

Standard Operating Procedure



Clean City Public Works
Water Quality
Weekly Compliance Samples

Creation Date: 07/14/2020
Revision Date:
SOP Number: 1

Approved By: _____
Water Quality Manager

Approval Date: _____

Task Description:

Weekly collection of water quality and bacteriological samples from the distribution system.

Purpose:

This SOP is intended to provide a uniform method for the proper collection, preservation, and transportation of the weekly water quality samples to the Water Quality Laboratory. These samples are required by the ADEQ approved Sample Siting Plan.

Hazard Identification:

Be aware of your surroundings at all times when out in the field. Potential hazards include:

1. Animals
2. Traffic

Required PPE, Tools, Equipment, and Materials:

1. Two ice chests with 4 icepacks each
2. 40 Sterile Coliform sample bottles
3. Nitrile gloves
4. Box of Kimwipes
5. Chlorine sample kit (HACH Colorimeter II and sufficient DPD Reagent for 40 samples)
6. Calibrated Thermometer
7. Calibrated Conductivity meter
8. Calibrated pH probe and meter
9. 250 mL polypropylene beaker

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Required Permission or Notifications:

N/A

Special Qualifications for Performance:

Sample collector must be trained in the proper collection, preservation, and transportation of water quality samples and approved by the Water Quality Supervisor. Pre-approved certifications include:

1. Lab Analyst I or higher
2. Distribution Operator 1 or higher

Procedure:

1. Beginning at sample site #1 on the ADEQ approved Sample Siting Plan:
 - a. Open the sample station and clean/disinfect as required prior to flushing the sample line.
 - b. Flush the sample line at the maximum flow rate and measure the water temperature.
 - c. Once the water temperature stabilizes, reduce the flow rate for sample collection.
 - d. Record the water temperature.
 - e. Collect and measure a sample for Chlorine Residual.
 - f. Record the value.
 - g. Using appropriate aseptic sampling technique, carefully collect the Coliform sample in the sterile bottle, filling it to the 100 mL mark and label the bottle.
 - h. Place the Coliform sample in the ice chest for transport to the lab.
 - i. Collect a sample in a 250 mL polypropylene beaker and measure conductivity.
 - j. Record the value.
 - k. Collect and new sample in the 250 mL polypropylene beaker and measure pH.
 - l. Record the value.
2. Record the sample time on the sample collection log once all samples have been collected
3. Note any adverse weather or out of the ordinary sample station conditions in the remarks section on the sample collection log.
4. Lock the sample station and proceed to sample site #2.
5. Repeat this process until all weekly samples have been collected.
6. Deliver the samples to the Water Quality Laboratory and transfer custody to the on-duty lab analyst.

Additional Notes or Suggestions:

- All samples must be collected and delivered to the water quality Laboratory within 6 hours to meet hold-time requirements for the Coliform analysis.
- This is easily accomplished if you follow the Sample Route Map which is affixed to the back of the sample log clipboard.

Video Demonstration:

<https://vimeo.com/62364554/03dd220248>