

April 20, 1943.

Mr. E. W. Bacharach,
Rialto Building,
Kansas City, Mo.

Dear Mr. Bacharach:

Thank you for your letter of April 19th, which
arrived this morning.

I shall be happy to see you at 1 o'clock on
Thursday, April 22nd.

Sincerely yours,

FCA:AH

Director of Physical Education,
Varsity Basketball Coach.

E. W. BACHARACH & CO.

FILTER PLANT EQUIPMENT
GRAVITY AND PRESSURE FILTERS
WATER SOFTENING PLANTS
CHEMICAL TREATING PLANTS
SEWAGE DISPOSAL EQUIPMENT



Water Purification Plants

RIALTO BLDG · KANSAS CITY · MISSOURI

April 19, 1943

Dr. F. C. Allen, Director
of Physical Education
University of Kansas
Lawrence, Kansas

Dear Dr. Allen:

Since talking to you over telephone last week, the U. S. Naval Air Base at Olathe, Kansas called for bids on some work in our line. The bids will be opened tomorrow and as I have handled the proposition so far, it is necessary for me to be at the Naval Base at that time.

We have been working overtime to keep up with government orders, and most of our office engineers have had to go on the road. As I do not want to send any man to see you who is not capable of giving you the best recommendations, I prefer to handle the matter myself.

As I see it now, I can be in Lawrence this coming Thursday afternoon, and if I do not hear from you and you do not hear from me meanwhile, you may depend upon me being there. I shall try to be in your office around 1:00 P.M. April 22nd.

Regretting my inability to confer with you tomorrow, I remain,

Sincerely yours,

E. W. BACHARACH & COMPANY

E. W. Bacharach
*

EWB:rh

**SWIMMING POOL
OPERATION SCHEDULE**

- MONDAY**
- 7:30 A.M. - Check pool temperature (78°)
Check pool level (one brick below blue line)
Backwash filter until water is clear
Start pump
Start heat if pool temp. is below 78°
Adjust level of pool (drain or fill to proper depth)
Start chlorinator
Unlock men's door to pool
Turn on pool lights and ventilator
Flush ramp and screen pool water
 - 9:20 A.M. - Flush ramp and screen pool water
 - 10:20 A.M. - " " " " " "
 - 11:20 A.M. - " " " " " "
 - Lock men's door to pool
 - 12:20 P.M. - Flush ramp and screen pool water
Check chlorine (if above .5ppm., shut off chlorinator)
Check pool temp. (if above 80° shut off heater)
 - 3:20 P.M. - Flush ramp and screen pool water
 - 4:20 P.M. - " " " " " "
 - 5:20 P.M. - Flush ramp and screen pool water
Tidy up ramp
Take sample of pool water
Shut off lights and ventilator
Lock men's door to pool
Shut off chlorinator
Shut off heater
Shut off pump
Deliver pool water sample to lab in Marvin Hall
- TUESDAY**
- 6:30 A.M. - Same as Monday 7:30 A.M.
 - 8:20 A.M. - Flush ramp and screen pool water.
 - 9:20 A.M. - " " " " " "
 - 10:20 A.M. - " " " " " "
 - 11:20 A.M. - " " " " " "
 - Lock men's door to pool
 - 12:20 P.M. - Same as Monday 12:20 P.M.
 - 3:20 P.M. - Flush ramp and screen pool water
 - 4:20 P.M. - " " " " " "
 - 5:20 P.M. - Same as Monday 5:20 P.M. except no water sample.
- WEDNESDAY** - Same as Monday except no water sample
- THURSDAY** - Same as Tuesday and take water sample at 5:30 P.M.
- FRIDAY** - Same as Tuesday

SATURDAY

- Same as Monday A.M. and 5:20 P.M. except no water sample

SUNDAY

- Cleanse bottom of pool with vacuum cleaner
Scrub ramp
Scrub sides of pool

VOUCHER

Dr. F. C. Allen

K.U. Gymnasium, Campus

To WATER & SEWAGE LABORATORY DR.
UNIVERSITY OF KANSAS
LAWRENCE, KANSAS

DATE	DESCRIPTION OF ARTICLE OR SERVICE	AMOUNT
1942-43	Annual fee for analysis of K.U. Gymnasium Pool (July 1, 1942 - June 30, 1943) <i>Paid 9-12-42</i>	\$15.00

State of Kansas, County of Douglas ss.

I do solemnly swear that the above account is true and correct, is due, and wholly unpaid and that the charges herein are legal charges, so help me God.

Signature *Revised Young*

Subscribed and sworn to before me this 1st day of September, 1942

[SEAL] My commission expires June 11, 1945

Signed *Mary Elder*

Notary Public.

September 10, 1942.

Mr. Lewis A. Young,
Water & Sewage Laboratory.

Dear Mr. Young:

We are sending you our transfer check No. 8672 to cover the annual fee of \$15.00 for analysis of water in the swimming pool from July 1, 1942, to June 30, 1943.

Dr. Laurence Morehouse, of our department, will bring the samples to you at the opening of school.

Thanking you for this service, I am

Sincerely yours,

Director of Physical Education,
Varsity Basketball Coach.

FCA:AH
Enc.

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Oil Field Section
Ogden S. Jones, Geologist

DIVISION OF SANITATION

Lewis A. Young, Acting Engineer and Director
Mary Elder, Secretary

Marvin Hall, University of Kansas

LAWRENCE, KANSAS

October 9, 1942

Dr. Laurence E. Morehouse
Physical Education Dept.
Campus

Dear Dr. Morehouse:

On the reverse side of this sheet are listed the results of the bacteriological analysis of the sample of water you submitted from the K. U. Pool.

The sample from the Pool showed the presence of coliform organisms which indicate pollution in one of the 10 ml. portions examined making it necessary to report it as in fair condition from a bacteriological standpoint.

Very truly yours,

DIVISION OF SANITATION

Cassandra Ritter

Cassandra Ritter
Bacteriologist

CR:DB

*Gas in the fermentation tubes and confirmatory test indicate the presence of bacterial organisms of the Coliform group. These organisms inhibit the intestinal tract of warm-blooded animals, hence their presence in water shows sewage contamination or pollution from surface drainage. For presumptive test: plus sign, gas present; minus sign, gas absent.
 One part per million is equivalent to 1 pound of substance per million pounds of water. One gallon weighs 8.33 pounds. 100 parts per million—1 grain per gallon.

KANSAS STATE BOARD OF HEALTH

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DIVISION OF SANITATION

Lewis A. Young, Acting Engineer and Director
Mary Elder, Secretary

Marvin Hall, University of Kansas

LAWRENCE, KANSAS

October 15, 1942

Dr. F. C. Allen
Physical Education Dept.
Campus

Dear Dr. Allen:

On the reverse side of this sheet are listed the results of the bacteriological analysis of the sample of water submitted from the K.U. Swimming Pool.

The K. U. Pool has a very high total count of bacteria. There were 5,000 or more in one cubic centimeter of the sample. No coliform organisms were present. This would give the pool a "good" rating from a bacteriological standpoint. The water had a distinctly mouldy odor. The pH of this sample was 6.9. This is a little more acid than is best for swimming pool water.

Very truly yours,

DIVISION OF SANITATION

Cassandra Ritter

Cassandra Ritter
Bacteriologist

CR:db

*Gas in the fermentation tubes and confirmatory test indicate the presence of bacterial organisms of the Coliform group. These organisms inhabit the intestinal tract of warm-blooded animals, hence their presence in water shows sewage contamination or pollution from surface drainage. For presumptive test: plus sign, gas present; minus sign, gas absent.
 One part per million is equivalent to 1 pound of substance per million pounds of water. One gallon weighs 8.33 pounds. 17.1 parts per million—1 grain per gallon.

KANSAS STATE BOARD OF HEALTH

REPORT OF WATER ANALYSIS—CITY OF Lawrence KU Pool

Laboratory No.....	425247							
Source.....	Swim. Pool							
Collected by.....	F. C. Allen							
Date of collection.....	10-12-42							
Date received.....	10-13-42							
Analysis completed.....	10-15-42							
BACTERIAL EXAMINATION*								
Bacteria per ml. on Agar, at 37°—24 hrs.....	5,000							
P-Presumptive tests for Coliform group	P	C	P	C	P	C	P	C
C-Confirmatory tests for Coliform group								
Results of Fermentation Tests:								
10 ml. portions.....	5-							
1 ml. portions.....	3-							
.1 ml. portions.....								
.01 ml. portions.....								
.001 ml. portions.....								
CHEMICAL ANALYSIS <i>Results in parts per million.</i>								
Turbidity.....	10							
HCO ₃ (Bicarbonate).....	34							
CO ₃ (Carbonate).....								
OH (Hydroxide).....								
Cl (Chlorides).....	108							
Fe (Iron).....								
Color.....								
Odor.....								
Special.....	pH 6.9							
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*Gas in the fermentation tubes and confirmatory test indicate the presence of bacterial organisms of the Coliform group. These organisms inhabit the intestinal tract of warm-blooded animals, hence their presence in water shows sewage contamination or pollution from surface drainage. For presumptive test: plus sign, gas present; minus sign, gas absent.

One part per million is equivalent to 1 pound of substance per million pounds of water. One gallon weighs 8.33 pounds. 17.1 parts per million=1 grain per gallon.

October 21, 1942.

Mr. Dwight F. Metzler,
Assistant Engineer,
Division of Sanitation,
University of Kansas.

Dear Mr. Metzler:

I have read very carefully your fine letter of October 14th giving your report on the inspection of the swimming pool and purification equipment in Robinson Gymnasium.

We appreciate very much your attention to this important problem, and I am sure that with the cooperation of all of us we will soon have the pool in much better condition.

Very sincerely yours,

Director of Physical Education,
Varsity Basketball Coach.

FCA:AH

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H. A. Stoltenberg, Chemist

LAWRENCE, KANSAS

October 14, 1942

Dr. F. C. Allen
Director of Physical Education
Robinson Gymnasium
Campus

Dear Dr. Allen:

At the request of your department I made an inspection today of the swimming pool and of the filtration and purification equipment.

The water in the pool was turbid and gave off a considerable odor. The odor can be described as a combination chlorine and mouldy odor. The odor is caused, I believe, by the organic matter present in the water. The increase in the number of persons using the pool has placed a load on the filtration equipment that it cannot treat the water properly under the present conditions of operation.

Most of the analyses have shown this water to be of satisfactory bacteriological quality, but the physical quality of the water is poor. In order to improve the physical quality I am listing some suggestions below. Because of the limited capacity of the recirculating pump and the filter it may be necessary to drain the pool once each two or three weeks. The pump now in use can recirculate all of the water once each twenty-four hours if kept in operation continuously. The suggestions follow:

- (1) Drain the pool and start again with clean water.
- (2) Examine the filter to be sure that the ingredients are properly graded and the required depth. The gravel should be 18" deep and the sand 18" to 24" deep. The sand should have an effective size between 0.35 and 0.50 mm. and a uniformity coefficient between 1.25 and 1.80.

October 14, 1942

(3) Feed alum into the recirculated water after each backwashing of the filter. This is done so that the alum will react with the natural alkalinity of the water to form a floc of aluminum hydroxide over the top of the filter. The floc aids in taking the colloidal material and finely divided particles from the water. A pH between 7.2 and 7.6 should be maintained in order that the floc can form. One-half pound of alum should be added to the solution pot when the filter is backwashed. Both the valve on the influent line and the valve on the effluent line should be opened after the alum has been placed in the pot.

(4) Operate the recirculation pump and chlorinator continuously. The rate of feed on the chlorinator will probably have to be adjusted, as little more chlorine will be required and the feeding period will be lengthened. The water in the pool should be filtered at least three times each day. The present capacity of the pump and the filter will not allow this, so it may be necessary to get larger units or drain the pool more frequently.

(5) Every person entering the pool should take a shower with soap in order to carry as small amount of organic matter into the pool as possible.

The addition of liquid chlorine and a small amount of alum to the water will cause the pH to drop. This may be prevented by the addition of lime or soda ash. It is my suggestion that you obtain several hundred pounds of soda ash to control the pH. This could be mixed in solution and fed at the solution pot each day.

After the pool has been filled for two or three days with the city water, there will be a decided tendency for the pH to drop rapidly. This can be prevented only by careful pH control and the feeding of soda ash. If you will let me know when this stage is reached, I will try to help you get the feed adjusted. When the water has been brought back to the proper alkalinity, a feed of 1-1/2 pounds of soda ash per pound of chlorine is usually sufficient to hold the pH up.

Residual chlorine tests should be made at least three times during the day and a record kept of the results. The residual should build up during the night and will drop again during the day. The chlorine residual should not be less than 0.3 p.p.m. or exceed 0.6 p.p.m.

Very truly yours,

DIVISION OF SANITATION

Dwight F. Metzler
Dwight F. Metzler
Assistant Engineer

DFM:dmb

cc: E. L. Treece

KANSAS STATE BOARD OF HEALTH

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H. A. Stoltenberg, Chemist

Oil Field Section
Ogden S. Jones, Geologist

DIVISION OF SANITATION

Lewis A. Young, Acting Engineer and Director
Mary Elder, Secretary

Marvin Hall, University of Kansas

LAWRENCE, KANSAS

October 12, 1942

Dr. F. C. Allen
Physical Education Dept.
Campus

Dear Dr. Allen:

On the reverse side of this sheet are listed the results of the bacteriological analysis of the sample of water submitted from the K. U. Pool.

The sample from the Pool is in good condition from a bacteriological standpoint.

Very truly yours,

DIVISION OF SANITATION

Cassandra Ritter

Cassandra Ritter
Bacteriologist

CR:db

*Gas in the fermentation tubes and confirmatory test indicate the presence of bacterial organisms of the Coliform group. These organisms inhabit the intestinal tract of warm-blooded animals, hence their presence in water shows sewage contamination or pollution from surface drainage. For presumptive test: plus sign, gas present; minus sign, gas absent.
 One part per million is equivalent to 1 pound of substance per million pounds of water. One gallon weighs 8.33 pounds. 15.1 parts per million = 1 grain per gallon.

REPORT OF WATER ANALYSIS—CITY OF

Laboratory No.....	425168						
Source.....	Swim. Pool						
Collected by.....	Dr. Morehouse						
Date of collection.....	10-9-42						
Date received.....	10-9-42						
Analysis completed.....	10-11-42						
BACTERIAL EXAMINATION*							
Bacteria per ml. on Agar, at 37°—24 hrs.....	350						
P-Presumptive tests for Coliform group	P	C	P	C	P	C	P
C-Confirmatory tests for Coliform group							
Results of Fermentation Tests:							
10 ml. portions.....	5-						
1 ml. portions.....	3-						
.1 ml. portions.....							
.01 ml. portions.....							
.001 ml. portions.....							
CHEMICAL ANALYSIS <i>Results in parts per million.</i>							
Turbidity.....	5						
HCO ₃ (Bicarbonate).....	34						
CO ₃ (Carbonate).....							
OH (Hydroxide).....							
Cl (Chlorides).....	104						
Fe (Iron).....							
Color.....							
Odor.....							
Special.....							
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*Gas in the fermentation tubes and confirmatory test indicate the presence of bacterial organisms of the Coliform group. These organisms inhabit the intestinal tract of warm-blooded animals, hence their presence in water shows sewage contamination or pollution from surface drainage. For presumptive test: plus sign, gas present; minus sign, gas absent.

One part per million is equivalent to 1 pound of substance per million pounds of water. One gallon weighs 8.33 pounds. 17.1 parts per million=1 grain per gallon.

STATE OF KANSAS

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P. C. Sharp, Asst. Engineer

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Secretary and Executive Officer

Industrial Hygiene Section
Charles C. Dills, Engineer
Arthur L. Nichols, Hygienist

DIVISION OF SANITATION
Marvin Hall, University of Kansas

Earnest Boyce, Engineer and Director
Nelle Schneider, Asst. Director

LAWRENCE, KANSAS

November 10, 1939

Department of Physical Education
University of Kansas
Campus

Attention: Dr. F. C. Allen

Dear Dr. Allen:

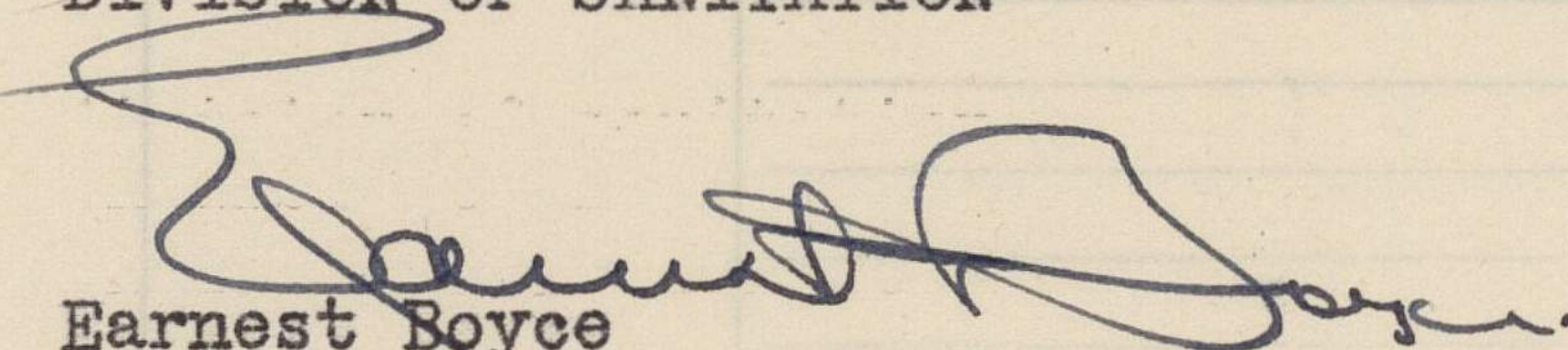
As you will note, the bacteriological analyses of the pool are much improved, showing no organisms of the coli aerogenes group present at this time. Apparently the chlorination has been effective.

I note your memorandum of November 8 regarding the emergency remedial work that might be undertaken. I am wondering if this emergency work might go so far as to include the replacing of the sand in the pressure filter and the regrading of the gravel, as well as the repair of the chlorinator, if such repair is necessary.

I shall be glad to meet with you and discuss this matter at any time.

Very truly yours,

DIVISION OF SANITATION


Earnest Boyce
Engineer and Director

EB:ME

REPORT OF WATER ANALYSIS—CITY OF Lawrence

Laboratory No.....	395990		
Source.....	Shallow	Deep --	Pool
Collected by.....	K. U. Ath. Dept.		
Date of collection.....	11-7-39		
Date received.....	11-7-39		
Analysis completed.....	11-9-39		
BACTERIAL EXAMINATION *			
Bacteria per cc. on Agar, at 37°—24 hrs.....	2,500	2,800	
Presumptive Tests for Coli-Aerogenes Group Results of Fermentation Tests:	-	-	
in 5 10 cc. tubes.....	5-	5-	
in 3 1 cc. tubes.....	3-	3-	
in 3 .1 cc. tubes.....			
in 3 .01 cc. tubes.....			
in 3 .001 cc. tubes.....			
Confirmatory Tests for Coli-Aerogenes Group			
CHEMICAL ANALYSIS Results in parts per million.			
Color.....			
Odor.....			
Turbidity.....	under 1	under 1	
5 day B. O. D.....			
Nitrogen as Nitrites.....			
Nitrogen as Nitrates.....			
Solids, total.....			
Special.....			
Special.....			
MINERAL ANALYSIS			
HCO ₃ (Bicarbonate).....	38	38	
CO ₃ (Carbonate).....			
OH (Hydroxide).....			
Cl (Chlorides).....		199	
Fe (Iron).....			
Special.....			
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* Gas in the fermentation tubes and confirmatory test indicate the presence of bacterial organisms of the Coli-Aerogenes group. These organisms inhabit the intestinal tract of warm-blooded animals, hence their presence in water shows sewage contamination or pollution from surface drainage. Plus sign, gas present. Minus sign, gas absent.

One part per million is equivalent to 1 pound of substance per million pounds of water. One gallon weighs 8.33 pounds. 17.1 parts per million=1 grain per gallon.

STATE OF KANSAS

STATE BOARD OF HEALTH

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Cassandra Ritter, Bacteriologist
Robert H. Hess, Chemist

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Wendell C. Wyatt, Asst. Engineer
P. C. Sharp, Asst. Engineer

F. P. HELM, M.D., Topeka
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Oil Field Waste Disposal Section
Ogden S. Jones, Geologist
Richard G. Prough, Asst. Geol.

Industrial Hygiene Section
Charles C. Dills, Engineer
Arthur L. Nichols, Hygienist

DIVISION OF SANITATION
Marvin Hall, University of Kansas

Earnest Boyce, Engineer and Director
Nelle Schneider, Asst. Director

LAWRENCE, KANSAS

December 1, 1939

Dr. F. C. Allen
Robinson Gymnasium
Lawrence, Kansas

Dear Sir:

We are reporting herewith the bacteriological analysis of the samples of water from the swimming pool.

Both samples are in good condition from a bacteriological standpoint.

Very truly yours,

DIVISION OF SANITATION

Earnest Boyce

ME

* One part per million is equivalent to 1 pound of substance per million pounds of water. One gallon weighs 8.33 pounds. 17.1 parts per million is 1 grain per gallon.

REPORT OF WATER ANALYSIS—CITY OF Lawrence

Laboratory No.	396422			
Source	Shallow	Deep - NW cor.	--	Gym. Pool
Collected by	Dr. Allen			
Date of collection	11-29-39			
Date received	11-29-39			
Analysis completed	12-1-39			
BACTERIAL EXAMINATION *				
Bacteria per cc. on Agar, at 37°—24 hrs.	4,000	3,800		<i>Recommended 200,</i>
Presumptive Tests for Coli-Aerogenes Group Results of Fermentation Tests:	-	-		
in 5 10 cc. tubes	5-	5-		
in 3 1 cc. tubes	3-	3-		
in 3 .1 cc. tubes				
in 3 .01 cc. tubes				
in 3 .001 cc. tubes				
Confirmatory Tests for Coli-Aerogenes Group				
CHEMICAL ANALYSIS Results in parts per million.				
Color				
Odor				
Turbidity	under 1	under 1		
5 day B. O. D.				
Nitrogen as Nitrites				
Nitrogen as Nitrates				
Solids, total				
Special				
Special				
MINERAL ANALYSIS				
HCO ₃ (Bicarbonate)	30	32		
CO ₃ (Carbonate)				
OH (Hydroxide)				
Cl (Chlorides)				
Fe (Iron)				
Special				
.....				
.....				
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.....				

* Gas in the fermentation tubes and confirmatory test indicate the presence of bacterial organisms of the Coli-Aerogenes group. These organisms inhabit the intestinal tract of warm-blooded animals, hence their presence in water shows sewage contamination or pollution from surface drainage. Plus sign, gas present. Minus sign, gas absent.

One part per million is equivalent to 1 pound of substance per million pounds of water. One gallon weighs 8.33 pounds. 17.1 parts per million=1 grain per gallon.

November 8, 1939.

Mr. Earnest Boyce,
Water & Sewage Laboratory,
University of Kansas.

Dear Mr. Boyce:

Thank you very much for your letter of the 6th instant.

I am determined to go before the authorities and ask that the University swimming pool be made as fool-proof as possible. It has often been pointed out that this is the worst pool in the state.

We want to work on an emergency relief measure immediately, but we also want to work on a permanent improvement. Your report will help us in that.

Thanking you for your cooperation, I am

Very sincerely yours,

Director of Physical Education and Recreation,
Varsity Basketball Coach.

FCA:AH

STATE OF KANSAS

STATE BOARD OF HEALTH

F. P. HELM, M.D., Topeka
Secretary and Executive Officer

DIVISION OF SANITATION
Marvin Hall, University of Kansas

Earnest Boyce, Engineer and Director
Nelle Schneider, Asst. Director

Sanitary Engineering Section

Paul D. Haney, Chemical Engineer
Ben L. Williamson, Asst. Engineer
Lewis A. Young, Asst. Engineer
Wendell C. Wyatt, Asst. Engineer
Clifford Sharp, Asst. Engineer

Oil Field Waste Disposal Section

Ogden S. Jones, Geologist

Industrial Hygiene Section

Charles C. Dills, Engineer

Water and Sewage Laboratory

Cassandra Ritter, Bacteriologist
Robert H. Hess, Chemist

LAWRENCE, KANSAS

November 6, 1939

Forrest C. Allen, Director
Physical Education
Campus

Dear Dr. Allen:

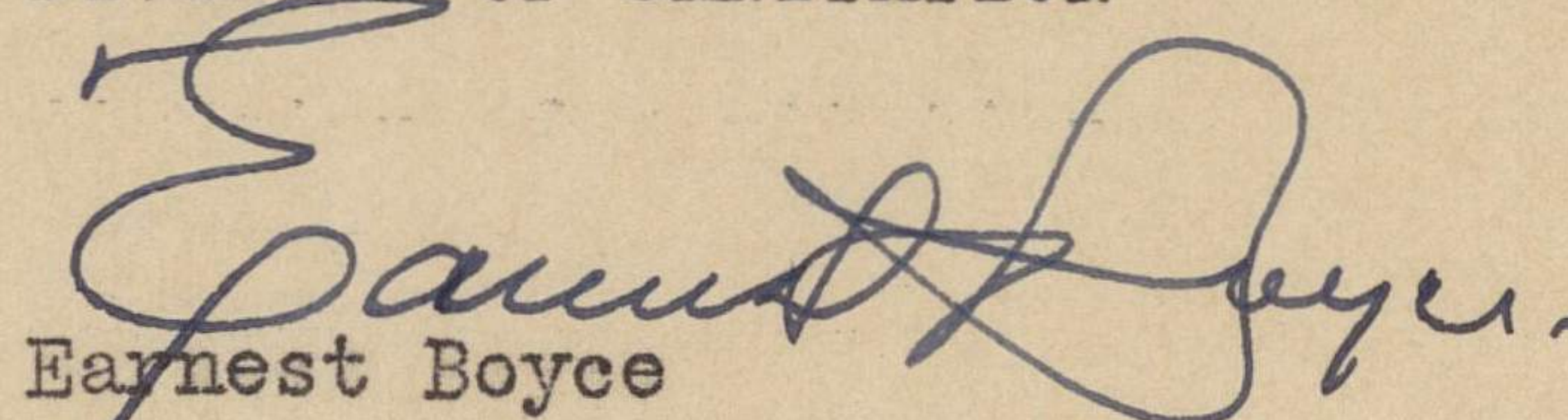
This is with reference to our report on the bacteriological quality of the water in the swimming pool and your note of November 3.

I should be glad to confer with you regarding improvements that might be made in the swimming pool and water purification layouts. I presume funds are not available for any very extensive improvements.

A minimum improvement would be to overhaul the chlorinator to be sure that it is in good operating condition, and to take the sand and gravel out of the filter and replace it with clean sand or regrade it. We would necessarily have to check with Mr. Bayles to find out the amount of work that would be involved in this overhauling.

Very truly yours,

DIVISION OF SANITATION


Earnest Boyce
Engineer and Director

EB:ME

STATE OF KANSAS

STATE BOARD OF HEALTH

Water and Sewage Laboratory
Cassandra Ritter, Bacteriologist
Robert H. Hess, Chemist

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P. C. Sharp, Asst. Engineer

F. P. HELM, M.D., Topeka
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Ogden S. Jones, Geologist
Richard G. Prough, Asst. Geol.

Industrial Hygiene Section
Charles C. Dills, Engineer
Arthur L. Nichols, Hygienist

LAWRENCE, KANSAS

November 1, 1939

Athletic Department
Kansas University
Campus

Gentlemen:

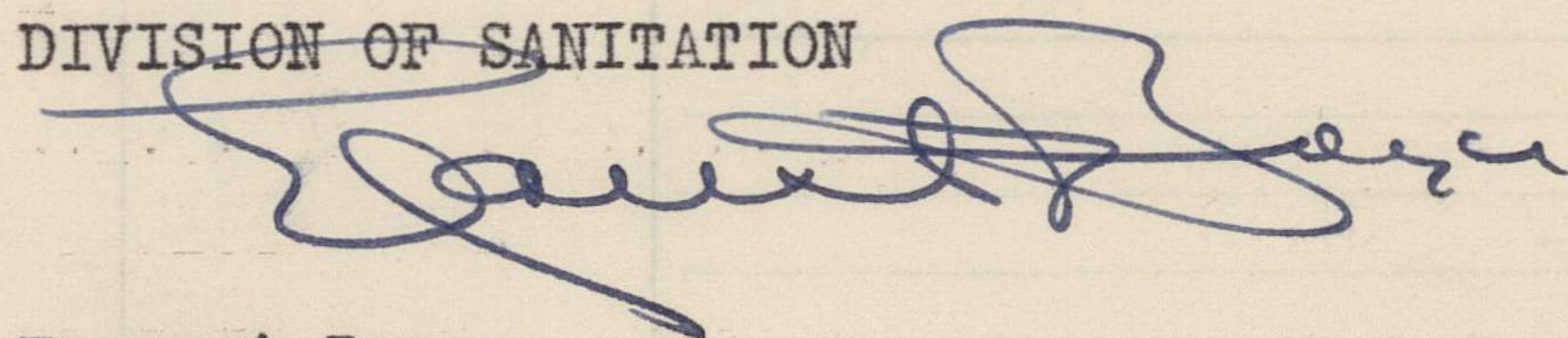
We are reporting herewith the bacteriological analysis of the two samples from the swimming pool--one marked "east end" and one marked "west end".

Both of these samples must be reported as in bad condition, in that organisms of the coliform group were found present in all of the five 10 c.c. portions and in all of the three 1 c.c. portions examined.

We would suggest that it may be desirable to overhaul the water purification installation, including the filter, and to provide for a reasonable chlorination. There have been a great many complaints during the past years with regard to overchlorination of the pool. We believe it is possible to maintain the pool free of coli and at the same time not maintain such a high chlorine residual that the water is objectionable to bathers.

Very truly yours,

DIVISION OF SANITATION



Earnest Boyce
Engineer and Director

EB:ME

REPORT OF WATER ANALYSIS—CITY OF Lawrence

Laboratory No.	395817		
Source	East End	West End --	Pool
Collected by	K. U. Ath. Dept.		
Date of collection	10-30-39		
Date received	10-30-39		
Analysis completed	11-1-39		
BACTERIAL EXAMINATION *			
Bacteria per cc. on Agar, at 37°—24 hrs.	2,000	1,800	
Presumptive Tests for Coli-Aerogenes Group Results of Fermentation Tests:	+	+	
in 5 10 cc. tubes	5+	5+	
in 3 1 cc. tubes	3+	3+	
in 3 .1 cc. tubes			
in 3 .01 cc. tubes			
in 3 .001 cc. tubes			
Confirmatory Tests for Coli-Aerogenes Group	++	++	
CHEMICAL ANALYSIS Results in parts per million.			
Color			
Odor			
Turbidity	under 1	under 1	
5 day B. O. D.			
Nitrogen as Nitrites			
Nitrogen as Nitrates			
Solids, total			
Special			
Special			
MINERAL ANALYSIS			
HCO ₃ (Bicarbonate)	28	30	
CO ₃ (Carbonate)			
OH (Hydroxide)			
Cl (Chlorides)		189	
Fe (Iron)			
Special			
.....			
.....			
.....			
.....			

* Gas in the fermentation tubes and confirmatory test indicate the presence of bacterial organisms of the Coli-Aerogenes group. These organisms inhabit the intestinal tract of warm-blooded animals, hence their presence in water shows sewage contamination or pollution from surface drainage. Plus sign, gas present. Minus sign, gas absent.

One part per million is equivalent to 1 pound of substance per million pounds of water. One gallon weighs 8.33 pounds. 17.1 parts per million=1 grain per gallon.

November 3, 1939.

Mr. Earnest Boyce,
State Board of Health,
Marvin Hall.

Dear Mr. Boyce:

Thank you very much for your report on the bacteriological analysis of the swimming pool. We had not realized that the condition was so bad, but we are gravely concerned and I assure you that we will act immediately to remedy the situation.

I should appreciate your cooperation in doing whatever is possible to improve the water in the pool.

Very sincerely yours,

Director of Physical Education and Recreation,
Varsity Basketball Coach.

FCA:AH

November 3, 1939.

Mr. Ed Hyatt,
1115 Tennessee St.,
Lawrence, Kansas.

Dear Mr. Hyatt:

We recently sent some samples of water from the swimming pool over to Mr. Boyce to be tested. The samples indicate that the pool is in bad condition, and Mr. Boyce suggests that it may be desirable to overhaul the water purification installation.

I am writing to you at this time because I am wondering why you did not suggest having the water analyzed last summer. Since you were also working in the Water and Sewage Laboratory, surely it is not too much to presume that you would be interested in the condition of the water in the pool.

Sincerely yours,

Director of Physical Education and Recreation,
Varsity Basketball Coach.

FCA:AH

STATE OF KANSAS

STATE BOARD OF HEALTH

Oil Field Waste Disposal Section

Ogden S. Jones, Geologist
James J. Brazil, Geologist
Wm. B. Davis, Asst. Engr.

Industrial Hygiene Section

Wendell C. Wyatt, Asst. Engineer
Edwin C. Hyatt, Chemist

F. P. HELM, M.D., Topeka
Secretary and Executive Officer

DIVISION OF SANITATION
Marvin Hall, University of Kansas

Earnest Boyce, Engineer and Director
Nelle Schneider, Asst. Director

Sanitary Engineering Section

Paul D. Haney, Chemical Engineer
Ben L. Williamson, Asst. Engineer
Lewis A. Young, Asst. Engineer
Lester A. Haug, Asst. Engr.

Water and Sewage Laboratory

Cassandra Ritter, Bacteriologist

LAWRENCE, KANSAS

April 11, 1942

Dr. F. C. Allen
Robinson Gymnasium
Campus

Dear Dr. Allen:

We are reporting herewith the results of the bacteriological analyses of the samples of water from the swimming pool.

We are pleased to report that both samples are in excellent condition from a bacteriological standpoint.

Very truly yours,

DIVISION OF SANITATION

Lewis A. Young
Acting Chief Engineer

ME

* Gas in the fermentation tubes and confirmatory test indicates the presence of bacterial organisms of the Coli-Aerogenes group. These organisms inhabit the intestinal tract of warm-blooded animals, hence their presence in water shows sewage contamination or pollution from surface drainage. Plus sign, gas present. Minus sign, gas absent.
One part per million is equivalent to 1 pound of substance per million pounds of water. One gallon weighs 8.33 pounds. 17.1 parts per million = 1 grain per gallon.

REPORT OF WATER ANALYSIS—CITY OF

K. U. Gym. Pool

Laboratory No.	421456		
Source	W. end of Pool	E. End of Pool	
Collected by	Max Kissell		
Date of collection	4-7-42		
Date received	4-7-42		
Analysis completed	4-10-42		
BACTERIAL EXAMINATION *			
Bacteria per cc. on Agar, at 37°—24 hrs.	5	4	
Presumptive Tests for Coli-Aerogenes Group	-	-	
Results of Fermentation Tests:			
in 3 10 cc. tubes	3-	3-	
in 3 1 cc. tubes	3-	3-	
in 3 .1 cc. tubes	3-	3-	
in 3 .01 cc. tubes			
in 3 .001 cc. tubes			
Confirmatory Tests for Coli-Aerogenes Group			
CHEMICAL ANALYSIS Results in parts per million.			
Color			
Odor			
Turbidity			
5 day B. O. D.			
Nitrogen as Nitrites			
Nitrogen as Nitrates			
Solids, total			
Special			
Special			
MINERAL ANALYSIS			
HCO ₃ (Bicarbonate)	34	40	
CO ₃ (Carbonate)			
OH (Hydroxide)			
Cl (Chlorides)		83	
Fe (Iron)			
Special			

* Gas in the fermentation tubes and confirmatory test indicate the presence of bacterial organisms of the Coli-Aerogenes group. These organisms inhabit the intestinal tract of warm-blooded animals, hence their presence in water shows sewage contamination or pollution from surface drainage. Plus sign, gas present. Minus sign, gas absent.

One part per million is equivalent to 1 pound of substance per million pounds of water. One gallon weighs 8.33 pounds. 17.1 parts per million=1 grain per gallon.

STATE OF KANSAS

STATE BOARD OF HEALTH

Oil Field Waste Disposal Section
Ogden S. Jones, Geologist

Industrial Hygiene Section
Edwin C. Hyatt, Hygienist

Water and Sewage Laboratory
Cassandra Ritter, Bacteriologist
Elza Holmes

F. P. HELM, M.D., Topeka
Secretary and Executive Officer

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Marvin Hall, University of Kansas

Earnest Boyce, Engineer and Director
Nelle Schneider, Asst. Director

Sanitary Engineering Section

Paul D. Haney, Chemical Engineer
Ben L. Williamson, Asst. Engineer
Lewis A. Young, Asst. Engineer
Wendell C. Wyatt, Asst. Engineer
Clifford Sharp, Asst. Engineer
Wm. Davis, Asst. Engineer

LAWRENCE, KANSAS

April 20, 1942

Mr. F. C. Allen
Robinson Gymnasium
Campus

Dear Sir:

We are reporting herewith the bacteriological analyses of the samples of water from the swimming pool.

Both of these samples are in excellent condition from a bacteriological standpoint.

Very truly yours,

DIVISION OF SANITATION

Lewis A. Young
Lewis A. Young
Acting Chief Engineer

ME

* Gas in the fermentation tubes and confirmatory test indicate the presence of bacterial organisms of the Coli-Aerogenes group. These organisms inhabit the intestinal tract of warm-blooded animals, hence their presence in water shows sewage contamination or pollution from surface drainage. Plus sign, gas present. Minus sign, gas absent.
One part per million is equivalent to 1 pound of substance per million pounds of water. One gallon weighs 8.33 pounds. 17.1 parts per million = 1 grain per gallon.

REPORT OF WATER ANALYSIS—CITY OF Lawrence

Laboratory No.	421606		
Source	East End	West End	
Collected by	Kissell		
Date of collection	4-16-42		
Date received	4-16-42		
Analysis completed	4-18-42		
BACTERIAL EXAMINATION *			
Bacteria per cc. on Agar, at 37°—24 hrs.	8	5	
Presumptive Tests for Coli-Aerogenes Group Results of Fermentation Tests:	-	-	
in 5 10 cc. tubes	5-	5-	
in 3 1 cc. tubes	3-	3-	
in 3 .1 cc. tubes	3-	3-	
in 3 .01 cc. tubes			
in 3 .001 cc. tubes			
Confirmatory Tests for Coli-Aerogenes Group			
CHEMICAL ANALYSIS Results in parts per million.			
Color			
Odor			
Turbidity	under 1	under 1	
5 day B. O. D.			
Nitrogen as Nitrites			
Nitrogen as Nitrates			
Solids, total			
Special			
Special			
MINERAL ANALYSIS			
HCO ₃ (Bicarbonate)	38	34	
CO ₃ (Carbonate)			
OH (Hydroxide)		87	
Cl (Chlorides)			
Fe (Iron)			
Special			
.....			
.....			
.....			
.....			

* Gas in the fermentation tubes and confirmatory test indicate the presence of bacterial organisms of the Coli-Aerogenes group. These organisms inhabit the intestinal tract of warm-blooded animals, hence their presence in water shows sewage contamination or pollution from surface drainage. Plus sign, gas present. Minus sign, gas absent.

One part per million is equivalent to 1 pound of substance per million pounds of water. One gallon weighs 8.33 pounds. 17.1 parts per million=1 grain per gallon.

STATE BOARD OF HEALTH

Oil Field Waste Disposal Section
Ogden S. Jones, Geologist

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Edwin C. Hyatt, Hygienist

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Marvin Hall, University of Kansas

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Ben L. Williamson, Asst. Engineer
Lewis A. Young, Asst. Engineer
Wendell C. Wyatt, Asst. Engineer
Clifford Sharp, Asst. Engineer
Wm. Davis, Asst. Engineer

LAWRENCE, KANSAS

May 1, 1942

Prof. F. C. Allen
Physical Education Dept.
Robinson Gymnasium
Campus

Dear Prof. Allen:

We are reporting herewith the results of the bacteriological analyses of the samples of water from the swimming pool.

Both of the samples are in good condition from a bacteriological standpoint.

Very truly yours,

DIVISION OF SANITATION

Lewis A. Young
Acting Chief Engineer

ME

BACTERIAL EXAMINATION
Agar, at 37°-24 hrs. Bacteria per cc. on
Presumptive Tests for Coli-Aerogenes Group
Results of Fermentation Tests:
in 5 10 cc. tubes
in 3 1 cc. tubes
in 3 1 cc. tubes
in 3 .01 cc. tubes
in 3 .001 cc. tubes
Confirmatory Tests for Coli-Aerogenes Group

CHEMICAL ANALYSIS
Results in parts per million.

Color
Odor
Turbidity
5 day B.O.D.
Nitrogen as Nitrites
Nitrogen as Nitrates
Solids total
Special
Special

MINERAL ANALYSIS
HCO₃ (Bicarbonate)
CO₃ (Carbonate)
OH (Hydroxide)
Cl (Chloride)
Fe (Iron)
Special

* Gas in the fermentation tubes and confirmatory test indicate the presence of bacterial organisms of the Coli-Aerogenes group. These organisms inhabit the intestinal tract of warm-blooded animals, hence their presence in water shows sewage contamination or pollution from surface drainage. Plus sign, gas present. Minus sign, gas absent.
One part per million is equivalent to 1 pound of substance per million pounds of water. One gallon weighs 8.33 pounds. 17.1 parts per million=1 grain per gallon.

REPORT OF WATER ANALYSIS—CITY OF Lawrence

Laboratory No.	421811			
Source	E. end of pool	W. end of pool		
Collected by	Kissell			
Date of collection	4-28-42			
Date received	4-28-42			
Analysis completed	4-30-42			
BACTERIAL EXAMINATION *				
Bacteria per cc. on Agar, at 37°—24 hrs.	500	380		
Presumptive Tests for Coli-Aerogenes Group	-	-		
Results of Fermentation Tests:				
in 5 10 cc. tubes	5-	5-		
in 3 1 cc. tubes	3-	3-		
in 3 .1 cc. tubes				
in 3 .01 cc. tubes				
in 3 .001 cc. tubes				
Confirmatory Tests for Coli-Aerogenes Group				
CHEMICAL ANALYSIS Results in parts per million.				
Color				
Odor				
Turbidity	under 1	under 1		
5 day B. O. D.				
Nitrogen as Nitrites				
Nitrogen as Nitrates				
Solids, total				
Special				
Special				
MINERAL ANALYSIS				
HCO ₃ (Bicarbonate)	40	32		
CO ₃ (Carbonate)				
OH (Hydroxide)				
Cl (Chlorides)		94		
Fe (Iron)				
Special				

* Gas in the fermentation tubes and confirmatory test indicate the presence of bacterial organisms of the Coli-Aerogenes group. These organisms inhabit the intestinal tract of warm-blooded animals, hence their presence in water shows sewage contamination or pollution from surface drainage. Plus sign, gas present. Minus sign, gas absent.

One part per million is equivalent to 1 pound of substance per million pounds of water. One gallon weighs 8.33 pounds. 17.1 parts per million=1 grain per gallon.

April 7, 1942.

Mr. Lewis A. Young,
Acting Chief Engineer,
Division of Sanitation,
University of Kansas.

Dear Mr. Young:

Thank you very much for the report on the bacteriological analyses of the samples of water from the swimming pool in Robinson Gymnasium which you submitted to Mr. Shenk. We are glad to know that the water is in good condition from a bacteriological standpoint. We desire to cooperate in every way possible in safeguarding the health of the University students.

Sincerely yours,

FCA:AH

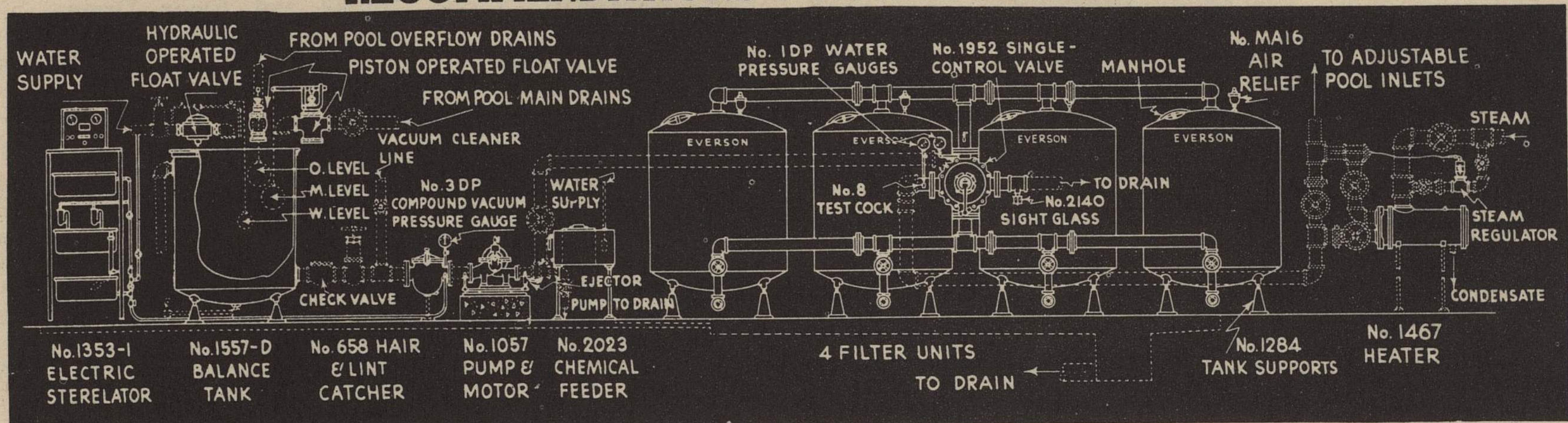
Director of Physical Education and Recreation,
Varsity Basketball and Baseball Coach.

EVERSON FILTER SERVICE COMPANY

"The Swimming Pool People"

214 West Huron Street, CHICAGO, ILL., U. S. A.

RECOMMENDATIONS FOR POOL DESIGN



Typical Layout of Everson Filtering and Sterilizing System for Indoor Pool

PRODUCTS—Complete Swimming Pool Equipment.

Sterilizing, Filtering and Re-Circulating.

Everson apparatus for these services (whether complete systems, units, or parts) are designed to meet every Federal, State or Municipal Health regulation requirement.

Functional Units—Everson design is a standard for inlet and outlet fittings, built-in or portable cleaning apparatus, underwater lighting, and observation windows.

Accessories—A full line of appointments: Foot Baths, Ladders, Diving Boards, Stands and Fixtures.

EXPERIENCE—Over 30 years of specialization in manufacturing and developing Swimming Pool Equipment. Standard Pool Installation practice today represents many exclusive features innovated by Everson. Hundreds of complete Everson installations attest to architectural and engineering acceptance.

SERVICE—The EVERSON FILTER SERVICE COMPANY will furnish architects and engineers, with detail drawings, bulletins and technical aid upon request.

ESSENTIAL FACTORS IN POOL DESIGN

A table of requirements contingent with modern architectural and engineering practice conforming to various regulated health standards

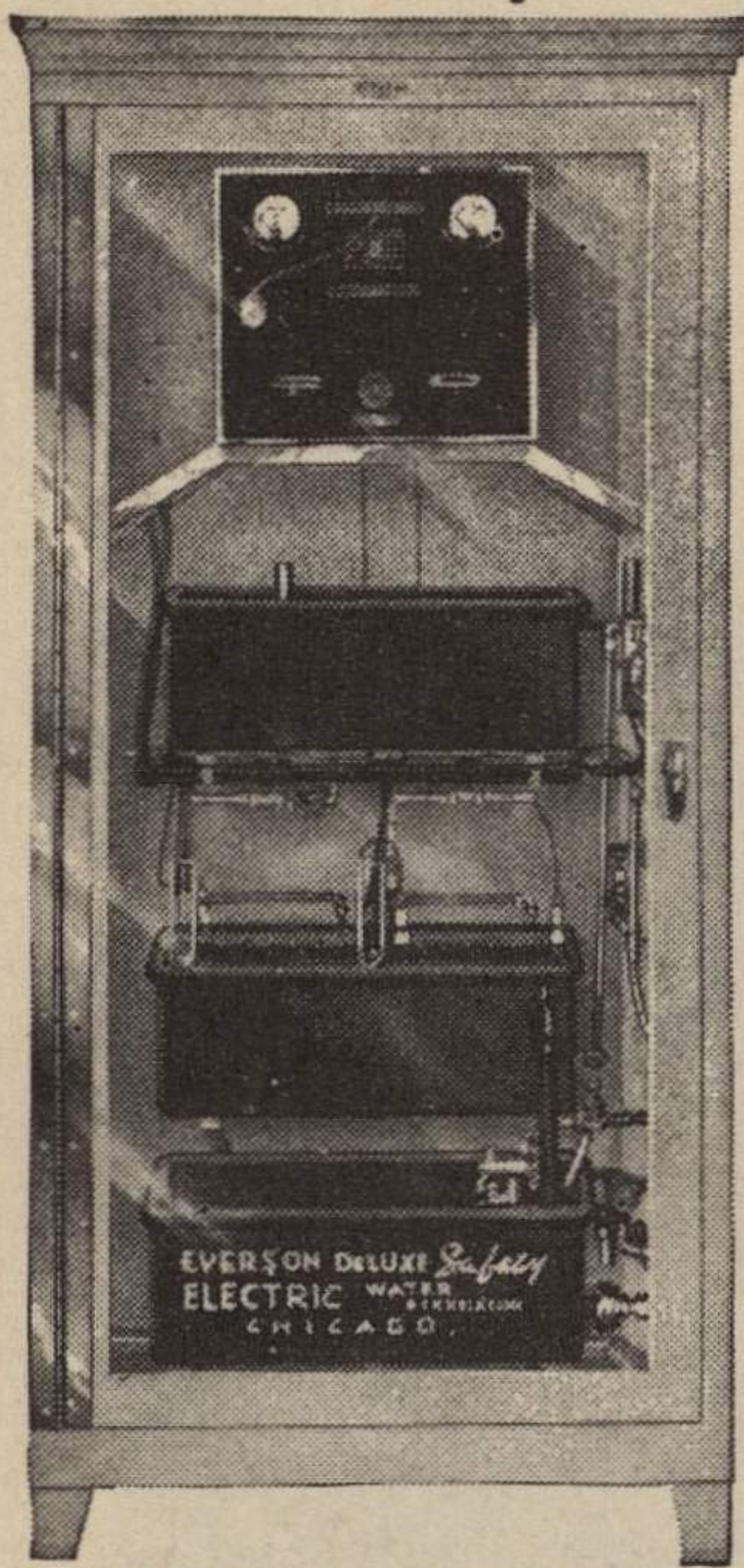
SHAPES	Rectangular shapes are best for indoor pools. For outdoor pools, rectangular, circular, U, or T shapes, or other variations depend on local conditions. There is a tendency in public pools to have one pool for wading, another for depths not to exceed 4 to 5 ft., and still another entirely of deep water for swimming and diving. Combination pools, where one end is deep and the other end shallow, are very acceptable.	PIPING SYSTEM	Provide for the following: Filling of pool; re-circulation of pool water; washing of individual filters; filter re-wash to waste; operation of suction cleaners with water discharge to sewer; draining of the pool, overflow of drainage; regulation of flow through pool inlets. (See Everson Adjustable Flow Inlet Fitting No. 890.)
DIMENSIONS	Swimming Pools built for competition should conform to Olympic requirements. The width should always be in multiples of 5 ft. The length should be a minimum of 60 ft. (General practice requires 15-ft. multiples for length.)	FILTRATION	The filtering equipment should be of sufficient capacity to provide a turnover of the pool capacity once every 4 to 6 hours, based on a filtration rate of 3 g.p.m. per sq. ft. of filter area for pressure filters and 2 g.p.m. for gravity filters. Four or more filter units are recommended as the back wash rate of filters should be equal to 12 to 15 g.p.m. per sq. ft. of filter area. By this arrangement the re-circulating pump can be used to provide water to wash one filter at a time.
WATER SUPPLY	A water supply direct connection to swimming pools is prohibited. Install Everson's balance tank (No. 1515). Install overflow drain (No. 893 or No. 900) around entire pool on 10-ft. centers. Install inlet fittings (No. 890 or No. 891) on 20-ft. centers. Install one or more main drain fittings (No. 894) at lowest point in pool, not over 10 ft. from sidewalls. We recommend a trench covered with a trench grating (No. 904). Send for Typical Pool Installation Drawing No. 792.	STERILIZATION	Chlorine in one form or another is recommended for the most effective results and simplicity in making water tests. For Indoor Pools, the EVERSON SAFETY ELECTRIC STERELATOR eliminates the necessity of separate vaults, fans, or vents as vaults are usually required when pressure chlorine gas STERELATORS are used.
DEPTHS	At shallow end, depth should be a minimum of 3 ft. 6 in. The deep end, measuring 15 ft. from the end wall, must have a 10 to 12-ft. depth to accommodate diving from 3 meter or 10 ft. high board.	RECIRCULATING PUMPS	Re-circulating pump should always be located below the water level in the pool.
BATHING LOAD	Twelve persons are the maximum number permitted in the water area within 10-ft. radius of each diving board. The average space requirement for an adult swimmer is 36 sq. ft.; and, allowing for one-third of swimmers on shore, an average of 27 sq. ft. should be provided for each swimmer who may be present at time of maximum load. In indoor and small outdoor pools, the space requirement for those not swimming should be included with the swimming area and computed as such. At large outdoor pools, the average allowance per bather for those not swimming should be 10 sq. ft.	UNDERWATER LIGHTS	Underwater Lights should be spaced on 10-ft. centers starting in over 7 ft. from either end, using 500-watt lights.
		SUCTION CLEANER	For Indoor Pools, the cleaner should be operated by connection to the re-circulating pump. For outdoor pools, it is recommended that a portable, self-priming pump be furnished for exclusive use of the suction pool cleaner.
WADING POOLS	Wading area shall be separate from swimming pool. Water supply to come from filtration system, but not re-circulated. Wading Pool shall be entirely emptied and cleaned daily.	DIVING BOARDS	Provide regulation one-meter and three-meter stands or diving boards.
		LADDERS	In Indoor Pools, provide 4 ladders. Locate 2 on each sidewall, 5 ft. from the end wall. On Outdoor Pools, install ladders about 60 ft. apart. Removable type ladders are preferable.

SELECTION TABLE FOR RE-CIRCULATING EQUIPMENT

Pool capacity, gal.	Filters	STERELATOR	Hair catcher	Pump capacity, g.p.m.	Space requirements, height
50,000*	4- 48-in. diameter V	E-6	4 in.	150	25 x 15 ft. x 8 ft. 6 in.
75,000*	3- 60-in. diameter V	E-6	4 in.	235	30 x 15 ft. x 8 ft. 6 in.
100,000	4- 72-in. diameter V	1915-1	6 in.	340	35 x 15 ft. x 8 ft. 6 in.
150,000	4- 84-in. diameter V	1915-1	8 in.	460	40 x 15 ft. x 8 ft. 6 in.
200,000	4- 90-in. diameter V	1915-1	8 in.	530	40 x 15 ft. x 8 ft. 6 in.
300,000	4-114-in. diameter V	1915-1	10 in.	810	45 x 17 ft. x 10 ft.
400,000	4-8 x 14 ft. H	1915-1	10 in.	1025	45 x 20 ft. x 10 ft.
500,000	4-8 x 16 ft. H	1915-1	12 in.	1400	50 x 20 ft. x 10 ft.

Note: The above equipment is based on a 6-hr. turnover, thereby meeting the most recent and exacting State Health Department regulations. For other sizes of equipment, which would provide for an 8, 10, or 12-hr. turnover, specifications and detailed information gladly furnished on request.

Everson Safety-Electric Sterelators



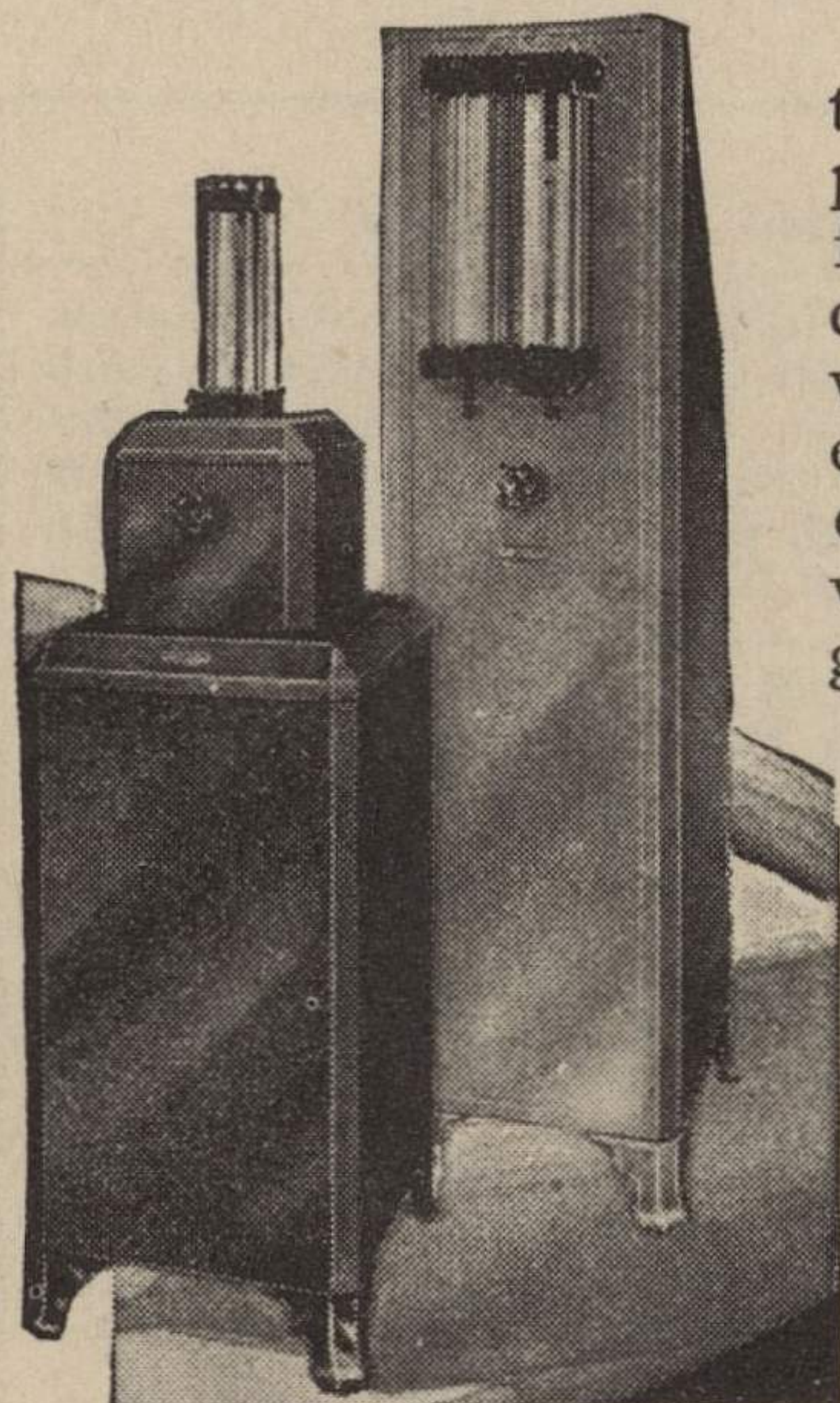
Sterplators
by Everson

This De Luxe Cabinet Type EVERSON SAFETY ELECTRIC STERELATOR is a high development in swimming pool sterilizing equipment. By means of an electrolytic cell, it manufactures "Chlorine" in its perfect form—sodium hypochlorite (NaOCl), from ordinary rock salt and water. It eliminates the need for special vents, vaults, gas masks and the hazardous handling of high pressure chlorine gas drums and other expensive precautionary equipment as is usually required with pressure type gas STERELATORS. Sodium hypochlorite is an exceedingly effective, non-irritating and stable germicide which pervades every corner of the pool. Output is set at any point by turning a (rheostat control) dial. Operating cost for average Indoor, or small Outdoor Pool is only a few cents per day. Installation is simple and cabinet requires only 20 x 40 in. of space. It can be located at any convenient place (preferably above level of pool, between filters and inlets, or near water re-circulating pump). Operates on 110 volts, 15 amperes, and 3/4-in. city water supply connection.

Everson Filters

For the clarification of water, Everson filter units, singly or in batteries, with complete operative and control fittings, are designed to more than fulfill the requirements of health codes and to give consistent performance during life of installation.

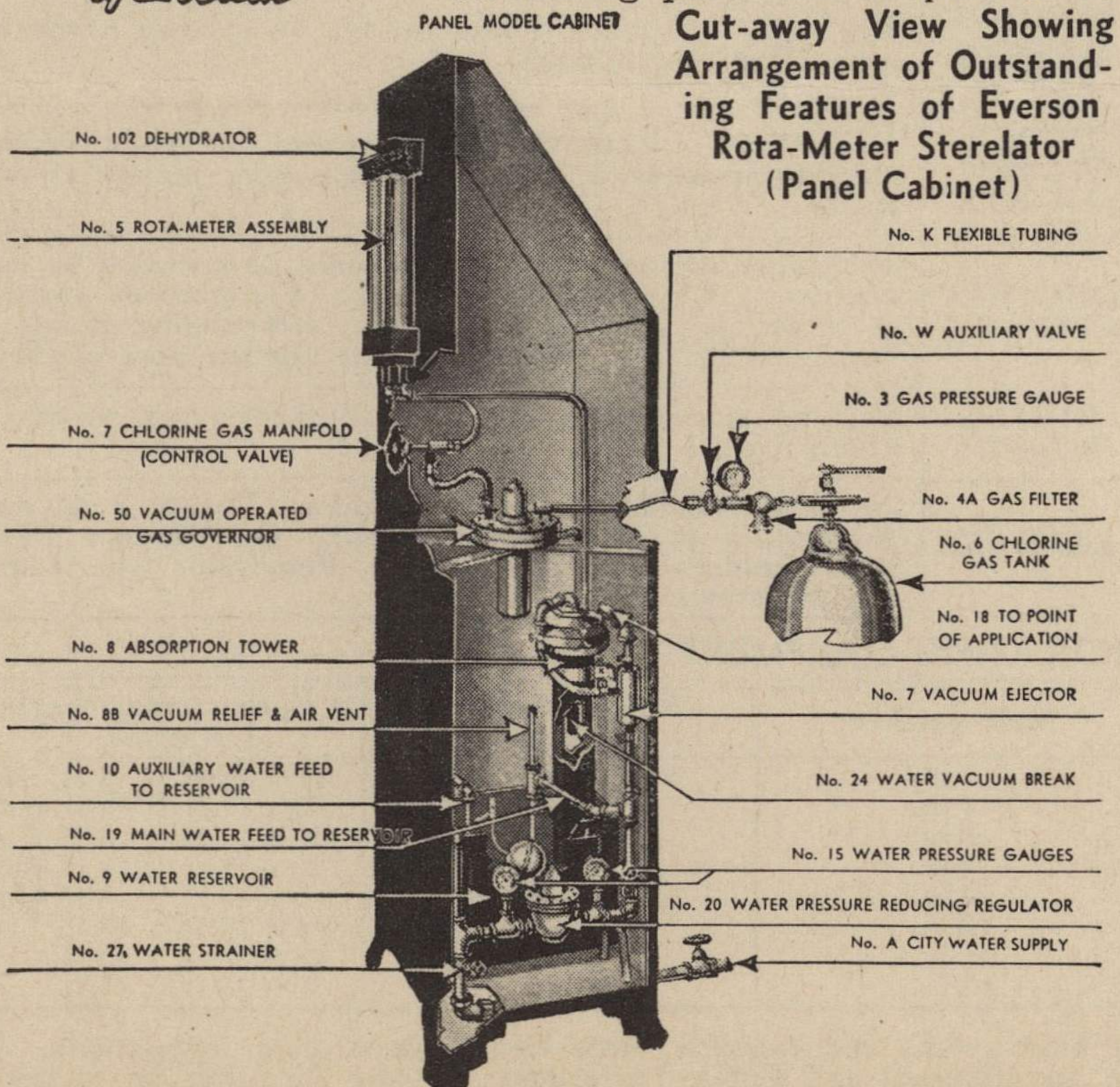
Everson Rota-Meter Sterelators



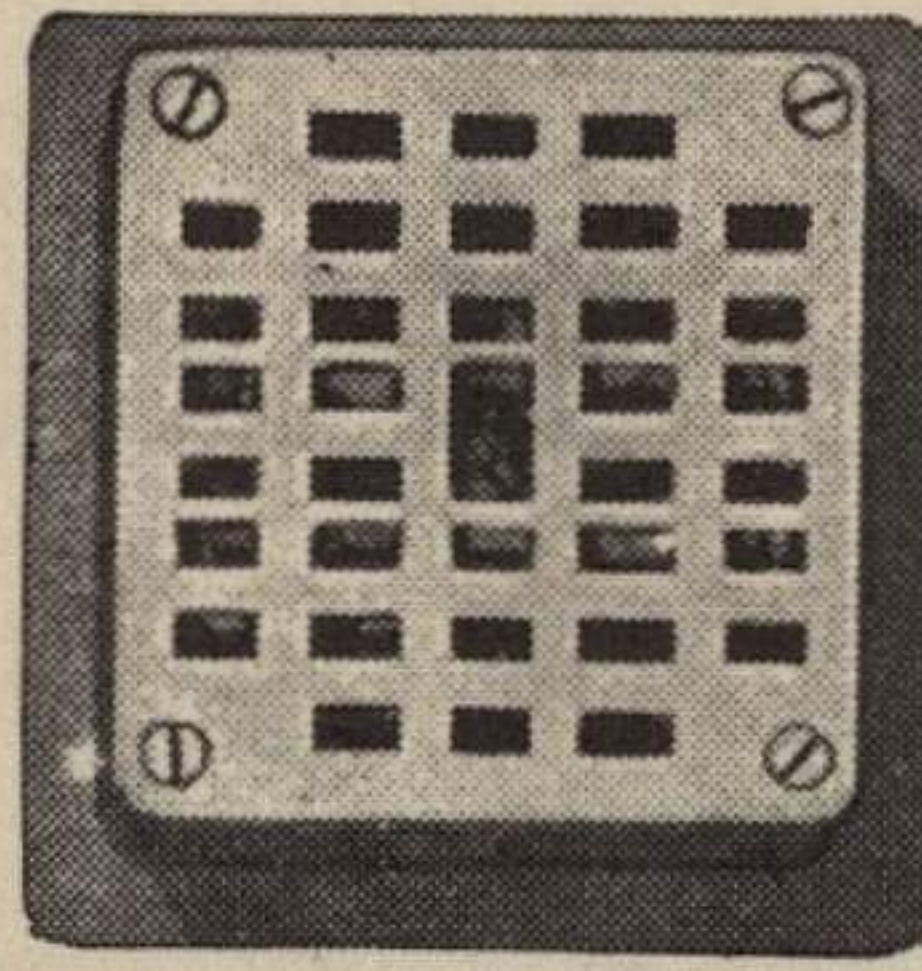
Sterplators
by Everson

Everson Rota-Meter Chlorine Control Apparatus embodies the most improved and practical features available for dispensation of chlorine gas and chemical reagents for swimming pool water purification. This STERELATOR, in either model shown, embodies an accurate, foolproof, visible, metering device, rendering readings within 1% and giving Everson the highest degree of accuracy in the chlorinating field. Thorough and accurate mixing facilities, automatic venting, automatic syphon break which prevents back flooding, and simplicity of operation are other outstanding features. Automatic gas and water shut-off may be had on specification.

EVERSON STERELATORS are made in several different models, each intended to accomplish a special purpose. All Everson equipment is designed for the swimming pool—not adapted to it.

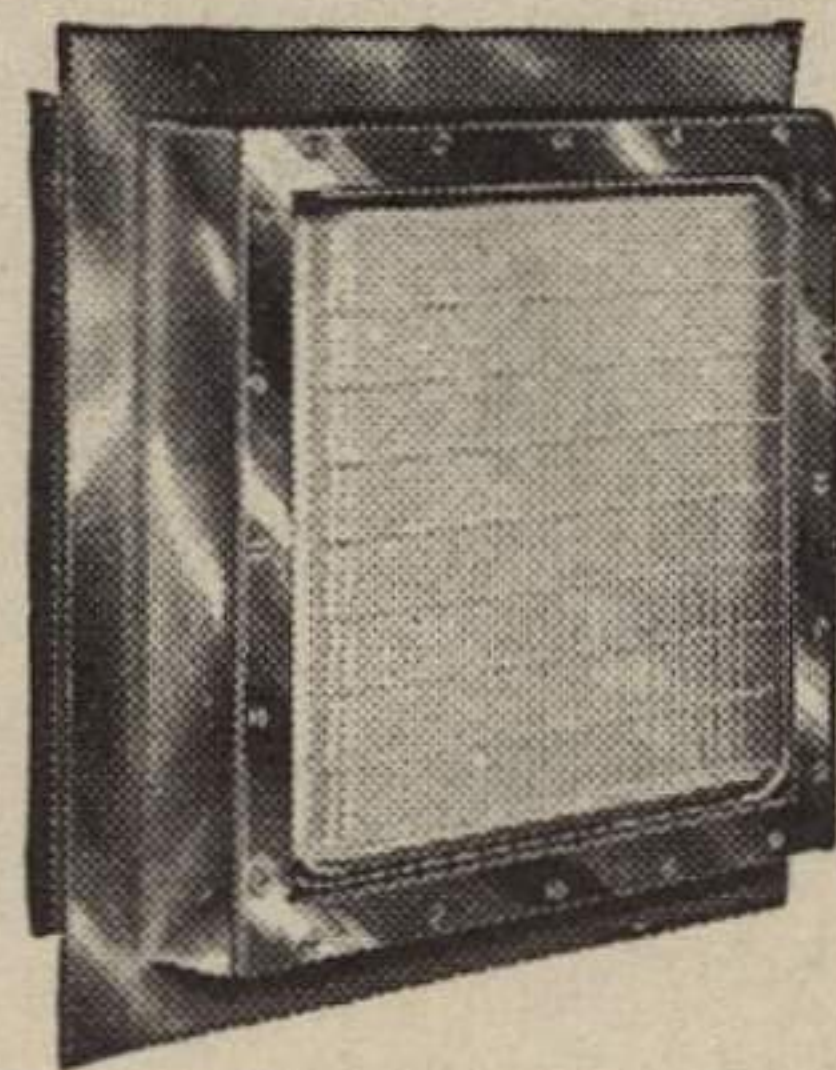


Pool Fittings



The adjustable flow inlet, permitting easy balancing of the re-circulating water, and simplifying piping and piping costs, is typical of Everson's specialization in swimming pool fittings. This adjustable flow inlet can be installed in either old or new pools. Everson Angle Overflow Drains, Trench Grates, Gutter and Floor Drains, Main Drains and Vacuum Cleaner Connections and fittings are equal in merit in their individual performance.

Underwater Lighting



Everson Underwater Lights, the result of much engineering research and experimentation, are made in four different styles to meet all pool requirements and are equipped with brass or brass chrome plated frames and special heat-resisting lenses. The enhanced beauty of a pool lighted by Everson and the definite safety factor then obtained, prove that Everson lights are designed specifically for underwater lighting purposes and not merely adapted to pool illumination.

Observation Windows

A modern requirement for swimming pools where aquatic instruction is a vital part of pool operation. Everson observation windows placed in the pool wall below the water level greatly simplify the problem of instructing swimmers.

Pool Cleaning Equipment

The standard Everson suction pool cleaner for indoor pools is designed to operate direct from the re-circulating pump. For outdoor pools the Everson portable, self-priming, suction pump becomes an economical and necessary part of the pool cleaning system.

These cleaners operate similar to the ordinary domestic vacuum cleaner except instead of air, water is used as suction principle.

Pool Accessories

The appointments of any pool should be up-to-date, equal to the attendance demands, and have an economical functional utility based on quality products. Everson offers selective equipment exactly suited to any pool large or small, indoor or outdoor. These fixtures include:

- | | | |
|---------------|-----------|-----------------|
| Ladders | Slides | Buoys |
| Stands | Footbaths | Nets and |
| Diving Boards | Matting | Testing Outfits |

Everson Recent Installations

The following recent list of a few Everson swimming pool installations is representative of this company's work in cooperation with the architectural profession:

Municipal Pools

- | | |
|--------------------|-----------------|
| Pittsfield, Ill. | Alexandria, La. |
| Mount Gilead, Ohio | Wray, Colo. |
| Uhrichsville, Ohio | La Sueur, Minn. |
| La Crosse, Wis. | Pekin, Ill. |
| Benson, Minn. | Alva, Okla. |

Country Clubs

- | | |
|---|---|
| Broadmoor Country Club, Indianapolis, Ind. | Byrn Mawr Country Club, Chicago, Ill. |
| Terre Haute Country Club, Terre Haute, Ind. | Sunset Ridge Country Club, Chicago, Ill. |
| Medinah Country Club, Medinah, Ill. | Oakland Hills Country Club, Birmingham, Mich. |

Private

- | | |
|-------------------------------------|-----------------------------------|
| Samuel Rubel, Roslyn, N. Y. | D. L. Kroehler, Hinsdale, Ill. |
| A. Hulman, Jr., Terre Haute, Ind. | F. L. Weinberg, Thiensville, Wis. |
| Ham Fisher, Deal, N. J. | E. O. Wagner, Greenwich, Conn. |
| Lester J. Norris, St. Charles, Ill. | E. L. King, Jr., Winona, Minn. |
| H. B. Horton, Chicago, Ill. | Mary R. Babcock, Reynolda, N. C. |

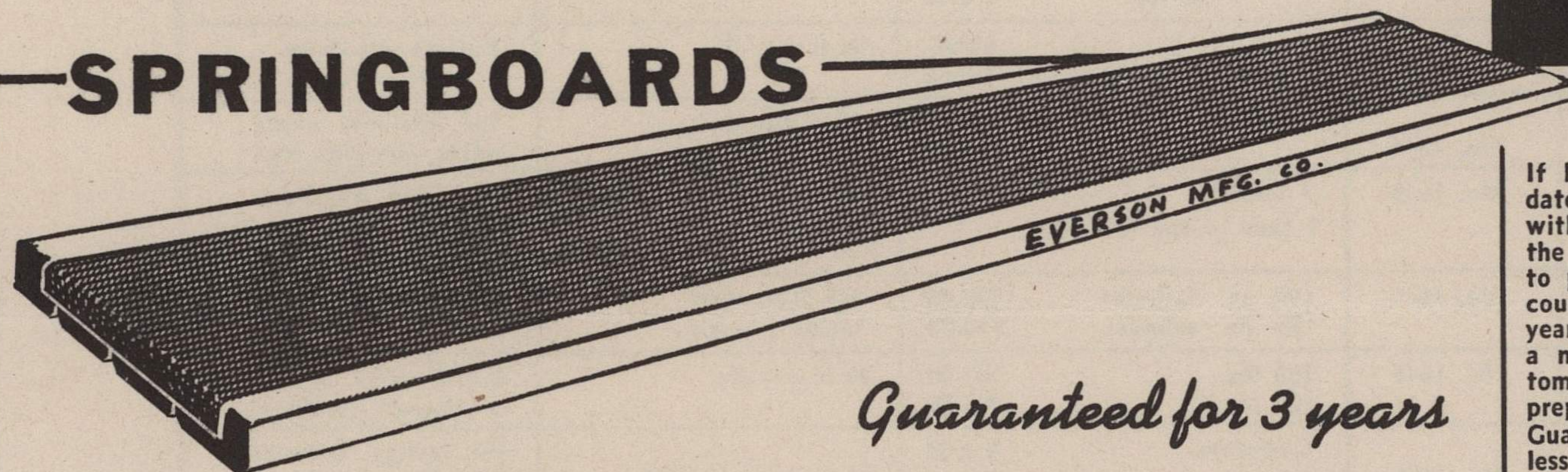
Institutional

- | | |
|--|---|
| Y. W. C. A., Elgin, Ill. | Menasha High School, Menasha, Wis. |
| Sumner High School, Kansas City, Kan. | Onarga Military Institute, Onarga, Ill. |
| Proviso Township High School, Maywood, Ill. | El Paso High School, El Paso, Ill. |
| Wellesley College, Boston, Mass. | Woodstock High School, Woodstock, Ill. |
| Niles Center High School, Niles Center, Ill. | Michigan State Training School, E. Lansing, Mich. |
| Chaney High School, Lockport, Ill. | New Mexico School for Blind, Alamogordo, New Mex. |
| Lazarus Boy Scouts, Columbus, Ohio | Camp Kahler, Rochester, Minn. |
| Albion College, Albion, Mich. | |

EVERERSON

SWIMMING POOL EQUIPMENT AND ACCESSORIES

SPRINGBOARDS



Guaranteed for 3 years

These boards comply in every respect with all N.C.A.A. & A.A.U. requirements. They are made of the best grade of Douglas Fir, are 20" wide and taper from 3½" at rear to 1¾" at tip. Prices quoted include 18" Cocoa Matting. Official Laminated Springboard.

No. 452	12 ft. Board weight approx. 225 lbs.	\$37.00
No. 453	14 ft. Board weight approx. 250 lbs.	41.00
No. 454	16 ft. Board weight approx. 275 lbs.	45.00

GUARANTEE

If board breaks within one year from date of purchase it will be replaced without charge; if board breaks during the second year customer is entitled to purchase a new board at 50% discount; if board breaks during the third year customer is entitled to purchase a new board at 25% discount. Customer to return damaged board by prepaid transportation. Guarantee is void if fulcrum is located less than the minimum regulation distance as follows:

	Fulcrum Distance
	Feet
12 ft. board	4
14 ft. board	6
16 ft. board	7½

"STREAMLINED" SPRINGBOARD LINE

STREAMLINED LOW BOARD No. 401

This unit comes complete with exclusive new improved radius type fulcrum, with tough live rubber cushion. This arrangement positively decreases board breakage.

Galvanized steel supports are arranged for anchoring to any type of walk or for bolting to wooden floats, docks, etc. Twelve foot laminated board is guaranteed against breakage as described.

No. 401 With 12 ft. Board. Wt. approx. 300 lbs. \$50.00

STREAMLINED OFFICIAL ONE METER UNITS No. 425

Stand is made of 2" inside diameter hot galvanized structural steel pipe.

Adjustable fulcrum is new exclusive improved radius type with tough live rubber cushion. This fulcrum will positively decrease board breakage.

Galvanized anchors are of new socket type with brass tightening parts; and are set flush with walk.

No. 425 As illustrated with 14 ft. Board. Wt. approx. 525 lbs. \$75.00

STREAMLINED OFFICIAL ONE METER UNIT No. 426

Stand is made of 2" inside diameter hot galvanized structural steel pipe with six supporting legs.

Adjustable fulcrum is new exclusive improved radius type with tough live rubber cushion. This fulcrum will positively decrease board breakage.

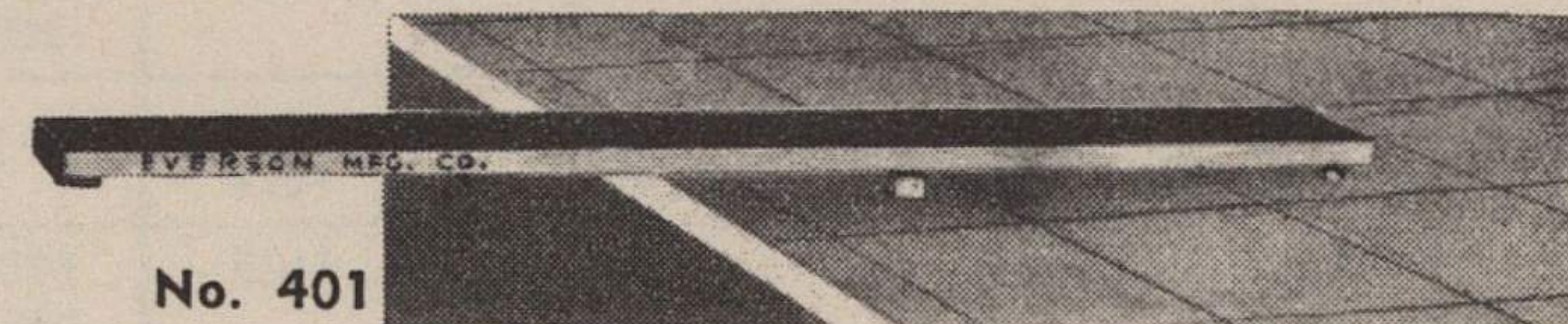
Galvanized anchors are of new socket type with brass tightening parts; and are set flush with walk.

No. 426 As illustrated with 14 ft. Board. 2" I. D. Pipe Stand. Wt. approx. 525 lbs. \$81.00

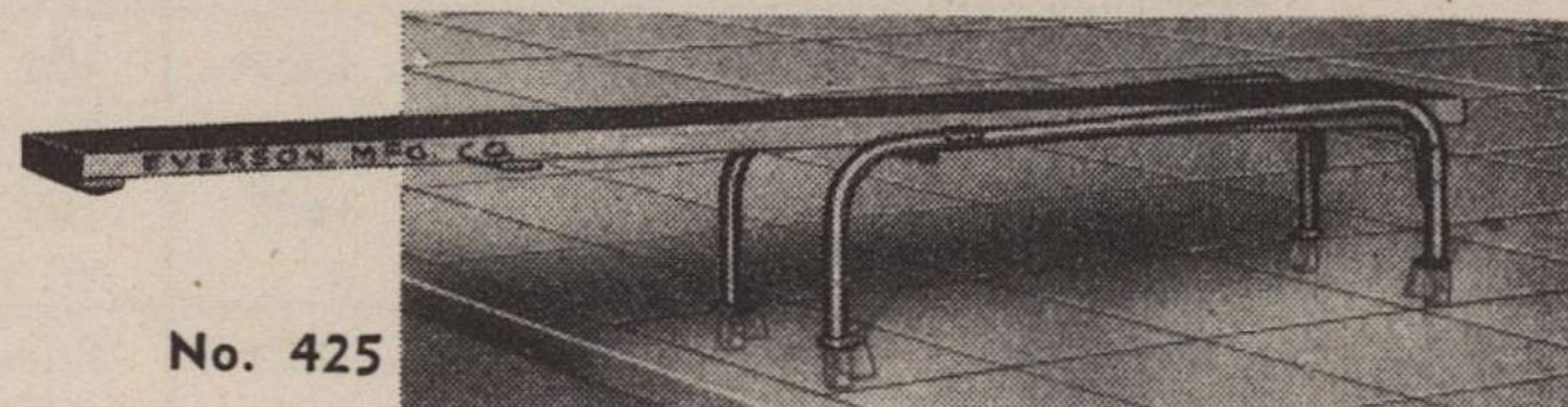
STREAMLINED OFFICIAL 3 METER UNIT No. 435

This substantial outfit is of new rigid design. The main frame and front supports are built of full 2" inside diameter hot galvanized steel pipe. Braces, hand rails, and ladder risers are of 1½" I. D. galvanized pipe. Flat metal safety steps are hot galvanized and are ribbed to prevent slipping. Galvanized anchors are of new socket type with brass tightening parts. Adjustable fulcrum is new exclusive improved radius type with tough live rubber cushion. This fulcrum will positively decrease board breakage. Due to the 2" inside diameter pipe construction, scientific bracing, and spacing, we can guarantee this to be the most rigid three meter stand on the market. Unit comes complete with guaranteed official laminated springboard, 18" cocoa matting runner and meets all requirements of both N. C. A. A. and A. A. U.

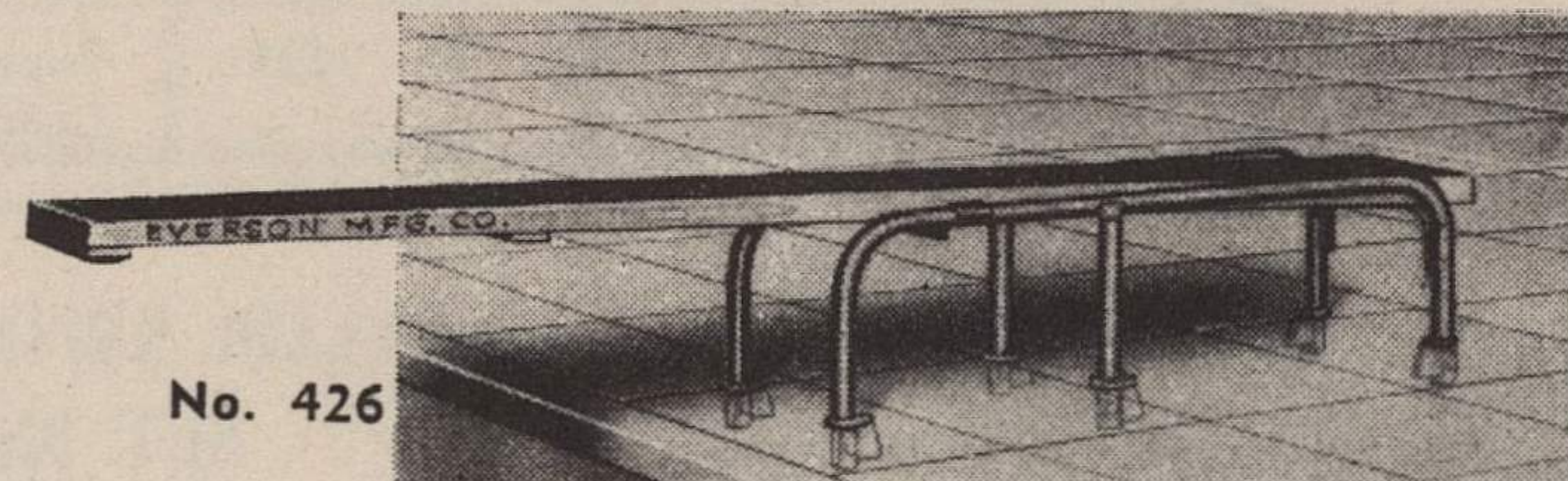
No. 435 As illustrated with 16 ft. Board. Ship. wt. approx. 825 lbs. \$135.00



No. 401



No. 425



No. 426



No. 435

ALL PRICES SUBJECT TO CHANGE—ALL PRICES NET 30 DAYS. F. O. B. CHICAGO

EVERERSON FILTER SERVICE COMPANY

214 W. HURON STREET

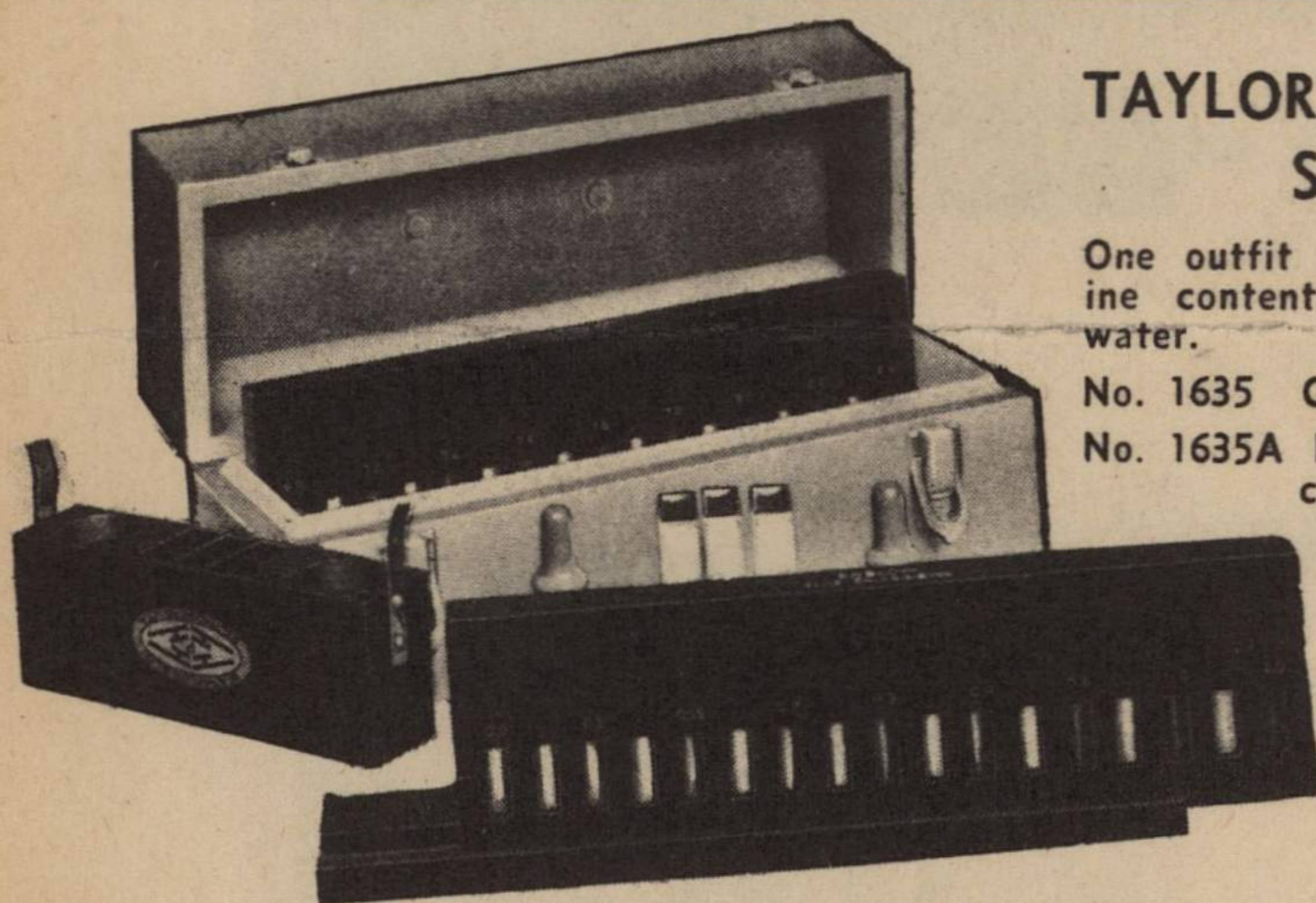
CHICAGO, ILLINOIS

BULLETIN No. 711B—2M—6-43

PRICES INCREASED 10%

CHEMICALS FOR THE SWIMMING POOL

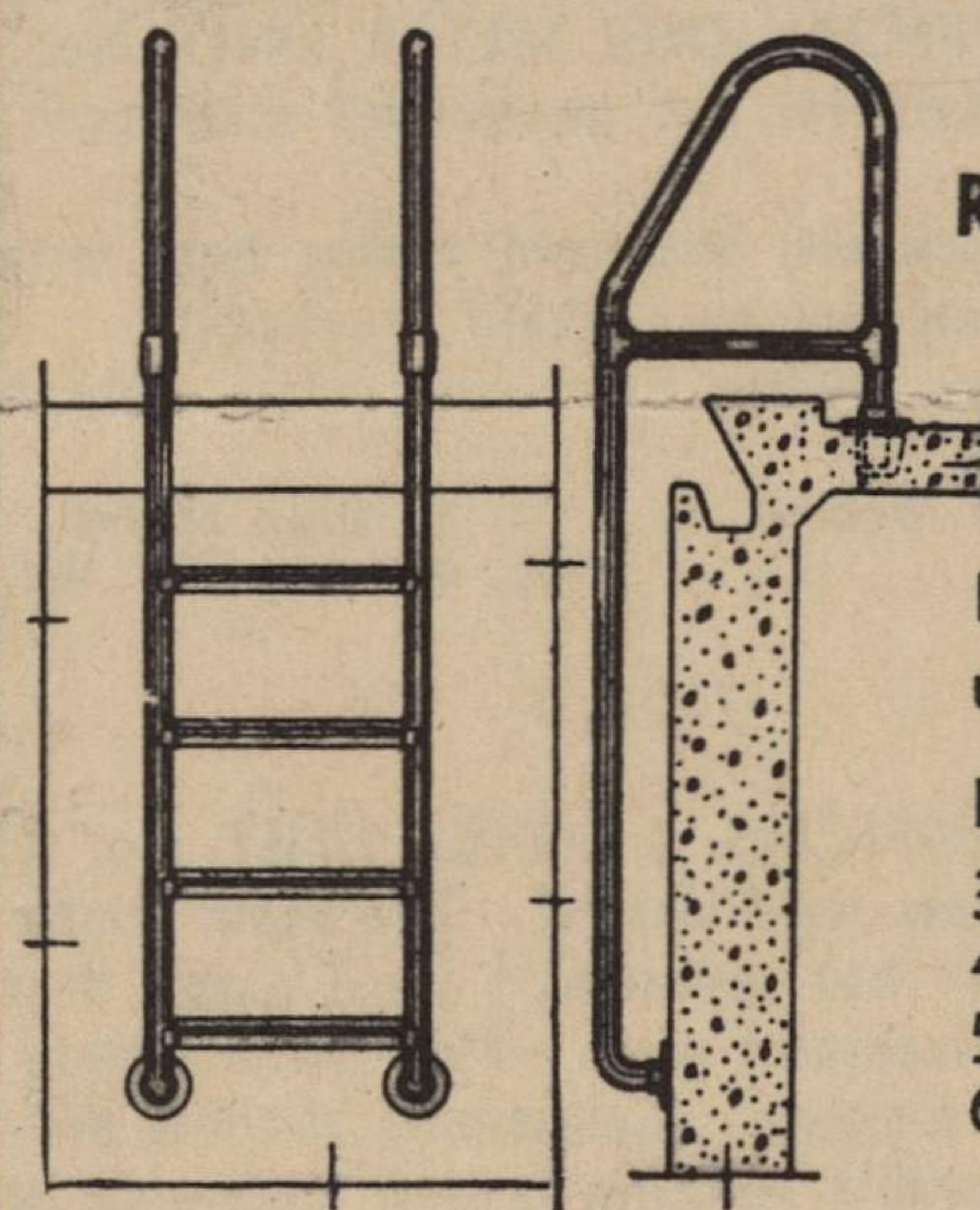
ITEM	CODE	PRICE NET	SMALL QUANTITIES	PURPOSE
FOOT BATH Moulded Rubber	No. 1728	Each 18" Dia. O.D. \$ 9.00		Prevents Athletes Foot
ALUM, LUMP	No. 1611	1 bbl. 375 lbs. \$21.00 100 lbs. \$ 8.40	\$0.10 per lb.	Lump Coagulant For Treatment of Water
BLUE CRYSTALS	No. 1612	1 bbl. 450 lbs. \$43.20 50 lbs. \$ 6.00	\$0.17 per lb.	Rectification of algae
ALKALINE CRYSTALS	No. 1613	1 bbl. 276 lb. \$18.00 50 lbs. \$ 3.00	\$0.10 per lb.	Restore alkalinity of pool water
PHOSPHATE CRYSTALS	No. 1614	1 bbl. 276 lb. \$18.00 50 lbs. \$ 3.00	\$0.10 per lb.	For alkalinity where water contains iron
HTH	No. 1615	1 case \$19.50 9 cans to one (1) case	1 to 3 cans \$3.85 4 to 6 cans \$3.50 7 to 9 cans \$3.00	Sterilizing water for foot bath and other germicidal requirements
CHLORINE GAS	No. 1616	100 lb. cylinder \$12.00 150 lb. cylinder \$18.00	\$20.00 Deposit \$20.00 Deposit	Sterilization of water
PURITE BRICKS	No. 1618	200 lbs. \$11.00 100 lbs. \$ 6.05	\$0.10 per lb.	Rectification of acid or alkaline condition
CHLORINE TESTING SETS	No. 1619	Complete \$ 8.80	Both sets for \$17.00 Color Standards \$1.25 set Each	For testing Chlorine residual in water For testing alkalinity or acidity of water
ALKALINITY TESTING SETS	No. 1620	Complete \$ 8.80		
OTO SOLUTIONS	No. 1621	32 oz. glass bottles \$ 4.50 16 oz. glass bottle \$ 2.50	8 oz. \$1.50 in glass bottle	Chemical liquid used in Chlorine Test Set
PH SOLUTIONS	No. 1622	16 oz. in glass bottle \$ 5.00	8 oz. \$2.50 in glass bottle	Chemical liquid used in Alkalinity Set
SALT	No. 1623	100 lb. bag \$ 1.65 300 lbs. in bags \$ 4.40	1 ton \$27.50 1 bbl. 280 lbs. \$ 7.00	For EVERSON'S Safety Electric Chlorine Feeder
ACTIVATED CARBON CLIFFCHAR	No. 1624	25 lb. carton \$ 5.50	\$0.24 per lb.	Absorption of odor
PH PLUS	No. 1625	200 lbs. \$11.00 100 lbs. \$ 6.05	\$0.09 per lb.	Rectification of acid or alkaline condition
BIRM	No. 1626	100 lbs. or more, prices on application	\$0.30 per lb.	Iron remover
ZEOLITE	No. 1627	100 lbs. or more, prices on application	\$0.35 per lb.	Water softener
QUARTZ	No. 1628	Prices on application	Please state size of filters	Filter material
SAND	No. 1629	Prices on application	Please state size of filters	Filter material



TAYLOR SWIMMING POOL SET No. 1635

One outfit for determining both chlorine content & pH of swimming pool water.

No. 1635 Complete \$18.50
No. 1635A In a wooden carrying case \$23.50



PRICES INCREASED 10% REMOVABLE VERTICAL POOL LADDERS

Built for safety, durability, beauty and utility. Prices listed are galvanized Ladders.

No. 478 Galv. Ladders 1 1/2" pipe Diam.
3 ft.—3 steps..... \$22.00
4 ft.—4 steps..... 25.00
5 ft.—5 steps..... 28.00
6 ft.—6 steps..... 31.00

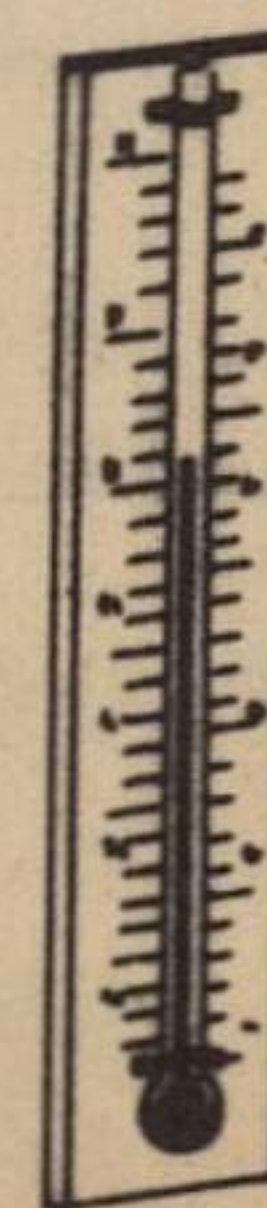


SPECIAL WOVEN COCOA MATTING

For slippery steps, runways, ramps and walks around swimming pools. Prevents accidents. Dries quickly. Comes in two widths.

No. 578 18" wide..... 30c ft.
No. 579 36" wide..... 55c ft.
Binding for ends..... 25c ft.

Attaching per end add \$1.00 each.



WATER THERMOMETERS

To ascertain at any time temperature of swimming pool water.

No. 1638 With wood back (floats) \$3.50
No. 1639 With metal back (sinks) \$5.50



GAS MASK (CHLORINE) No. 1637

Necessary protection for operator where chlorine gas cylinders are used.

No. 1637 Complete with cannister \$25.00