# APPENDIX F

## Developer Installed Water Main Bacteriological Sampling Policy

*The Technical Specification used for Developer Installed Mains shall be the "American Water Works Service Company Incorporated Standard Pipeline Specifications" dated 2008. The Supplemental Technical Specifications amend or supplement the technical specifications. All provisions, which are not so amended or supplemented by the Supplemental Technical Specifications, shall remain in full force and effect:*

# DEVELOPER INSTALLED MAINS
# BACTERIOLOGICAL SAMPLING POLICY

## DISINFECTION OF NEW MAIN

New Distribution Main shall be

All water mains shall be satisfactorily disinfected per Illinois American Water Specification 15020 as modified by the Supplemental Technical Specifications as attached in this booklet in Appendix B and C. prior to start of sampling process.

In accordance with the requirements ILAWC Specification 15020 Part 3.05 and AWWA C651-99, at least one set of samples shall be collected from every 1200 feet of new water main, plus one set form the end of the line and at least one set from each branch.

Satisfactory disinfection shall be demonstrated in accordance with the requirements of 35 Ill. Adm. Code 652.203.

**Section 652.203 Projects Requiring Disinfection**

a) Disinfection is required for projects where facilities produce, contain, treat or carry water which must be bacteriologically safe. This includes but is not limited to water mains, filters, finished water storage tanks and wells.
b) Satisfactory disinfection is demonstrated when two consecutive water samples collected from the completed project at least 24 hours apart indicate no bacterial growths as measured by the membrane filter technique or no tubes positive as measured by the presumptive test, fermentation tub method.
c) All new water mains shall be satisfactorily disinfected prior to use. All new community water supplies shall collect representative samples at least 24 hours apart and receive satisfactory results from the analyses before an operating permit will be issued.
d) The requirement for collecting two consecutive samples given in (b) above, may be modified for water main construction projects at existing community water supplies practicing chlorination in accordance with 35 Ill. Adm. Code 604.401. Water supplies practicing adequate chlorination are required to collect only one satisfactory sample set before issuance of the operating permit provided adequate chlorine residual is present at the point of connection.
1) Adequate chlorine residuals exist in a distribution system when there is a minimum of 0.2 mg/l free chlorine residual for water supplies practicing free chlorination or 0.5 mg/l combined chlorine residual for water supplies practicing combined chlorination.
2) Projects in these supplies shall be considered satisfactorily disinfected if one water sample set indicates no bacteria.
3) If the analyses indicate the presence of contamination, resampling at the sampling point indicating contamination is required and results pursuant to (b) above shall be obtained.
e) Analyses of these samples shall be performed by an Agency laboratory or another certified laboratory.
1) The operating permit application shall be sent to the Division of Public Water Supplies permit Section at the same time as the water samples are sent to the Agency laboratory.
2) The laboratory report sheets shall be submitted with the completed operating permit application if another certified laboratory is used.

## PREPERATION OF SAMPLING FOR NEW MAIN

**Protocol for Sampling New Mains:**

New Distribution Main shall be established to obtain samples in accordance with the Sampling Plan as developed by ILAWC during the beginning of the project. This plan will indicate the locations for samples and provide the sample point labels.

Sampling will be conducted in accordance with IEPA Rules and Regulations, Title 35, Section 652.203 as included above with regard to the adequate chlorine residual conditions and the number of samples required from each location.

## COLLECTION OF SAMPLES FOR NEW MAIN

Depending on area that new development is being constructed will result in two different methods for the collection of samples for the new main. In some locations, Illinois American Water staff will collect the samples from the main and process the samples at the company lab. At other locations, the contractor/engineer shall collect the samples and deliver them to the appropriate location for processing by Illinois American Water.

### Illinois American Collection of Samples

Your company representative will communicate with you if the location of the development is in an area where Illinois American Water staff will collect the samples from the new main. In these locations it is important that the main has been disinfected as per the above specifications and the sample points are acceptable and follow the sampling plan as provided at the design acceptance stage.

Your company representative will confirm the contact requirements to establish the sampling schedule. Please contact your representative at least 72 hours ahead of your disinfection activity to develop the schedule. In most locations samples will only be collected between 8 am to 2 pm Monday through Thursday.

### Contractor Collection of Samples

In areas where samples are collected by the Contractor/Engineer the following "Guidelines for Sampling New Main" will apply.

## GUIDELINES FOR SAMPLING NEW MAIN

### Laboratory Hours

Samples will be accepted into the laboratory ***ONLY*** during the following hours:

Monday through Thursday
**8:00 a.m. - 2:00 p.m.**

**Sample Collection:**

- Sample must be collected in a labeled sterile bottle obtained from the IAWC District Laboratory as indicated by your company representative. This bottle will contain sodium thiosulfate, a dechlorinating agent, and will appear as a dry white powder or a few drops of liquid. ***DO NOT RINSE THIS OUT.***

- All information on label and form C-5 must be completed. Sample labels must follow the Sampling Plan as provided earlier.

- Sample ***must have a free and total chlorine residual taken in the field.*** The chlorine residual should be in a range that would be expected in the geographical area of the distribution system where the sample is being collected, but must be no higher than 4.0 parts per million (ppm) total.

- In order to collect samples please coordinate with your company representative a time that the valve entering the development can be operated. Samples will be collected either in the presence of or by an IAWC associate or representative.

- Sample will be delivered to laboratory within 6 hours of collection and in accordance with laboratory hours.

- ***Samples must be collected using the following procedure:***

1. Flush hydrant or blow off to clear the main of any high chlorine residual. This may take several minutes to several hours. Hydrant blow off must have a diffuser with sodium thiosulfate in it to remove chlorine.
2. Hydrant or blow off must be turned so that stream flow is very low.
3. Allow hydrant or blow off to flush for a couple of minutes at low flow to flush any bacteria or particulates off any surfaces the low flow is in contact with.
4. Run total chlorine analysis.
5. Complete all information on form or sample bottle label.
6. Wash hands or use sanitizing lotion liberally on both hands.
7. Uncap the sample bottle, holding the cap with the threads down.
   - DO NOT ALLOW THE INSIDE OF THE BOTTLE TO BECOME CONTAMINATED BY SPLASHING WATER OR STRAY FINGERS.
   - ALSO, DO NOT RINSE THE BOTTLE.
8. Collect the sample from the top center of the stream.
9. Fill the bottle to approximately one half inch below the top.
10. Carefully place the cap back on the sample bottle.

## IMPORTANT POINTS TO REMEMBER

The sample:

- ✓ Must be collected in one our sterile bottles.
- ✓ Must have a chlorine residual taken in the field.
- ✓ Must be collected by or in the presence of an IAWC associate or representative.
- ✓ If the sample results show any type of growth, then *two consecutive* samples must show no growth as per the requirement of 35 Ill. Adm. Code 652.203.
- ✓ Must be delivered to the lab on Lorentz St. on **Monday – Thursday, between 8 a.m. and 2 p.m.**

☆ **IMPORTANT** ☆

**This is the only time samples will be accepted into the lab**

Samples will be rejected if any of the following occur:

- Sample contains visible particulates.
- No chlorine residual is reported
- Chlorine residual reported is present beyond expected levels.
- Chlorine residual reported is below expected levels
- Chlorine is present in the sample (if a chlorinous odor is detected, the sample will be checked for a chlorine residual)
- Label or form is not properly completed
- Sample is not collected within valid time frame
- Sample arrived at lab outside designated hours.

## RESULTS OF SAMPLES FOR NEW MAIN

Samples will be analyzed for Coliform and non-Coliform growth using the Membrane Filter method with m-Endo media in accordance with Standard Methods section 9222 B. Results for this method are available in 22 – 26 hours. The plate must show ***no growth***. Growth of any kind, even one non-Coliform, will give a positive result, meaning the sample is unacceptable.

Upon completion of the test you company representative will contact you with the results of the samples and develop a plan to collect additional samples if needed.