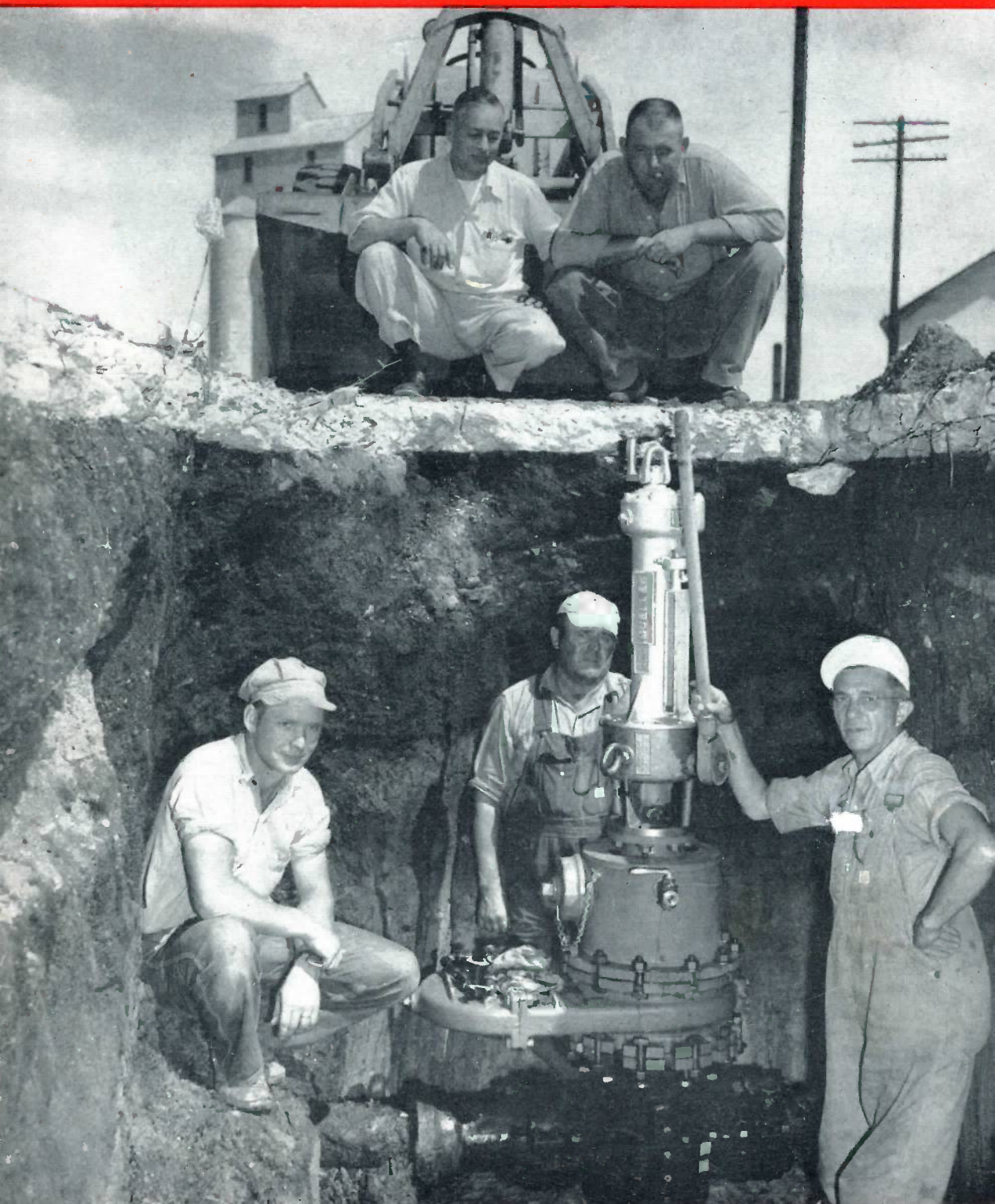
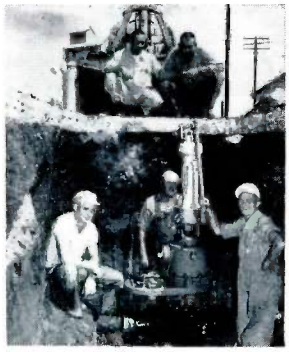
MUELLER Record

OCTOBER • 1954





Storm Lake, Iowa, city employees pose with Mueller valve inserting equipment while a newspaper photographer in that city records the job which was completed in four hours and fifteen minutes.

Our Cover Story

RECENT STORIES IN newspapers at Storm Lake, Iowa, and Minden, Nebraska, told of the use of Mueller valve inserting equipment and of the advantages to their respective cities in using our equipment. Our cover picture was made six feet below the street level at Storm Lake. The city recently purchased our valve inserting equipment which enables the city Water Department to insert four, six or eight-inch valves in existing water mains without interrupting service. Left to right around the equipment are city employees, Carl Hageman, William Fredericks and Tom Huber. Supervising from above ground are Ken Tohill of Boone, Iowa, sales representative of Mueller Co., and Forrest (Dutch) Hausman, City Water Department foreman. Mr. Tohill reported that the picture which appeared in the Storm Lake Register was taken on August 19. The men began making the cut at 1:15 p. m. and the job was completed and the equipment taken down at 5:30 p. m. City officials said they were pleased with the job this equipment did. They were impressed with the simplicity and ease of inserting a six-inch gate valve with this machine. This marked the first time such equipment has been used in Storm Lake.

AND OUT AT MINDEN, NEBRASKA, the following newspaper story needs no explanation. A letter to the Mueller Record from Clayton L. Emal, Superintendent of Utilities at Minden, accompanied the clipping.

The letter follows:

"I am enclosing a newspaper clipping in regard to the new valve inserting equipment we recently purchased from Mueller Co. I thought you would like this for the Mueller Record.

"We are very much pleased with the machine as it will save much time and labor for us.

"Thanks to your Mr. Harry Seevers (Mueller Co. sales representative) for his instructions to us in inserting the first valve."

Thanks for the endorsement, Mr. Emal, and we are publishing the story in toto.

The story follows:

"CITY OF MINDEN'S NEW MACHINE IS ASSET FOR SERVICE, FIRE SAFETY.

"Increased fire safety and greater working efficiency are two major advantages gained by the City of Minden after the recent purchase of a new valve-inserting attachment.

"City Commissioner Clayton Emal says the machine, purchased from the Mueller Co. for $2,000, will pay for itself in a short time through its time-saving and service-assuring qualities.

"And it increases fire safety since it enables two men to insert a valve in a water pipe without shutting off the water main.

"If a fire hydrant is in need of repair —and Commissioner Emal says many in Minden need repair—the new attachment enables city workers to do the job without shutting off water at any place in the city.

"Previously, major water-line repairing had to be done at night by a large crew of men. Even then, there was no guarantee there would be water service the next morning. Often during the task, large sections of the city did not have a supply of water, which might have been desperately needed in case of fire.

"The city for several years has had a machine for inserting a sleeve-and-valve

connection, called a side-valve inserter. But the new attachment carries the efficiency a step farther, allowing continuous service while inserting shut-off valves. It blocks off a hydrant or small part of the line which needs repair; but water is kept flowing to all outlets.

"Here's Commissioner Emal's description of the way the machine works:

"Workers manning the machine turn a crank on the side of the machine. This sends a cutter down into contact with the pipe, cutting out a section. When the machine is lifted, the piece of pipe is brought to the top; a valve is then inserted through the machine. No water escapes into the hole when the machine is used. The entire operation represents a big saving in time and labor and it does not shut off the supply of water in case of fire.

"The inserter weighs about 1,000 pounds and is transported on the city's boomtruck.

"City employees and officials from Hastings, Holdrege, Gothenburg, Cozad, Kearney and Central City were in Minden recently when the machine was demonstrated by a representative of the Mueller Co.

"Basically, the new machine simplifies what formerly were major tasks, and it eliminates what could be a major hindrance to fire-fighting efficiency."

Frank L. Kuenstler Named Mueller Co. Sales Representative for West Texas

FRANK L. KUENSTLER has been appointed sales representative for Mueller Co. in our West Texas territory. His headquarters will be in Lubbock.

Mr. Kuenstler's appointment fills the vacancy created by the death last July 6 of Lon W. Woodson who had represented our firm in that territory.

A native Texan, Mr. Kuenstler was born in San Antonio and has spent most of his life in Texas. After graduation from high school, he enlisted in the United States Navy. Most of his foreign service was in the Far East.

After his discharge from the service, Mr. Kuenstler enrolled in college. He was graduated from South Texas State College at San Marcos.

During his college career, he became associated with the Wyche Construction Company of Dallas. This firm specialized primarily in large water and sewage treatment plants. Mr. Kuenstler arranged his college schedule in order that he could work part time with the firm. After graduation he became associated with Wyche Construction Company on a full-time basis, and later was made a junior partner.

Recently, because of ill health of Mr. Wyche, the firm was dissolved and it is for this reason that Mueller Co. was able to secure Mr. Kuenstler's services.

FRANK L. KUENSTLER

He is 26 years old and is married. Mr. and Mrs. Kuenstler are the parents of two children, Sheryl Ann and Kimberly Dean.

Comments on European Tour

W. H. Hipsher Cites Need For Better Understanding Among Western Nations

(Editor's Note: W. H. Hipsher, executive vice president of Mueller Co., Decatur, Illinois, manufacturer of gas and water distribution equipment, was chosen as a delegate to the Second International Conference of Manufacturers which was held in Paris, France.

Mr. Hipsher traveled throughout the Benelux Nations, visiting manufacturers and exchanging views on manufacturing methods and procedures and employee relations. His comments reflect the need for closer association and better understanding among members of the Western World.)

By W. H. Hipsher

W. H. HIPSHER
Executive Vice President
Mueller Co.

WHEN our founding fathers were debating the Declaration of Independence, Benjamin Franklin made one of his famous remarks which went like this:

"We must indeed all hang together or most assuredly we shall all hang separately."

There must be a basic truth in Benjamin Franklin's remarks that applies to all the nations of the Free World today. The Iron Curtain countries under Communism have made (let's face it) some gains in power. This should not create fear in the minds and hearts of the peoples of the Free World, so long as we maintain faith in our ability to muster our strength, economic and military, and remain true to our God-given freedom and way of life.

This thought of the urgent need for Free World unity was very strong in the minds of those American industrialists who organized the First International Conference of Manufacturers in New York City in December of 1951. This represented the first organized effort to bring together members of top levels of industrial management in the Western Community of Nations for an exchange of views and experiences.

Perhaps unity was even more apparent in the minds of the European and American business men at the Second International Conference of Manufacturers held in Paris, May 23, 24 and 25 of this year. I was a member of that Conference and I know the conviction that "free men must hang together" was very much in their minds throughout all of our discussions.

The Paris Conference was attended by 362 industrial leaders from thirteen Western European countries and the

United States. The American delegation of more than 150 represented a cross section of all types of American industry in every part of our great country.

Conference agendas are not too interesting but I believe it is necessary to at least make some comment on them. The theme of the conference appeared in rather imposing words, "ECONOMIC AND SOCIAL CONDITIONS FOR THE DEVELOPMENT OF FREE ENTERPRISE".

The topic of human relations was discussed at great length and was deemed of utmost importance. The very fact that the subject of human relations, that is, employer-employee relations, occupied an important place at the conference table, is an important reflection on the Free World. It is proof that our belief in individual rights and individual freedom is of utmost importance in maintaining a Free World.

It is also most important that both in the United States and in Europe there is a desire on the part of top management to place more and more emphasis on human factors in business.

We have never lacked the "Know How" to find new products, new machines and new techniques. Our technological advancement is a reality, but the real key to our future is people—people who do not stop with technological progress alone, but people who learn to earn a better living and, at the same time, apply the principle of free enterprise and individual initiative to their own lives.

Improving relations among human beings depends on our ability to communicate freely and effectively with each other. Therefore, to develop communication between management and employee was a topmost subject for discussion. This brought us into the field of benefit programs, such as health and safety, including means for prevention of accidents and competent treatment of occupational injuries.

From the beginning of our technological advancement in industry, we have been reducing hard physical labor and drudgery. We have built machines to do jobs that used to require heavy muscular work and, while it has been a most important advancement, this group of manufacturers, as they sat around the conference table, were well aware of the fact that it is not enough that we remove much of the hard physical work in industrial jobs. As a people, we need to increase our mental power rather than our muscular power. Our technological advancements have brought about a tremendous increase in the requirement for trained and educated people in business today. This means that education must pay an increasingly important part in our industrial society in the years to come. I believe every man attending this conference was fully aware that this was a most important aspect of the discussions then in progress.

In reviewing some of the highlights of the Second International Conference of Manufacturers, I will not pretend that we of the American delegation and our European colleagues saw eye-to-eye on every point.

Perhaps, the subject of private enterprise in government was a prime example of a divergent point of view. In America, we believe that government regulation of certain aspects of private enterprise may be necessary in the public interest. However, government competition with private enterprise can be a major obstacle to the flow of private capital; that same private capital which creates jobs and goods and services. Our American political society was founded on our enlarged vision of individual liberty which gives opportunity in a new form of economic system, one which is conducted on a much freer basis. It was not, therefore, surprising that some of our European friends were not entirely in agreement with the American viewpoint. In order to create an economic system which will flourish with private enterprise, government must regard its functions as primarily political rather than economic.

The American delegation did not sit around the conference table to tell our European friends how to run their business. We were there to try to find solutions to mutual problems and to strengthen the bonds of friendship and understanding among our peoples. The American delegation felt it had to give its frank opinions on the role of gov-

ernment and the nature of free competition, subjects in which the European manufacturers' views were not at all times the same as ours.

We believe, for example, when governmental activities invade the field of private enterprise it threatens other elements, such as civil rights and civil liberties. It is unfortunate to find some of our European friends quite content to see government assume certain economic responsibilities, such as maintaining full employment, subsidizing industry and controlling operations of certain industries.

It is impossible to predict whether the views expressed by the American delegation will eventually have an influence on the course of European economic thinking. Naturally, we believe in American ideas and have expressed them to our European friends, hoping that the Free World will move toward greater freedom with less governmental intrusion, and perhaps above all, vigorous competition among individual businesses and industries.

Prior to the beginning of the Paris Conference, the American delegation was split off into different groups to hold regional conferences with manufacturers in:

Scandinavia
The Benelux Countries
Great Britain
France
Germany
Italy
Switzerland
Austria

I was assigned to the Benelux Regional Group. It would be impossible, in the space allotted, to report the splendid hospitality this group of manufacturers in the Benelux area extended to us. We visited manufacturing facilities in Holland, Belgium and Luxemburg and we had the opportunity to see some of the most modern, well-managed industrial establishments that I have ever seen. The devastation to the Benelux area during World War II was tremendous but their comeback has been absolutely miraculous. These countries have used our aid for rebuilding the old and constructing new production facilities. And, they are now producing good products on a mass production basis. The people of the Benelux area are to be respected for their courage and vision, so apparent in the rehabilitation of their countries after the close of World War II.

As a summary, I believe the achievements of the Second International Conference of Manufacturers were considerable. Numerous, specific problems were discussed with a free, frank interchange of views. We and our European friends got to know each other better and I am sure all of us agree that none of the free nations can be self-sufficient either politically, militarily or economically. Surely this conference could not solve all of our problems. Many of them are too big and too complex for any overnight solution. I believe, however, that we reached a fuller unity and understanding and a desire "not to hang separately but to hang together".

American industry will be using atomic energy as a supplementary means of furnishing power possibly within 10 years, an aluminum company executive predicts.

A strip of wax paper between the hat and the leather sweat band, gents, will keep the hat ribbon from getting stained by prespiration or hair lotion.

In our land there are 128,225 elementary schools, 23,746 high schools, and 1,889 accredited colleges—and 1,242,348 teachers to staff them.

Some states have banned the tricky "bug deflectors" on the hoods of cars, claiming they interfere with clear vision and safe driving.

A few drops of camphor oil added to each gallon of paint used on porches and outdoor furniture will serve as an insect repellant.

Ticking of the alarm clock disturb your sleep? Try putting it on a small square of bath sponge, which is sound absorbent.

Introducing:

Charles O. Bafford, Sales Assistant, Water Department

WHETHER IT BE a small detail or a major problem, Charles O. Bafford is a man who knows how to face a task headon and come out of the fracas with the matter ironed to perfection.

That is the kind of work record that has given Mr. Bafford a rapid rise in Mueller Co. Beginning as an operator on a grinding machine in the Ground Key Department in May, 1950, Mr. Bafford today holds the position of first assistant to A. O. Yonker, assistant sales manager, Water Department.

Two months after he took his place at the grinding machine, he was transferred to the Production Control Department of the Brass Foundry. In this capacity, he learned the function of both sales and production. He received orders from the Sales Division, wrote them for the Brass Foundry, and routed the orders through production.

Mr. Bafford's insight into the problem at hand and his ability to do an assignment well did not go unnoticed by his superiors. Just a year later in 1951, the need for an order expediter in the Sales Division arose and he was chosen for the job.

As expediter, he dealt first-hand with our customers on specific orders. Generally speaking, it was his responsibility to see that every effort was made to get a customer's order to him on schedule.

His next promotion came in 1952 when he advanced from order expediter to order interpreter, a job that is extremely important to both the customer and the company.

A difficult and responsible position, every order received by the Sales Division must be interpreted by the order interpreter before being channeled through production. This is due to the fact that many orders are received without sufficient information. Customers often fail to specify a certain quantity, size or catalog number when ordering Mueller products.

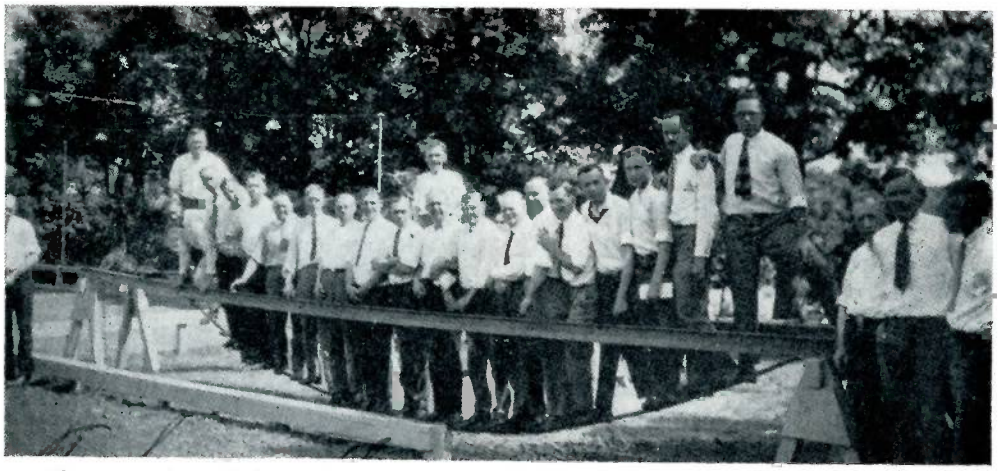
CHARLES O. BAFFORD

As order interpreter, Mr. Bafford had the opportunity to become familiar with our Sales Division. He performed this function successfully and when the opportunity came for a member of the Sales Division to become first assistant to Mr. Yonker, Mr. Bafford was the logical choice.

Born on a farm in Central Illinois, Mr. Bafford attended high school in Blue Mound, Illinois, and later attended Millikin University in Decatur. He is married and has two children, Lana Rae, five, and Dean, four. He makes his home in Blue Mound, some thirteen miles south of Decatur.

His organizational abilities were demonstrated many times during the three years he spent in the Army. After basic training, he was assigned to Special Services for the Infantry and served thirty months in Africa and Italy. During that period, it was his responsibility to arrange shows for the troops, and he became acquainted with some of America's top celebrities.

In his present position, his duties include the handling of correspondence with our customers. He often is called upon to recommend Mueller products best suited for their particular problems, and he also provides technical assistance to our sales representatives.



The strength and durability of Mueller copper service pipe was dramatically demonstrated by members of our Sales Division during a sales meeting at Mueller Lodge in Decatur during the year 1928. The weight of eighteen men on copper service pipe was ample proof of its worth to the cautious water works man. Such demonstrations were given throughout the nation by two groups of specially trained sales representatives who introduced copper service pipe to the water works industry.

Did You Know?

That Mueller Co. Introduced Copper Service Pipe To Waterworks Industry

MUELLER CO. can look back on a distinguished history in the art of water distribution. Our engineers have remained abreast of the industry for many years; undoubtedly, however, one of our most important contributions was the introduction of Mueller copper service pipe and a full line of corporation stops, curb stops and service fittings in 1924.

Many persons new to the industry probably do not know that it was Mueller Co. who developed copper service pipe and then went about the task of convincing a naturally cautious water works industry of the advantages offered by copper service pipe over other piping used at that time.

Previous to 1924, various types of service pipe were available, each having some characteristics which were ideal for the purpose. None, however, embodied enough of the desirable features to meet the majority of service conditions satisfactorily.

Steel, wrought iron, lead and brass, alone and in combinations, had been used for many years prior to 1924. Where conditions were satisfactory, this piping proved to be successful. However, it was necessary to have a thorough knowledge of the limitations of this piping and the conditions surrounding each installation in order to satisfactorily install such piping.

The industry's need for a superior service pipe prompted our engineers to tackle the problem. Their solution, of course, was copper service pipe as we know it today.

In looking for a new metal from which service pipe could be made, Mueller engineers turned to copper, one of the oldest known metals. Copper articles including pipe date back to 3400 B.C., having been found among ruins of ancient Egypt. Their remarkable state of preservation indicates the everlasting qualities of this material.

Copper pipe in iron pipe sizes had been in use to a limited extent prior to 1924, but it remained for Mueller Co. to realize the possibilities of copper and to develop and utilize its natural characteristics.

In the development of Mueller copper service pipe our engineers considered the following as being essential to an ideal service pipe:

1. Suitable joint and fittings.
2. High strength or resistance to mechanical failure from
   a. internal fluid pressure
   b. freezing
   c. external forces
   d. vibration and fatigue
3. High resistance to corrosion
   a. external or soil corrosion
   b. internal corrosion
   c. effect on health
4. Flow characteristics and capacity
5. Flexibility and ductility
   a. bending
6. Methods and cost of installation.

Our copper service pipe fulfilled these requisites to a remarkable degree. The tubing and size, known as the Type K Copper Water Tubing, as originated in 1924, has been accepted as standard specifications for copper tubing by the American Water Works Association. Mueller corporation stop threads have been adopted by the American Water Works Association as their standard threads for underground service line fittings.

Although our engineers knew we had an outstanding new product, our Sales Division faced the problem of convincing customers that a change from all other service piping to copper service pipe would be advantageous.

We met this challenge by sending specially trained Mueller sales representatives on a nationwide tour. Virtually every city in the United States was visited. The sales group traveled in two trucks, one covering the Eastern United States while the other went up and down the nation west of the Mississippi River.

A dramatic demonstration showing the superiority of copper service pipe was given before hundreds of water works officials. Considerable research was done by pathologists and their findings pointed out that use of copper service pipe could not possibly produce any harmful effects. Gradually, the strength and durability of the new piping became a known fact.

Word of this new copper tubing traveled quickly. As time passed, opposition to copper service pipe dwindled and by 1930, the new pipe was accepted throughout the nation as the best service pipe for water distribution.

This Mueller Co. truck made a tour of the Eastern United States after the introduction of Mueller Copper pipe service in 1924. Specially trained Mueller sales representatives visited virtually every city in the nation in an effort to introduce copper tubing as a service pipe for water distribution. The photo above was taken at Flemington, New Jersey on October 12, 1928.

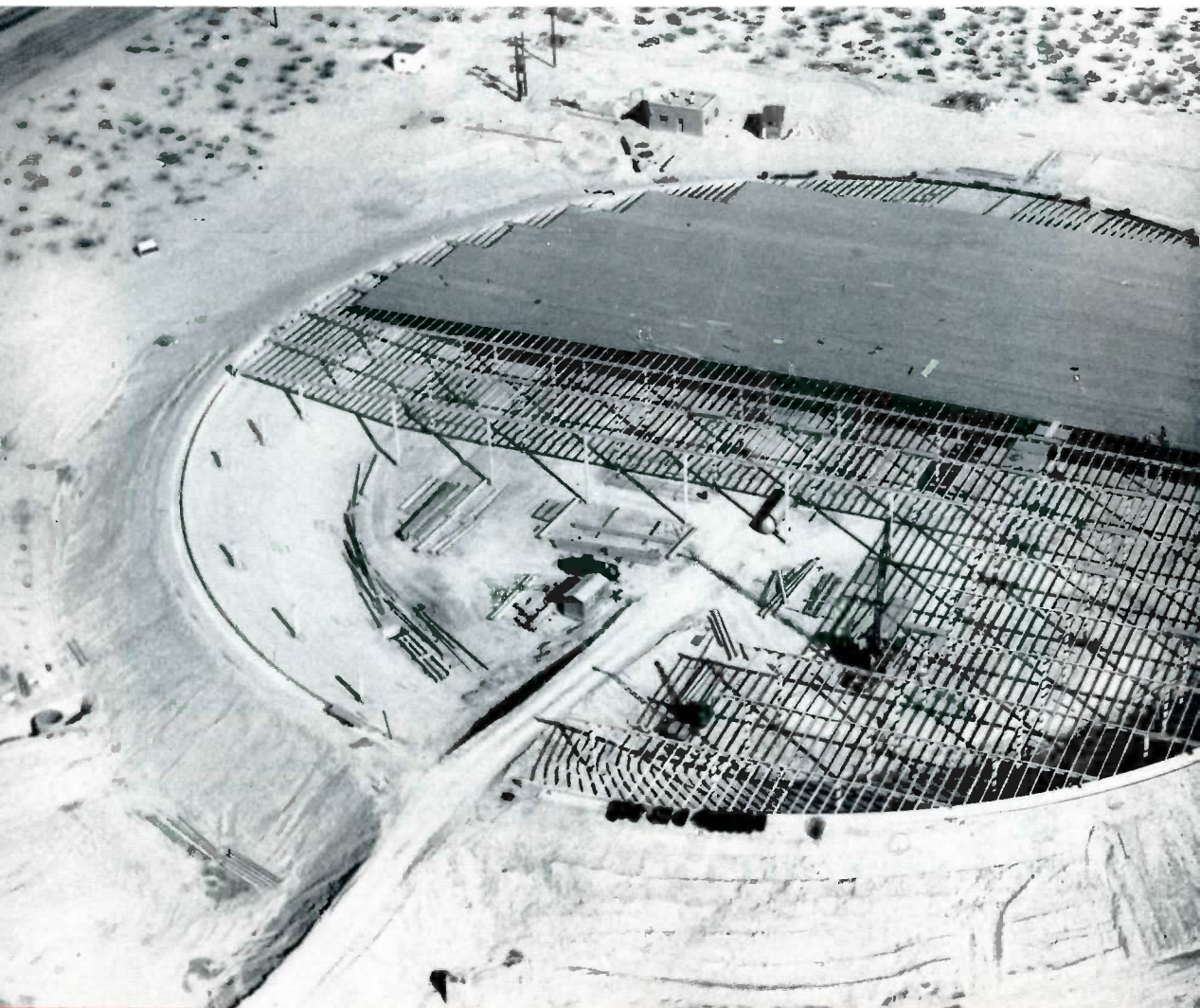
Tucson, Arizona Looks Ahead

Underground Water Plentiful; However Over-Pumpage Noted

ALTHOUGH THE CITY of Tucson, Arizona, is in no immediate danger of a serious water shortage, forward thinking officials of the city's Water Department are taking no chances.

Back in 1948, Yost and Gardner Engineers, the firm that does most of the engineering work for Tucson, made a complete water report to the city. The firm's study of the situation determined that over-pumpage of the Santa Cruz

This air photograph, taken several months ago, gives a good view of Tucson, Arizona's new twenty-million gallon reservoir under construction which will make the water supply immediately available and will help ease the constant pumping operation required to supply this large area.



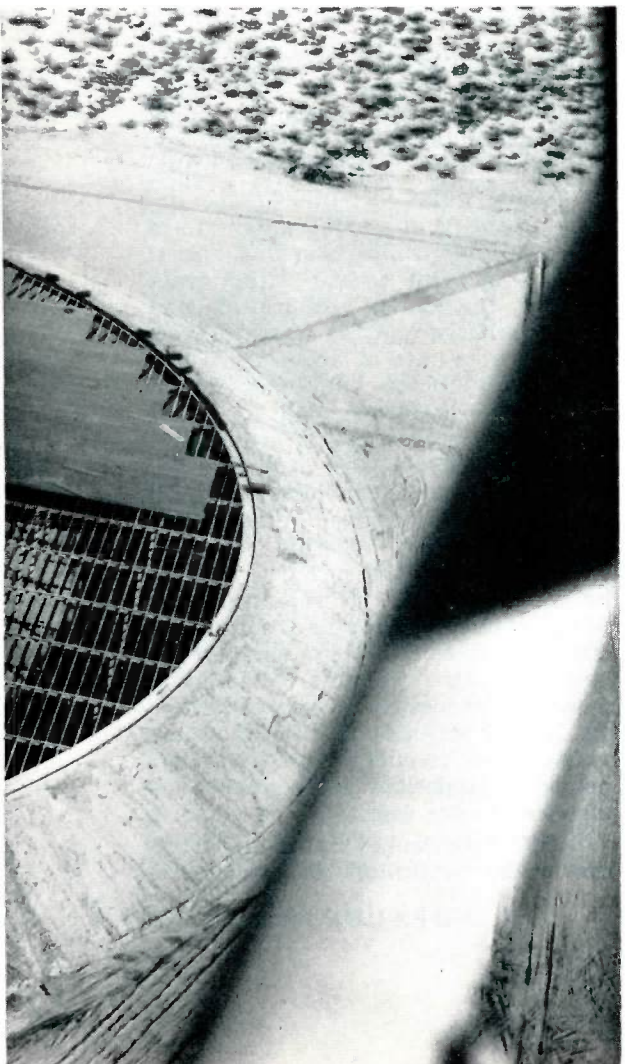
Valley was evident. This prompted the investigation of many additional sources in order to provide a firm water supply.

Yost and Gardner's report was confirmed by a 1952 United States Department of Interior Geological Survey report on the ground-water supply in the Tucson area.

By way of explanation, the City of Tucson is in the valley of the Santa Cruz River, a north-flowing stream that is tributary to the Gila River. The climate of the area is dry and warm, and the annual precipitation is about twelve inches. The Santa Cruz River is dry except during short periods after storms.

Despite the fact the Santa Cruz is dry most of the time, nature has blessed the area with an adequate ground-water supply.

The Santa Cruz River valley is bordered by mountains which rise 1,000 to 7,000 feet above its floor. The valley is underlain by alluvial fill: gravel, sand, silt, clay and layers of caliche. In some other valleys in Arizona the alluvial fill is known to be 4,000 feet or more in thickness. The total thickness of the alluvial fill in the Santa Cruz Valley is unknown, as only two wells have been drilled deeper than 1,000 feet. Even the deepest well, 1,480 feet, did not encounter bedrock. The fill in the Santa Cruz Valley was deposited as a result of erosion of the neighboring mountains. As the land-surface gradient is steepest near the mountain fronts and least along the axis of the valley, the coarser materials, gravel and sand, generally occur in greater proportion nearest the mountain fronts.



During the past few thousand years, the Santa Cruz River and its tributary washes have meandered and cut channels, or "inner valleys" a mile or so wide and as much as 150 feet deep in the older alluvial fill. Later, the streams have redeposited sediments to depths of 100 feet or less in these inner valleys. To distinguish between the two alluvial fills, the term "older fill" is applied to the shallow materials underlying the stream channels.

A large part of the alluvial fill contains ground water which occupies the pore spaces between the component particles. If the pore spaces are small, as in clay, the ground water is held in place and cannot be withdrawn from wells. If the pore spaces are large, as in sand and gravel, the ground water is free to move into wells and can be withdrawn by pumping. The water enters the ground mainly along stream channels, which are most numerous near the mountain fronts. Little recharge occurs as a result of infiltration from rain falling directly on the valley floor. The ground water moves toward the axis of the valley and thence downstream.

In moving through the alluvial fill the ground water dissolves mineral matter. If mineralized ground water has moved through an aquifer for a long period of time or if the water has been stagnant, some of the dissolved minerals may be redeposited, thereby partially filling the pore spaces and forming what are known as cemented zones. As the

Earth moving equipment builds the circular pattern wall of Tucson, Arizona's new reservoir. Maximum depth of the water will be 24.83 feet. Diameter of the floor is 320 feet and the diameter of the roof is 414 feet.

older fill contains more cemented zones than the younger fill, ground water moves less freely than it does in the younger fill. Thus, the younger fill receives recharge more readily and likewise yields water more readily to wells. In the Tucson area, the younger fill along the Santa Cruz River and Rillito Creek receives a considerable part of its recharge by downward seepage from the occasional flows of the streams.

According to early travelers, prior to the development of ground-water for irrigation in the Santa Cruz Valley the Santa Cruz River flowed at Tucson, and for about twenty miles downstream, during a large part of each year. Vegetation was luxuriant in this zone of shallow ground water and both the stream and vegetation were a means of natural ground-water discharge. Thus, there was a balance between recharge and discharge of ground water.

Withdrawal of ground water from wells upset this balance. The natural discharge, by stream flow and native vegetation, was reduced approximately by the net amount of ground water pumped (the total amount less the portion that had returned to the water table, such as seepage from irrigation ditches and irrigated fields). Eventually, pumping lowered the water table sufficiently that the stream no longer flowed except after heavy storms, and withdrawal from wells began to utilize the ground water in storage.

The quantity of ground-water stored is very large in comparison with annual recharge or with annual withdrawals. However, the annual withdrawals now exceed recharge and the water table is reclining at a rate of about three feet per year at Tucson. In Pima County during 1951, the latest year for which complete pumpage data is available, a total of 240,000 acre-feet of ground water was withdrawn, of which about 35,000 acre-feet was pumped in the Tucson metropolitan area. During the five-year period from the spring of 1947 to the spring of 1952 the water table declined by amounts ranging from a minimum of four feet to the outer limits of the metropolitan area to a maximum of 18 feet in the locality of heaviest pumping. A few miles farther north, where ground water is pumped for irrigation, the maximum decline in the same period was twenty-four feet.

In the Upper Santa Cruz Valley (Mexican border to Rillito) the annual re-

charge is estimated 125,000 acre-feet. The discharge in 1951 was about 207,000 acre-feet. Thus, the deficit in 1951 was about 82,000 acre-feet.

The Geological Survey points out that it is not feasible to estimate the further rate of decline of the water table because certain important factors that affect the supply cannot be predicted: A prolonged wet cycle would tend to raise the water table; a large reduction in withdrawal would reduce the rate of decline. Nevertheless certain inferences can be drawn, the Survey states. The depth to water in the Tucson metropolitan area currently is forty to sixty feet along the river, indicating a total decline of that amount since ground-water withdrawals were begun. If the current rate of decline, about three feet per year, were maintained for the next twenty years the water table would decline an additional sixty feet. Water bearing minerals are known to exist to depths of at least 500 feet in the area. However, the most productive deposits, and thus those in which the decline is of the greatest significance, are in the upper part of this range.

Yost and Gardner Engineers pointed out that the 1951 water deficit does not imply a ground-water shortage in the near future. There are 6,600,000 acre-feet of water in storage within 300 feet of the land surface, and when recovered, the amount would supply the average annual water deficit of 1951 for approximately 80 years.

The engineering firm explains that the water table decline in the Tucson area for 1947-52 was less than three feet per year. The decline in 1952 was three and one-half feet. If the decline continues at the 1952 rate, about sixty-five years would be required to lower the water table to a depth of 300 feet. Even with greatly increased domestic withdrawals there is certainly in excess of fifty years use of the basis at reasonable pumping lifts.

The growth of Tucson, often referred to as the "Sunshine Capital of the United States"—(official Weather Bureau records show that throughout the year the city averages eleven hours of sunshine daily)—has been remarkable during the past ten years. Recognizing the over-pumpage of the Santa Cruz Basin, such Water Department officials as Phil J. Martin, water superintendent, and John F. Rauscher, hydraulic engineer for the Tucson Waterworks Plant and System, have a long range program already in effect to assure Tucson's residents and industrial citizens of an adequate water supply for many years to come. As a general rule, 10,000 acre-feet per year will serve about 56,000 people. According to preliminary studies, the city can obtain 8,000 to 10,000 acre-feet per year from the upper Alter Valley, twenty-six miles to the west. In the event that the Charleston Dam is built, seventy miles to the east, the city has made application for ten to twelve thousand acre-feet per year from the San Pedro River surface supplies. When it becomes economically feasible to acquire lands now used for agricultural purposes in the Upper Santa Cruz River Valley, fifteen to twenty miles to the south, as much as 40,000 acre-feet per year could be obtained from this source.

One step taken by the city recently was the construction of a twenty-million gallon reservoir which makes the water supply immediately available and will help ease the constant pumping operation required to supply this large area.

Yost and Gardner Engineers did all the engineering work for this giant reservoir while construction work was done by the San Xavier Construction Company.

Here are a few pertinent facts about the reservoir:

The total contract price amounted to $282,151.10.

Time to complete construction (not including the 120-day delay due to shortage of required steel sections) was ten months.

The lining is Gunite applied in two layers. The first layer was one and one-half inches thick and contained a 4"x4" by #8 x #8 reinforcing mesh. The second layer is one inch thick with a screen finish. The total lining area is 143,057 square feet.

The roof is supported by 148 reinforced columns spaced twenty-four feet by thirty-six feet.

The entire roof structure was Hot-

(Continued on page 19)

In The Buyers' Market

SERVICE vs. PRICE

(Editor's Note: The following editorial written by William W. Brush, Editor, Water Works Engineering, appeared in the August 1954 number of that publication. The editorial is particular apropos at this time to customers and friends of Mueller Co. Mr. Brush has granted us permission to reprint his very timely article for our readers.)

By WILLIAM W. BRUSH
Editor, Water Works Engineering

We are in the buyers' market period, following a long-time sellers' market. Price-wise, this change is advantageous to water works systems as buyers, but the resultant keener selling competition has developed problems important to water works operators.

W. W. BRUSH

The lower price argument is now being frequently used to influence buyers to switch from articles that have served satisfactorily, to other untried products.

This situation poses buying problems for water works men, especially those operating municipal plants. An editorial appraisal made ten years ago applies to the present situation. Excerpts follow.

"In the forty years I was engaged on municipal water systems, a constant struggle over buying for service as against buying on the basis of price, was maintained between the technical staff of the city water organization and those in and out of the city service who, for various reasons, advocate a price basis.

"Assuming two articles will give equal quality of service over an equal period of time, no one could properly question the advisability of purchasing the article that is offered at the lower price. Unfortunately, the problem is seldom that simple. Generally, the water works operator knows the article has given satisfaction in the past and naturally endeavors to call for such article in his purchase requisition. If the requisition is to be sent to a central purchasing agent, it is the duty of that agent to buy what is called for at the lowest price obtainable.

"Normally, the vendor, who obtains the order, is only interested in delivering the lowest cost article he believes will be accepted by the municipal authorities as complying with what is called for. At times, the description in the requisition is not adequate to require the delivery of the article desired, and a less satisfactory article is delivered and accepted.

"Under such circumstances, the water works operator endeavors to change his next requisition for the article so as to secure the service known to be obtainable. The article desired may or may not be secured and thus the struggle may go on.

"If the purchasing agent is helpful and cooperates with the water works operator, it is probable that but a short time will elapse before the requisition will be drawn in such a manner as to secure what is needed for service. The initial price may be higher, but the combination of price and service will make for real economy as compared with a lower initial price for an article that will give inferior service.

"A municipality is the loser if its officials do not cooperate in a continuous

effort to buy for service and not on the basis of price only.

"I recall a situation when auto tires of good quality were furnishing average service of 10,000 miles but, in our department, we were compelled to lay up trucks and service cars because the tires we were receiving averaged 3,000 miles. I never found out definitely the real cause of our troubles, but with the help of one of the Finance Department engineers, we finally secured tires that gave good service, comparable with any then made.

"Another service that is important to the operator is securing the make of valve, hydrant and meter previously used. If other makes are bought, repair parts to be stocked are increased, and repair men must become familiar with the new designs. To avoid this situation is not easy, although important from the maintenance standpoint. Purchasing officials should help operators get what experience shows they should have."

With the return of an open competitive market, it will be to the best interests of our consumers if water work men encouraged and helped to buy materials and equipment with service as the major consideration. Price is necessarily one of the factors to be taken into account, but alone it should not control.

A careful, unbiased evaluation of service and price should be sought as a proper basis for purchase. By so doing, what is most desirable, in the long run, for both consumers and operators, is likely to result.

- Interesting Facts -

In a free enterprise economy, says the Chamber of Commerce of the United States, prosperity depends upon both private business and government, and upon neither alone. Private business and industry should have policies and programs designed to expand the economy. Government must establish proper fiscal, debt management, monetary and credit measures, and thus provide the economic climate and stimulus for successful private actions.

* * *

Money accumulated in employee welfare funds throughout the nation now totals about $22 billion, or $3 billion MORE than the $19 billion trust fund of the federal social security system. By and large, employers are the principal contributors to welfare funds.

* * *

America's storekeepers were among the first to break the line of prejudice against employing women, according to the Chamber of Commerce of the United States. Long before the typewriter "liberated" the American woman, it became respectable for her to work in a store where the customers were women. The next step was feminine ownership of retail establishments, of which the millinery shop is a classic early-day example.

More than 20 million transactions per hour take place in American retail stores. This means that one out of eight million Americans is buying something in a retail store at any given hour, says the Chamber of Commerce of the United States.

* * *

The profit motive, one of the major reasons for our increasing productivity, is a powerful economizer as well as a stimulant, says the Chamber of Commerce of the United States. For the profit motive gives everyone incentive to make resources go further. That is its great social significance. Each of the nation's four million separate business establishments is anxious to survive and most of them are anxious to grow. That means that in four million separate locations we have somebody who is trying to check costs and increase productivity. The profit motive also provides incentive to discover new resources.

* * *

One-sixth of all non-manufacturing jobs in the whole country are now located in California and Texas, and California leads the nation in the number of construction workers. One reason—auto travel has made the advantages of milder climate in the two states apparent to more persons.



H. R. (Chubby) Wright, superintendent of distribution, Miami, Florida, water department, is shown at left in his greenhouse which is crowded with many of his own varieties of orchid plants. Center, Mr. Wright holds a variety of the "Spider" orchid bloom. At right is his own beautiful breed of orchid with fiber roots adhering to the bark of a tree.

After Hours Hobby

He Breeds and Raises Orchids

THE RESPONSIBILITIES that go with the job of supplying water to a city such as Miami, Florida, keep a water distribution superintendent keyed to a high pitch. In an area that has seen tremendous growth during the past decade, a large staff of employees is needed to meet daily demands.

The fellow who holds down the rugged position of superintendent of water distribution at Miami is H. R. (Chubby) Wright who can get just as excited as the next fellow in a pinch, but somehow has the qualities required in a man to meet every emergency and conquer it successfully.

Mr. Wright knows this business of water works. He knows Miami's distribution problems probably better than any other person, having served with the City Water Department for the past thirty-eight years. Fourteen years ago in 1940, he was elevated to the position of assistant superintendent of distribution, Department of Water and Sewers. Four years later he was promoted to superintendent.

W. A. Glass is director of the Department of Water and Sewers, and as such is in charge of all of Miami's water system. He has had thirty-five years' activity in the water works field, and from 1917-19, he was superintendent of the Water Department at Edwardsville, Illinois. During 1953, he was chairman of the Water Works Management Division of the American Water Works Association.

Just exactly what connection the two had, Mr. Wright isn't certain, but the same year he was promoted to superintendent—1944—he became interested in a very unusual and satisfying hobby.

He began breeding and growing orchids.

This hobby has provided Mr. Wright with many hours of relaxation and no doubt has helped him recover sufficiently from a hard day's work so that he could return to the job the following day and again solve the many new problems that arise daily in a growing city.

Since the end of World War II, the city of Miami has had an increase of approximately five thousand water services each year. The growth of the city can be compared with water consumption. For example, in 1941, aver-

Superintendent Wright, left, and Jack Vaughn, supervisor of the meter shop, examine Mueller valve inserting equipment in the photo at left. At center, R. L. Burdick, Mueller Co. sales representative, Blair Wishart, water maintenance foreman, and George Faulkner, water maintenance supervisor, kneel in front of the city's trailer for Mueller valve inserting equipment. At right, Mr. Faulkner is shown with a four-inch Mueller inserting valve which was recently installed.

age daily consumption of water was twenty-three million gallons. The 1954 average daily consumption has been eighty-six and one-half million gallons —an increase of nearly four times that of 1941.

Other examples of the growth of the distribution system is that in 1941, Miami had approximately 30,000 water services. Today the city has 75,000 water services.

Mr. Wright has served as superintendent at a time when Miami has experienced a rapid growth. He has a staff of 140 city employees and has expertly directed them to meet the need for an ever increasing distribution system.

With such a responsibility, he can look back with a great deal of satisfaction upon his success as superintendent. He is equally as proud of his record as a florist. He first became interested in breeding and growing orchids in a small way, but today he is known by many persons throughout the city for his success. He has his own greenhouse and spends most of his free hours there caring for his precious plants.

At present, Mr. Wright has about 1,000 plants including some 250 different varieties. (The common variety is known as "Trianae").

Jest Thinkin'

Husband: A man who wishes he had as much fun when he is out as his wife thinks he does.

* * *

By the time we decide a television program is something the children shouldn't see we're too interested in it ourselves to shut it off.

* * *

The most aggravating thing about the younger generation is that we no longer belong to it.

From somewhere comes this one: "Advice to farmers: If your cow doesn't give milk, sell him."

* * *

Golfer: "Well, caddy, how do you like my game?

Caddy: "I guess it's all right, but I still prefer golf."

* * *

The visitor was gazing down into the crater of the famous Greek volcano. Finally he commented, "It sure looks like the devil!"

"Oh," retorted his guide, "You Amercans—you've been everywhere!"

Recording Our Thoughts

". . . Would it be possible for you to send this office about a dozen copies of the August issue of the MUELLER RECORD? We find the article, 'The Water Superintendent and Fluoridation,' to be very complete and beneficial."

Robert H. Stewart,
Secretary
Borough of Morrisville
Morrisville, Bucks Co., Pa.

* * *

". . . . Will you be so kind as to forward two dozen copies of the MUELLER RECORD—August, 1954—if available? We are very much interested in Dr. Black's article on fluoridation. . . ."

Carl I. Kear,
Manager
Minersville Water Authority
Minersville, Pa.

* * *

". . . . There has been considerable agitation in our city in regard to the fluoride which we have been putting in our municipal water supply; therefore, we were most interested in the article which appeared in the August issue of the MUELLER RECORD entitled 'The Water Superintendent and Fluoridation.' We would appreciate it if you could send us about a dozen copies of this issue of your magazine or if you could tell us where we might get copies of this article. . ."

Very truly yours,
O. E. Stolen
City Manager
Ishpeming, Michigan

* * *

Excerpts from the above letters are typical of the many received regarding the paper, "The Water Superintendent and Fluoridation," in the August, 1954, number.

The MUELLER RECORD is grateful to Dr. A. P. Black, the author, for granting permission to reprint the paper which first appeared in the May number of THE MUNICIPAL SOUTH, a magazine published in Charlotte, North Carolina.

Dr. Black has been informed of the favorable acceptance of his paper and his letter written after the paper's publication follows.

"Dear Sir:

"I am pleased to learn that my paper on fluoridation, which you reprinted from THE MUNICIPAL SOUTH in the August number of your RECORD, has been favorably received. It was Editor Clark's (Mr. David Clark, executive editor of THE MUNICIPAL SOUTH) idea that someone should prepare a paper on this subject addressed specifically to water works superintendents, and I think it was particularly appropriate that the paper should appear in his publication and yours because both of them number among their readers a high percentage of municipal officials.

"I hope that the year 1954 may prove the turning point in the development of this great advance in public health and there are indications over the country that it will. Certainly your interest in republishing my paper should do a great deal to help.

"With best wishes, I am

Sincerely yours,
Dr. A. P. Black, Head
Department of Chemistry
University of Florida
Gainesville, Florida

* * *

Elsewhere in this issue our readers will find an article which will remind them that Mueller Co. introduced copper service pipe, now universally accepted as the best service pipe for water distribution. The pipe was first introduced in 1924.

The fact that it has been thirty years since copper service pipe was introduced was pointed out by one of our longtime customers, Howard B. Eick, superintendent of the water department at Flemington, New Jersey.

Two photographs which accompany the article were sent to us by Mr. Eick along with the following letter:

"Gentlemen:

"I was looking through some old files when I came across these two pictures. The one of your service car was taken at Flemington, New Jersey, on October 12, 1928. The photo was taken in front of the Union Hotel and my car is in the back.

"The service pipe testing demonstration photograph appeared in one of your old catalogs.

"I started with the Flemington Water Department in 1923 and have used your service pipe since the day it was put on the market. I thought you might be interested in looking at these."

Sincerely,
Howard B. Eick
Water Superintendent
Flemington, N. J.

Thanks, Mr. Eick. The introduction of copper service pipe is but one of many things that give Mueller Co. an outstanding record in the Water Works industry.

Customer: "Have you a book called "Man, the Master of Women?"

Salesgirl: "Fiction counter to your left, sir."

* * *

Nothing is opened more by mistake than the mouth.

MUELLER Record

October • 1954

WALTER H. DYER, Editor

MUELLER CO.

MANUFACTURERS OF WATER AND GAS DISTRIBUTION AND SERVICE PRODUCTS

FACTORIES
DECATUR, ILL. LOS ANGELES, CALIF.
SARNIA, ONT. CHATTANOOGA, TENN.

SALES OFFICES
NEW YORK CITY SAN FRANCISCO

TRADE MARK
MUELLER
Reg. U. S. Pat. Off.

Member Industrial Editors Association of Chicago and International Council of Industrial Editors

Tucson Looks Ahead

(Continued from Page 13)

Dip galvanized after fabrication, and then bolted in place. It is corrugated, galvanized roofing secured by galvanized metal roof clips. The area of the roof is approximately three acres.

The reservoir is of circular pattern to facilitate maximum capacity. Earth was moved and compacted in a fifteen-foot high berm which contains a total of 33,224 cubic yards.

The maximum depth of water in the reservoir is 24.83 feet. Diameter of the floor is 320 feet, and the diameter of the roof is 414 feet.

Superintendent Martin and Engineer Rauscher realize that long-term water supply requirements for a constantly expanding community will have to be met. All further sources of water, including benefits possible from the Central Arizona Project, will be utilized to the greatest extent toward the end that the water situation is stabilized on a usable and economic basis. Those responsible for the future water supply of Tucson are aware of the problem and are laying plans to meet the water needs as they develop. These plans provide for adequate water for both domestic and industrial use.

It was Richard Baxter, the late English minister, who often said that certain people possessed "wheelbarrow" religion.

"Why do you say that?" asked a friend one time.

"Because," replied Baxter, "they go only when they are shoved."

* * *

The judge told the defendant: "I can't think of anything worse than a man beating his wife. What made you do it?

"Well, she kept saying hit me, and I'll have you brought before that bald-headed old baboon in the court, and we'll fix you."

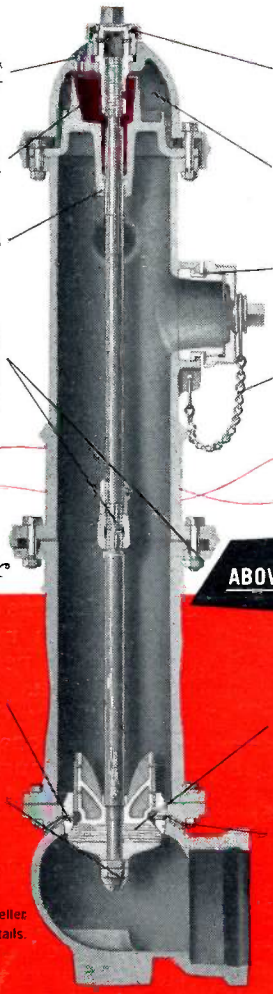
"Case dismissed!"

* * *

If all the cars in this country were put end to end, 90 per cent of the drivers would pull out to pass the car ahead.

MUELLER

AWWA IMPROVED FIRE HYDRANTS



OIL FILLER PLUG
Check oil level quickly with dipstick and add oil if needed without removing bonnet.

OIL RESERVOIR
Positive, automatic lubrication of all stem threads and bearing surfaces each time hydrant is operated.

"O" RING SEALS
Permanent, water-tight seal without adjustments or binding.

SAFETY FLANGE AND SAFETY STEM COUPLING
Prevent damage and permit convenient facing of nozzles, addition of extension sections or changing of upper barrel for different nozzle arrangements quickly, easily, inexpensively . . . all without digging or water shut-off.

BRONZE WEATHER CAP
Prevents freezing of operating nut and discourages tampering.

DRY TOP DESIGN
Operating threads and bearing surfaces sealed from water.

BREECH-LOCKED NOZZLES
Interlocking lugs and calking prevent blow-out. Easily removed if necessary.

NON-KINKING CHAINS
Each chain individually attached directly under nozzle.

. . . designed for **ABOVE-GROUND MAINTENANCE!**

BRONZE SEAT RING
Straight threads and copper asbestos gasket permit easy removal of seat ring.

BRONZE CAP NUT
Locks and seals stem threads to prevent corrosion.

COMPRESSION-TYPE MAIN VALVE
Closes with water pressure . . . stays closed without strain . . . permits repairs or changes without water shut-off.

DOUBLE DRAIN OPENINGS
Automatically force flushed each time hydrant is operated.

Consult your Catalog W-96, your Mueller Representative, or write for full details.

MUELLER CO.

Dependable Since 1857
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