34 feet. The first was drilled at the home of Edd Bradley at the north edge of town, on Highway 65, and the other at Horton's filling station. Another artesian well brought in last summer was at the home of Jesse Webb in the Pee Dee community, three miles east of Clinton, and the fifth is at the Shull farm near Eglantine.

Bone Treated to Free Water From Fluorine.

Gazette 6-5-38

By HOWARD W. BLAKESLEE.

(Associated Press Science Editor.)

Tucson, Ari., June 4.—Bone treated so that it cannot get "bone-dry" promises to end the last, great unconquered drinking water malady, the chalky bones and mottled teeth caused by fluorine.

The bone makes a filter which completely frees water from fluorine. It was developed by Prof. H. V. Smith and his wife, Dr. Margaret Cammack Smith, of the University of Arizona. They described recent developments today.

Numerous attempts have been made to find satisfactory chemicals to filter fluorine from water. Professor Smith thought that the bones which fluorine attacks might make the best filter. But he faced the obstacle that bone is not easy to wet. By baking bone in an oven at about 1,000 degrees Fahrenheit Professor Smith alters its surface. Thereafter water wets it easily. For filter purposes it is ground to resemble coarse sand.

Fluorine is a poisonous yellow gas. Less than one part of fluorine in a million of water is enough to attack bones and teeth.

Until about two years ago fluorine waters were believed confined mostly to the Southwest, some mountain states and the Far West. But now surveys are finding more of the troublesome water.

The bone filter costs in laboratory manufacture one to two cents a pound. Two pounds will filter the fluorine out of nearly 500 gallons of water. The used bone can then be washed with chemicals and used over and over.

Artesian Well Brought In On Petit Jean Mountain.

Special to the Gazette 6-12-38

Morrilton, June 11.—C. B. White, well driller of Beebe, brought in an artesian well on Petit Jean mountain yesterday on the site of the Petit Jean Consolidated School, a half-mile east of the State park. It is 41 feet deep and flowing at the rate of 50 gallons a minute.

Bids on Cabot Water Supply To Be Opened Tomorrow.

Special to the Gazette. 10-4-38

Cabot, Oct. 3.—The PWA has advertised for bids on the $6,500 addition to the Cabot water supply, which was allowed as a new project last spring. Cabot is facing its most serious water shortage. No rain has fallen for nearly two months and most of the wells and cisterns are dry. The bids will be examined Wednesday, and it is expected the work will be rushed.

Store Operator Has Trouble With Well.

10-8-38

R. L. Dorsey, operator of a store and filling station at Olmstead, Bayou Meto township, is having lots of trouble with his water supply. Mr. Dorsey told the Gazette, the water from a well on his seven-acre tract developed a peculiar taste. He retained L. H. Wooley of North Little Rock, Route 4, to drill another well. At a depth of 28 feet, Mr. Dorsey said a liquid of a bronze color was discovered.

Mr. Dorsey said he believed presence of the liquid indicated there was oil somewhere in the vicinity. Meanwhile he is without a water supply.

WATER WELLS NEAR CABOT

10-9-38

Water in Cabot has been at a premium for several years. The only supply comes from private wells, cisterns and rainfall, in 1937, Mayor Ernest L. Bailey and citizens succeeded in having the PWA sink a 600-foot well, expecting a generous supply of water. But instead of water, the water mains over the city filled with natural gas. An oil boom was started and the PWA moved about 300 feet away to drill another 600-foot well. This project didn't show any gas or water either so a third well was drilled three blocks away. This also proved a dry hole.

Ample Supply Found.

All the while these wells were being drilled, it was known that a plentiful supply of water could be obtained a mile north of here, but those in charge wanted to avoid laying a pipe-line. However, their patience exhausted, PWA authorities contracted with a driller from Fayetteville to sink a fourth hole a mile farther from town. Several hundred feet down, the driller suspended operations when the well proved to be artesian. Millions of gallons of water poured out of the ground until the casing was capped.

The PWA then contracted with the driller to put in the pipe-line to Cabot, promising water for the long-thirsty residents in a few weeks. This was last Christmas.

contract for drilling a new well on the side of the house opposite from the dug well.

Mr. Wooley said he struck no moisture at 25 feet where he encountered a hard formation. It required several hours to penetrate this cap rock, but, when the drill bit went into a soft formation at 29.5 feet, a small amount of gas began to spew and a black liquid flowed into the well from the east and west sides of the hole. This was bailed out and found to be a heavy sludge of oil and water mixed, but when this was removed, almost pure gasoline filled the hole to within six or eight feet of the surface. This was baled out and everything that would serve as a container filled with the liquid, which is of a bronze color and of a gasoline odor. It explodes when confined and lighted and is of a high enough gravity to run a Model A as smoothly as a Model A could run on any gasoline. Lee Dorsey says that he might be fooled on what his well contains but it is hard to fool a Model A.

When the old well became rank, the gasoline tanks were excavated and tested with compressed air by the oil company whose product Dorsey handles, but none showed a leak.

More of Natural Phenomena.

Mr. Wooley volunteered to escort the party to two ohter wells which he has drilled lately, one within a mile and the second within a mile and a half of the Lee Dorsey place. Both wells were so strong with oil that they were abandoned.

A demonstration was made with a Plymouth car. The gas line was shut off from the carbureter, which was drained and filled with the Dorsey liquid. It started and ran without a sputter.

Mr. Dorsey invites a skeptical inspection of his well, as he is just as much puzzled about it as anyone.

Mrs. Dorsey says what she wanted was water.

Mr. Wooley says he is the loser, as he guaranteed water or no pay.

Everybody's Doing It.

Everyone in this vicinity with a means of conveyance visited the Dorsey well today, and many are going back tomorrow with a carload of unbelievers.

The new excitement has eclipsed the Cabot activities although drilling is going on as usual at the Benson No. 1.

Heavy Loss As Dam At Paris Breaks

4-17-39

Special to the Gazette.

Paris, April 16.—A 100-foot portion of Paris' new water dam north of the city washed away at 10 a. m. today under pressure caused when a 5.35-inch rain in 15 hours raised Short Mountain creek several feet above its normal level.

The damage to the $165,000 structure was estimated by PWA Engineer Hampton at $15,000, and $10,000 additional damage was caused when the pumphouse below the dam was washed away, cutting off the city's water supply.

City streets were floods, several buildings downtown were damaged when water rose three inches in them, a home belonging to J. L. Nolen and its contents were washed away by the rampaging creek, and three piers of the Missouri Pacific bridge were damaged so severely that railroad traffic to Fort Smith was suspended. Highways 109 and 22 were inundated and traffic suspended for several hours.

The deluge sent Six-Mile Creek out of its banks, and half of the 12,000 acres in the McLean bottoms, four miles north of here, were inundated. The entire bottoms, all in cultivation, will be under water by noon tomorrow, residents there forecast. Six-Mile creek and Short Mountain creek merge about two miles northwest of Paris, thus threatening levees below that point.

Effort to Save Dam Futile.

Workmen of the S. E. Evans Construction Company of Fort Smith worked all night in a frantic effort to prevent the new 100-foot portion of the dam from caving in. Sandbags were used, and the spillway was dug deeper, but when the creek rose five feet in 30 minutes just before 10 this morning, the pressure became too great.

The PWA project which includes the dam totals $200,000, of which $165,000 was for the dam and the remainder for installation of water mains here. The pumphouse destroyed was not new.

City Without Water.

Lack of water for its boilers immediately caused a shutdown of the municipal light plant, but officials later tapped on the line of the Oklahoma Gas and Electric Company which serves the Paris coal fields and comes to the city limits. Water for the city will not be available until afternoon or Tuesday, City mas Deen said.

The rain, which began at [illegible] night, was the heaviest on record at the observatory of Subiaco College, near here. Among losses incurred was that of an automobile owned by O'Neal Storts of Paris, who abandoned it when it became stalled. It was engulfed by Short Mountain creek before it could be rescued.

Lowder's grocery, the Paris Hardware Company and G. S. Minmier and Son reported three inches of water in their buildings.

Cabot Still Has No Water Supply

7-2-39

By J. B. WIRGES.

(Staff Correspondent of the Gazette.)

Cabot, July 1.—Although an unlimited supply of water is ready to be piped from a well a mile north of here, residents of this town are facing another water shortage, all because of legal red tape required by the PWA to put through a project which would furnish the mile-long pipe line.

Water in Cabot has been at a premium for several years. The only supply comes from private wells, cisterns and rainfall, in 1937, Mayor Ernest L. Bailey and citizens succeeded in having the PWA sink a 600-foot well, expecting a generous supply of water. But instead of water, the water mains over the city filled with natural gas. An oil boom was started and the PWA moved about 300 feet away to drill another 600-foot well. This project didn't show any gas or water either so a third well was drilled three blocks away. This also proved a dry hole.

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The PWA then contracted with the driller to put in the pipe-line to Cabot, promising water for the long-thirsty residents in a few weeks. This was last Christmas.

Now, six months later, the well remains capped and the contractor has made many trips between his home and here, but still word from the PWA to proceed has not been received.

Meanwhile, the wells and cisterns in Cabot are going dry and some of the citizens are carrying or hauling water from a spring. Water mains were laid throughout Cabot back in 1937, but little water ever has found its way through them.

Mayor Bailey has appealed to congressmen and senators for action, but only promises have been received.

Water For Cabot at Last Promised

7-4-39

Special to the Gazette.

Cabot, July 3.—Following publication in Sunday's Gazette of an article telling of Cabot's inability to obtain a water supply because of PWA "red tape," a telegram was received by officials here today which said:

"Money for Cabot waterworks extension available at Federal Reserve Bank, Little Rock, Thursday, July 6."

Contractor Enochs of Fayetteville, who drilled the well from which the supply will be obtained, said that he will have ditching machines on the ground in 48 hours, and that the water mains will be laid within a week.

Cabot is expected to celebrate the Fourth of July as it never has been celebrated before.

New Delay In Waterworks For Cabot

Special to the Gazette. 7-18-39

Cabot, July 17.—The jinx that has followed the Cabot water works almost from its inception delayed construction of the pipeline for several days.

A permit had been issued from the Highway Department allowing the new feeder main from the well a mile north of town to follow the highway for a half-mile. Ditching had been done and pipe strewn along the ditch when orders came to cease. It was said the permit was issued last year before a contract had been given to widen Highway No. 67 for a width of six feet from Newport to Little Rock. Fear was expressed that the ditch would weaken the dump.

Effort was made to obtain a new right-of-way on a direct line, shortening the distance and saving pipe, but owners of some of the land live in other states, so this was found impracticable. Finally permission was secured from persons living along the highway to lay the pipeline inside the fences on private property.

Contractor Has Tale of Woe.

Contractor Enochs said that he put up a bond last August, guaranteeing completion of the job within 30 days. This bond cost him $50 and he has had to have it renewed for 11 consecutive months at a cost of an extra $50 each time, all because he had received no work order.

Equipment Set Up for Testing Water of Boone County.

Gazette 11-12-39

Special to the Gazette.

Harrison, Nov. 11.—Roy M. Ward of Fayetteville, district engineer for the Arkansas Department geological survey, has brought laboratory equipment here to make a survey and test of the water in Boone county. It will be completed December 5.

C. R. Caughey, in charge of the Boone county office, announced establishment of water tables for the entire county with laboratory set up in the Harrison office. Mr. Caughey has five field men assisting him in the work, which consists of making tests of the water in springs, wells and streams as to mineral content. Also water levels will be established, with bench marks showing the level of water in wells.

Samples of ore formations are being collected for display by Mr. Caughey.

City of Cabot at Last Gets Water In Its Mains.

7-24-39

Special to the Gazette.

Cabot, July 23.—Everybody in Cabot was happy today because the city had the first water in its mains in more than a year.

Water faucets were restored to use yesterday morning when the first water from the new city well, the fourth drilled before a satisfactory one was found, began flowing. Because pressure had to be built up and the water wasn't available when scheduled, several persons who left their faucets open were awakened by running water during the early hours yesterday.

The city's well completed two years ago developed gas after being in operation 10 months, and three wells were drilled before a satisfactory one was found. Delay in completion of a federal project for laying of mains caused further inconvenience here. Private wells and cisterns were used during the interim.

Cabot Goes On A Big Spree as Real Water Is on Tap

7-25-39

Special to the Gazette.

Cabot, July 24.—Wash racks at filling stations reported the biggest day's business Sunday that they ever experienced. City water was running everywhere, yet the municipal tank was overflowing the entire day to the delight of the smaller children who donned bathing suits and played under the spray.

Many car owners said they had had no wash job on their cars for more than two years. Some did not recognize their vehicles when they viewed them in all of their pristine glory, having forgotten the original color.

Cabot is enjoying its first water spree in many months, sprinkling lawns and shrubbery.

New Water Treating Plant to Be Built at DeWitt.

Gazette 8-27-39

Special to the Gazette.

DeWitt, Aug. 26.—The Arkansas Power and Light Company has announced that work will begin immediately on a new water treating plant here, which will provide soft water for DeWitt. Mayor J. W. Lorick and City Attorney George Pike have been working toward this project for several months. The new plant will be ready for operation by Thanksgiving. A new well has been dug at a cost of $3,000, and the cost of the new plant will be approximately $3,500.

Leon Bond, local manager of the Power and Light Company, said that local labor and materials will be used.

Mountain View Municipal Well Low as Result of Drouth.

9-15-39

Special to the Gazette.

Mountain View, Sept. 14.—Pastures and late crops are being damaged badly by the extreme dry weather and heat wave. The water supply in the deep well here, which supplies water for the town, is getting very low, and it is feared it will be exhausted unless it rains in a few days.