Matthew G Bevin
Governor

ENERGY AND ENVIRONMENT CABINET

Department for Environmental Protection
Division of Water
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Charles G. Snavely
Secretary

R. Bruce Scott
Commissioner

March 23, 2016

Morehead State University
John Mahaney
PO Box 831
Morehead, KY 40351

Dear Mr. Mahaney:

Recently the Division of Water of Kentucky took on the project of going through all of our drinking water facility files to pull and scan important documents. Documents over 100 years old were found for some systems including old inspections, descriptions of water systems, pictures and interesting correspondence. We felt that these documents should be returned to the water systems to preserve as they see fit.

If you have any questions regarding this matter, please contact me at 502/564-3410, ext. 4981.

Sincerely,

Todd Ritter
Compliance Officer

OHIO RIVER POLLUTION SURVEY - U.S.P.H.S. - CINCINNATI, OHIO

WATER PURIFICATION EQUIPMENT

State Kentucky Main Watershed Licking River

County Rowan Sub-watershed Triplett Creek

City Morehead Pop.(1930) 825 (1938) 900-College 2000

Type Community Urban Informant Mr.P.P.Thornton, Water Plant.Engr.

Ownership Morehead State Teachers College Yr.Installed 1935-1936

Rated Cap.(M.G.D.) .360 Avg. Operating Cap.(M.G.D.) .150

Main feat.treat.(Ex: Coagulated, settled, filtered, chlorinated, etc.) Aerated,coagulated,settled,filtered.

Disposal Filter Plant Sludge Discharged into Triplett Creek below dam.

Section A - Give description water purification plant. Recent improvements. Conditions at visit.

Section B - Preliminary treatment of water. Trace course of water from river to filters, showing type and arrangement of settling basins. Detention time. Chemical treatment and amounts used. If sketch used give dimension units, indicate direction flow.

Section C - Describe filtration equipment. Rated capacity. Present rate of operating plant. If softening is done, indicate equipment and results obtained.

Section D - Disinfection methods; points application. Control. Amounts of chemical used.

Section E - Operation of water purification plant. Laboratory equipment. Tests. Unique features. State supervision. Suitability of laboratory for collaboration work on stream pollution.

Note: Place data requested above, under sections A and B to E, on sheets as explained on W-1.

Survey by Archie B.Freeman Date 3-22-39

Section A

The new water purification plant was constructed in conjunction with the college power plant. It is of the modern rapid sand filtration type and is located about 200 ft. from the bank of Triplett Creek in the upper edge of town.

The raw water pumping station, which furnished water to the plant, is located on the bank of Triplett Creek, opposite the water treatment plant. The pumping station is equipped with two low lift centrifugal pumps, each with a capacity of 250 gallons per minute. The water purification plant consists of the following parts: mixing chamber, coagulation and settling basin, filters and clear well.

No additions have been made since the plant was constructed. The plant was in good condition and seemed to be working very satisfactorily at the time visited.

Section B

Water from the creek flows into the pumping station by gravity through an 8 inch screened intake and is pumped into an aero-mix located at the entrance to the mixing chamber. From the aero-mix, the water flows by gravity up through and over an umbrella type aerator located in the mixing chamber. Alum is added to the water as it leaves the aero-mix, and lime is applied to the water at the top of the aerator. Activated carbon is added in the mixing chamber. All chemicals are fed by W. & T. dry feed machines but no record is made of the dosage or amount of chemicals used.

From the mixing chamber the water passes to the settling basin through a submerged opening connecting the settling and mixing basins. The coagulation or settling basin is of the circular or return flow type, having capacity of 88,000 gallons. The detention time under normal operating conditions is about four hours. Water passes from the settling basin to the filter by means of a collecting weir located at the lower end of the settling basin.

Section C

The filters are in two separate units, size 7' x 9', having a total area of 126 sq. ft. The filters have a rated capacity of 363,000 gallons per day and are operated at the present time at the rate of 150,000 gal. per day.

Section C - (Conti)

The filters are equipped with loss of head gauges and rate controllers. The loss of head gauges were not operating satisfactorily at the time of visit. The water is softened only for boiler use at the power plant. A Zeolite softener is employed to treat the water, which has a hardness of about 4 grains per gallon.

Section D

Filtered water is chlorinated by means of a W. & T. chlorinator as it enters the clear well at a rate of about 0.5 to 0.6 p.p.m. A residual of 0.2 p.p.m. is maintained in the finished water. Ortho-tolidine testing set is used to control the chlorine dosage.

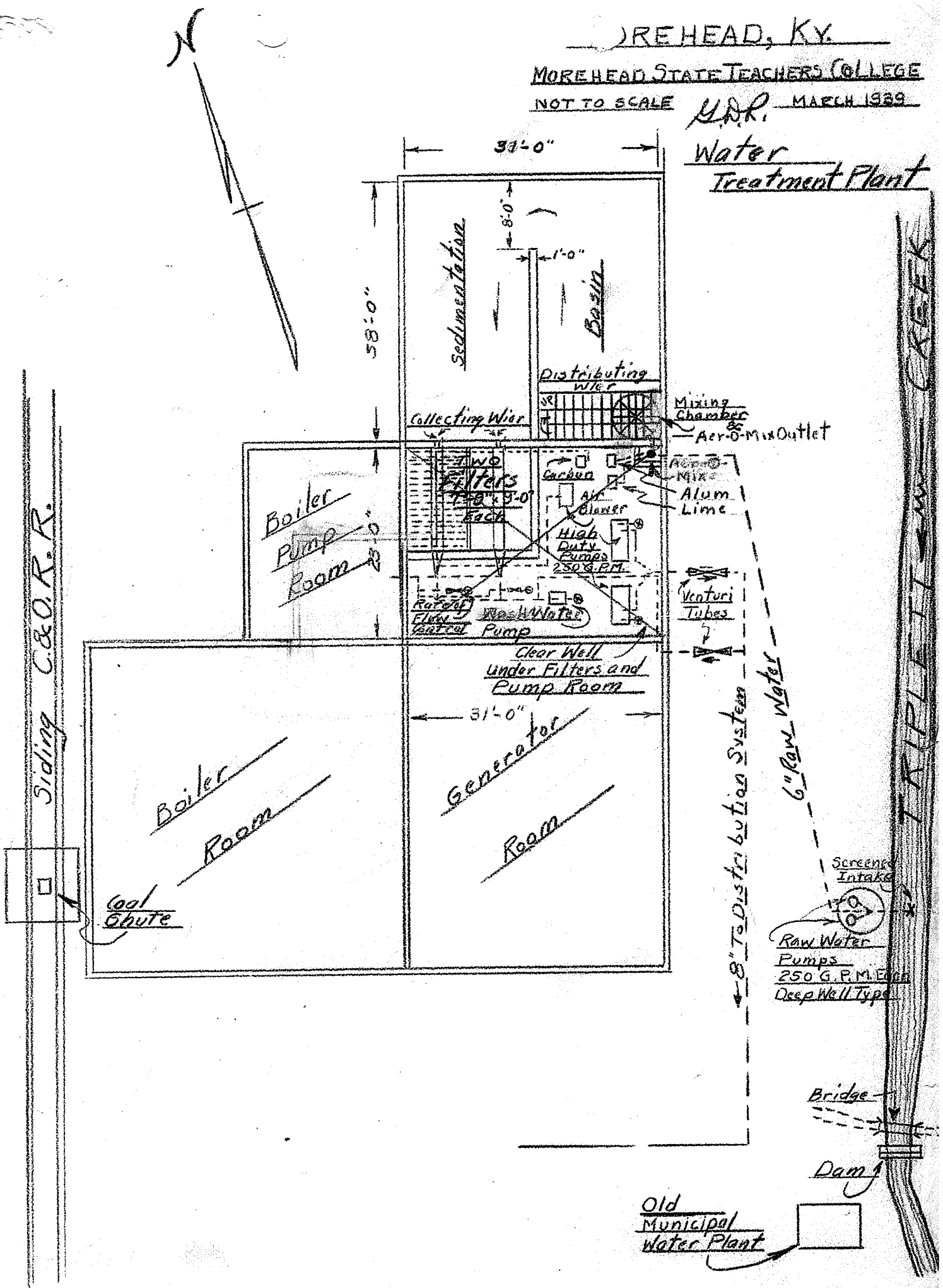
Section E

The water purification plant is operated by Mr. P. P. Thornton, water plant engineer. Mr. Gilbert Jones is assistant plant operator. The plant is without laboratory or laboratory equipment at present; however, there has been some discussion in regard to providing for water analyses to be made in connection with the chemistry department of the college. The plant is supervised and inspected regularly by the State Board of Health.

OREHEAD, KY.

MOREHEAD STATE TEACHERS COLLEGE

NOT TO SCALE — MARCH 1939



Water Treatment Plant

OHIO RIVER POLLUTION SURVEY - U.S.P.H.S. - CINCINNATI, OHIO

PUBLIC WATER SUPPLY - GENERAL

State Kentucky Main Watershed Licking River

County Rowan Sub-watershed Triplett Creek

City Morehead Pop.(1930) 825 (1938) 900-College 2000

Type Community Urban Informant Mr.P.P.Thornton,Water Plant Engr.

Source Supply Triplett Cr. Ownership Morehead State Teachers' College

Location Intakes Opposite plant-upper edge of town.

Pop.Served 3000 Est. No.Services 410 % Metered 99%

Daily Consumption: Avg 150,000 gals. Max 200,000 gals

Mileage Dist'r.Mains 5.3 Yr.Sys.Installed 1924

Storage: Clearwell 48,000 gals. Elevated 270,000 gals.

If available attach to report: (a) Mineral analysis raw water.
(b) Schedule consumer rates.

Section A - Discuss, under following numbered headings:

1. Growth and development of water system by Federal funds, P.W.A., F.E.R.A. and W.P.A. - 1933-1938.

2. General adequacy of supply, quality of raw water, principal troubles, dependability if scarce ground water.

3. Any unique features of supply.

Section B - Outline different types of pollution. Past experience over 15 year period and present status of pollution.

1. Sewage pollution effects on public water supply.

2. Effect of industrial wastes on public water supply.

3. Record of typhoid fever or intestinal disease outbreaks.

4. Acid mine drainage. Miscellaneous.

Note: Place data requested above under Sections A and B on following sheets, identified by form number, name of State and City in upper right-hand corner of sheet, such as "W-1", Cincinnati, Ohio."

Survey by Archie B.Freeman Date 3-22-39

Section A

(1) The first or old water plant was built in 1924 by the city of Morehead. The treatment in this plant consisted of filtration and chlorination. This plant now maintained for use only in case of emergency.

The new modern treatment plant was constructed during the period 1935-1936 by P.W.A. contract. New impounding dam and raw water pumping station constructed at the same time with P.W.A. funds.

(2) The raw water supply was inadequate prior to the construction of the new impounding dam across Triplett Creek, but an adequate supply is now provided. The dam, located opposite the old water plant is about 50 ft. long and 10 ft. high, and serves to raise the water level in the creek about 8 ft. The flood waters of March 4th and 5th, 1939, washed away the earth fill at one end of the dam, but this was being rebuilt at the time visited.

Triplett Creek watershed above the dam is devoted to farming and pasturage. The stream is clear and practically free of pollution under normal conditions. The quality of the raw water is considered to be good. The plant operator has had no trouble with treatment since completion of dam and new water purification plant.

(3) None.

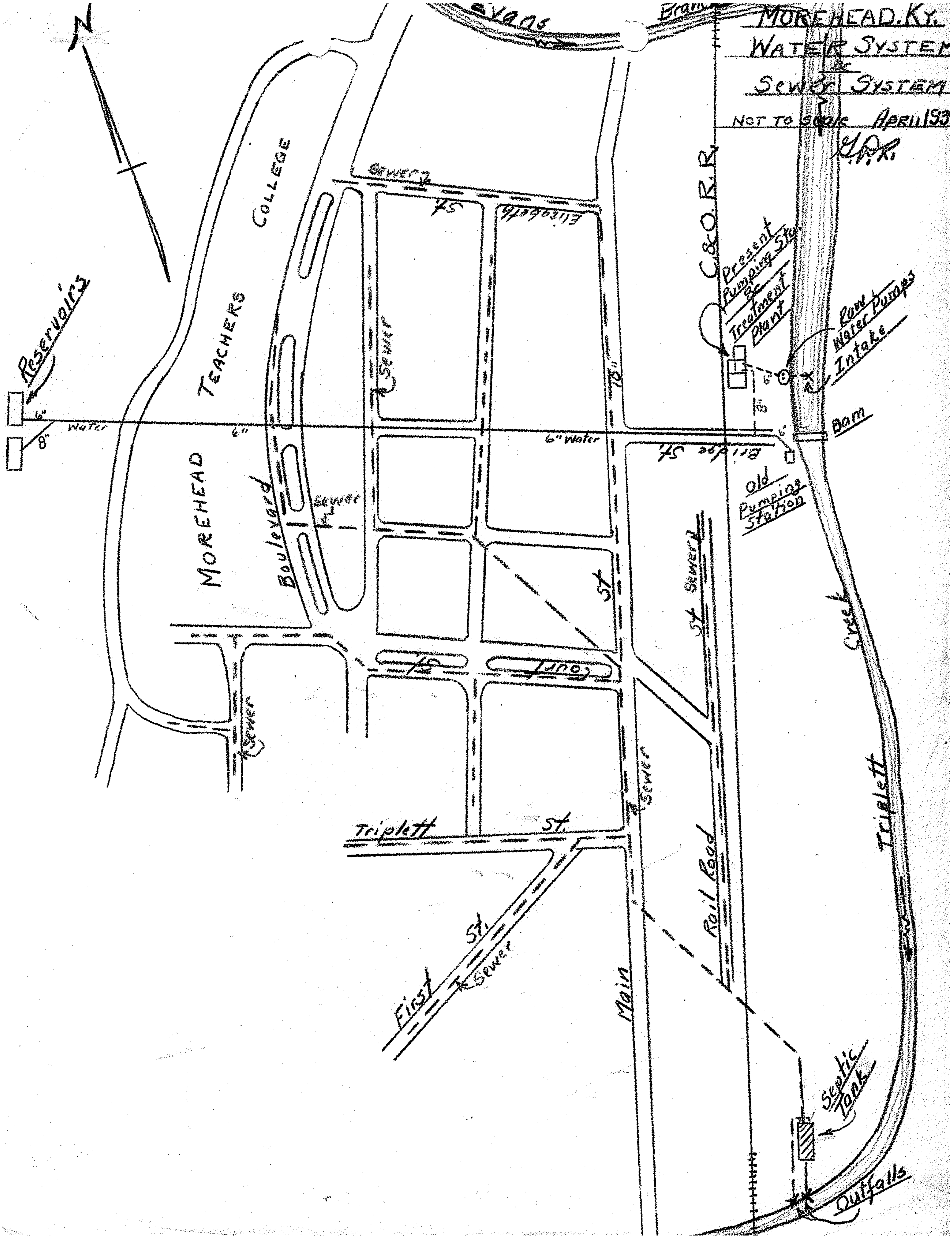
Section B

(1) The only source of sewage pollution is from private homes on watershed above the impounding dam. Watershed is sparsely populated at present.

(2) None

(3) About five years ago there was an outbreak of typhoid fever in the lower end of town. The County Health Officer reported around 30 cases and 10 deaths at that time.

(4) None.



MOREHEAD. KY.
WATER SYSTEM
&
SEWER SYSTEM
NOT TO SCALE April 193
N
Evans
Branch
Reservoirs
6"
8"
Water
6"
6" Water
COLLEGE
TEACHERS
MOREHEAD
Boulevard
Sewer
Elizabeth St
C&O R.R.
Present Pumping Sta. & Treatment Plant
Raw Water Pumps Intake
Dam
Bridge St
Old Pumping Station
18"
8"
Court St
St
Sewer
Triplett St.
First St.
Main
Rail Road St
Creek
Triplett
Septic Tank
Outfalls