INSPECTION REPORT

OF THE

CITY OF QUINCY PUBLIC WATER SYSTEM
DRINKING WATER TREATMENT PLANT
QUINCY, FLORIDA

By

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ENFORCEMENT AND COMPLIANCE ASSURANCE DIVISION
WATER ENFORCEMENT BRANCH
DRINKING WATER ENFORCEMENT SECTION

February 16, 2022

Introduction

A Drinking Water inspection to evaluate compliance with the Safe Drinking Water Act (SDWA) was performed at the City of Quincy Public Water System (PWS), PWS ID: FL1200551 in Quincy, Florida on February 1, 2022. The inspection was conducted under the authority of Section 1445(b)(1) of the Safe Drinking Water Act (SDWA).

An entrance briefing was held on February 1, 2022 where U.S. Environmental Protection Agency (EPA) inspectors presented their credentials and discussed the purpose of the onsite inspection. Personnel from Florida Department of Environmental Protection (FDEP) were also present at the time of the inspection. Following the briefing EPA, FDEP, and Quincy PWS staff visited the wells, toured the old surface water plant, and visited the distribution system assets. Document review and Supervisory Control and Data Acquisition (SCADA) system observation were conducted prior to the closing briefing. At the closing, a preliminary list of observations was presented to system staff.

Purpose

In FY20, the EPA began a National Compliance Initiative (NCI) with the goal of reducing noncompliance with drinking water standards at community water systems. One of the goals of the NCI is to support the Agency's Strategic Plan, which calls for a 25 percent reduction in the number of community water systems that are out of compliance with health-based standards by the end of FY 2022.

EPA has also been directed to take immediate and affirmative steps to incorporate environmental justice considerations into their work. As such, EPA has taken steps to recognize and prioritize systems that serve previously underserved populations. Quincy PWS was identified as a candidate for inspection based on this directive.

Participants

City of Quincy Public Water System:
Terry Presnal – Project Manager, Jacobs

Florida Department of Environmental Protection:
Erin Rasnake – Assistant District Director
Tracy White – Environmental Specialist
Katie Downey – Program Consultant

EPA:
Rebecca Quiñones – Senior Enforcement Officer
Whitney Lehrer – Inspector in Training

Facility Description

The Quincy Public Water System (System) is located at 300 North GF&A Drive, Quincy, Florida 32351. The System was initially constructed as a surface water plant but officially transitioned to exclusively groundwater supply in 2004. The well operation and maintenance, water treatment, and water quality sampling are performed by Jacobs, a contractor for the City of Quincy. Jacobs also performs ground maintenance at the distribution system storage tanks. The City of Quincy is responsible for the distribution system operation and maintenance, including maintenance of the distribution system tanks. System flushing is performed yearly by the City fire department. The PWS consists of approximately 3,797 service connections serving a population of roughly 10,128. It is staffed 8-hours per day during the week, and site visits to all locations in the system are performed during the weekend. The system produces an average of 1.43 million gallons per day (MGD) with the ability to produce up to 3.6 MGD. One inter-connection exists with the City of Gretna, and Quincy PWS provides them with 720,000 gallons of water per day. The finished water storage capacity for the System totals to 3 MGD. The old surface water plant has three ground storage tanks for a combined storage capacity of 1.7 MGD, and the distribution system is comprised of three elevated tanks with 1.3 MGD total capacity.

The System utilizes four main wells for source water and maintains two wells as emergency backup. Wells 6, 7, 8, and 9 are located in a common well field, which draws water from the Floridan Aquifer. The well field was constructed in 2003, which began the system's transition to groundwater. Well 6 has a maximum pump capacity of 1,100 gallons per minute (GPM), and wells 7, 8, and 9 all have a maximum pump capacity of 1,350 GPM. Each well location has a generator onsite that is exercised monthly. All wells can be controlled via the control room located in the well field, automatically by the SCADA system, manually within the well house at each well location, or manually from the variable frequency drive, with Well 6 as the exception because it is not fitted with a variable frequency drive.

Water from the well field is pumped to the control room, where it enters a transmission main and is dosed with a small amount of chlorine to maintain transmission lines as the water moves toward the old surface water plant for further treatment. Also housed in the control room is the lubrication for the well bearings and telemetry associated with the wells. Well 2 is located at the old surface water plant and has a pump capacity of 450 GPM. Well 4 is a submersible well located offsite and has a pump capacity of 300 GPM. Wells 2 and 4 are tested and maintained in case of an emergency, but do not operate on a regular basis.

The water is split from the transmission main at the old surface water plant into the three ground storage tanks onsite, designated as oval, cone, and million-gallon. The oval tank holds 500,000 gallons and was last inspected and cleaned in 2021. The cone tank has a 200,000-gallon capacity and was last inspected and cleaned in 2021. The million-gallon tank is the newest constructed with a capacity of one-million gallons. It was last inspected in 2020. The City of Quincy is responsible for the maintenance of the ground storage tanks, though Jacobs coordinates the timing of the tank inspections.

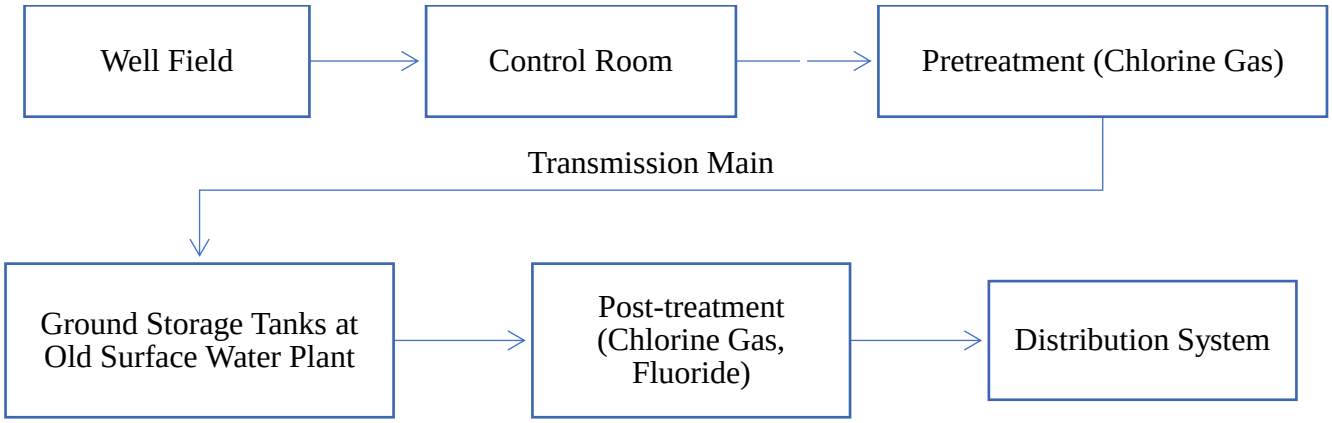
Following the ground storage tanks, the water is treated with fluoride and chlorine gas to reach a concentration of 0.5 mg/L and 1.2 mg/L, respectively. The system used hydrofluosilicic acid as

the fluoridation agent fed via peristaltic pump. There is a backup pump that can be manually switched over if the first pump fails. Chlorine gas is fed from tanks at the old surface water plant, with automatic switchover when tanks are emptied. The chlorine leak detection monitors are checked quarterly with granular chlorine to ensure that they are in working order. The chlorine room is visited daily by an operator. All chemicals used are NSF certified.

Three high service pumps (HSPs) are located at the old surface water plant. The HSPs and affiliated generator operations and maintenance are performed by the City of Quincy. Each pump has 1,000 GPM pump capacity. Only one pump runs at a time, and pump cycling is controlled by the SCADA system. The fluoride feed is tied directly to the HSPs and only operates when the HSP is running to avoid over-dosing fluoride in the system.

Point of entry samples are pulled from the HSPs and are monitored for fluoride and chlorine concentration at the old surface water plant. The samples are collected daily but are typically run every other week. All other required sampling is sent to Flowers Laboratory or Ackuritlabs, Inc.

The flow of water at Quincy PWS is as follows:



Following the addition of the treatment chemicals, finished water is carried through the distribution system main to the Virginia, Adams, and Roberts elevated storage tanks. All tank locations are fenced in and are connected to the SCADA system. Adams tank has a 300,000-gallon capacity, and Roberts and Virginia each have a capacity of 500,000 gallons. Roberts and Virginia tanks were renovated in 2012 and 2018, respectively, and maintain good conditions on tank exteriors. Adams tank is due for an inspection and washout, as stated by PWS staff.

The SCADA system utilized by the PWS automatically controls wells 6 – 9 based on the level of water in the ground storage tanks at the old surface water plant. Similarly, the HSPs are automatically controlled based on the level of water in the elevated storage tanks. The SCADA system monitors tanks levels, chlorine levels, and system pressure. High and low chlorine and pressure alarms alert the System only in the SCADA control page; operators are not automatically notified if alarms are triggered.

EPA inspectors visited the following sections of the PWS:

- Well field – Wells 6, 7, 8, and 9
- Old Surface Water Plant
    - Oval ground storage tank
    - Cone ground storage tank
    - Million-gallon ground storage tank
    - Laboratory
    - Well 2
- Adams elevated storage tank
- Roberts elevated storage tank
- Virginia elevated storage tank
- Well 4

Personnel

One Grade C Certified Operator operates the PWS. Operators are responsible to maintain certification and keep all records of training.

Documentation reviewed

Prior to the inspection, EPA inspectors reviewed the following documentation:

- Last two sanitary surveys performed by FDEP
- Violation history
- Enforcement Targeting Tool Score history

While on site, EPA inspectors reviewed the following documentation:

- Bacteriological sample siting plan
- October – December 2021 Bacteriological sampling results
- Cross-connection control plan
- Distribution system map
- 2017 and 2020 Lead and Copper Rule sampling results
- 2017 and 2020 Lead and Copper Rule sampling letter and instructions
- Lead and Copper Rule sampling plan
- 2021 Monthly operating reports
- Revised Total Coliform Rule sampling standard operating procedure
- Operator certification documents
- Public notification standard operating procedure
- Stage 2 Disinfection and Disinfection Biproducts monitoring plan
- Third quarter 2021 Disinfection and Disinfection Biproducts sampling results
- Tank inspection reports
- Treatment plant schematic

Comments and Observations

Comments

Facility staff was welcoming and helpful during the inspection. Good communication was observed among all participants. The staff was accommodating and efficient at touring EPA

inspectors around the WTPs and the distribution system. System staff was responsive to observations made onsite and were proactive in addressing some observations prior to the report being completed.

Violations related to pentachlorophenol maximum contaminant level exceedances in Well 9 have been addressed by the PWS and the System has returned to compliance. The System noted multiple issues in the operation of the SCADA software. They are currently working with a new software company to resolve telemetry issues.

Observations

1. **Observation**: Wells 6 – 9 exhibited signs of biogrowth and slight corrosion. Well 2 also had signs of corrosion (refer to Appendix A, Photograph 1 – 5).
   Comments: Well components should be maintained in good operating condition to protect the supply of water.

2. **Observation**: Well 4 discharge pipe lacked size-24 mesh screen at the time of the inspection (refer to Appendix A, Photograph 6).
   Comment: Discharge pipes should be screened with size-24 mesh in order to prevent entry of contaminants. Per System's response on February 4, 2022, the screen has been installed on the discharge pipe.

3. **Observation**: Vegetative growth in the vertical plane was noted at Roberts, Adams, and Virginia tanks premises (refer to Appendix A, Photograph 7 – 8).
   Comment: The vertical plane should be kept free of vegetation to prevent damage to the tanks and entry of contaminants or animals to the finished water. Per System's response on February 4, 2022, removal of the vegetation at Adams and Roberts tanks has begun.

4. **Observation**: Virginia tank overflow pipe lacked size-24 mesh at the time of the inspection (refer to Appendix A, Photograph 9).
   Comment: Tank overflows must have appropriately attached screens to prevent contamination of the finished water. Per System's response on February 4, 2022, correctly sized screen has been installed on the overflow pipe.

5. **Observation**: Standards for chlorine and fluoride monitoring kept at the old surface water plant expired in March 2021and April 2020, respectively, at the time of the inspection (refer to Appendix A, Photograph 10 – 11).
   Comment: Reagents used in the analysis of samples must be current and disposed of by the expiration date according to manufacturer instructions. Per System's response on February 4, 2022, staff has begun using unexpired chlorine standards from the wastewater treatment plant until new standards arrive. Expired fluoride standards have been discarded and new standards have been put in place.

Findings

1. **Finding**: EPA inspectors noted that many of the customer collection forms for Lead and Copper Rule sampling were missing critical information such as time of last use, date/time of collection, and signature of sampler as required in 40 CFR § 141.86. Without having the information on the form, it is not possible to determine if a sample has been collected properly. Additionally, the laboratory doesn't have a rejection policy and the results of those samples were included on the applicable monitoring period.
   Comment: The PWS must implement a review process to ensure that the sample collection forms contain all the required information and that samples were appropriately collected prior to sending them to the laboratory. Additionally, a rejection policy should be developed by the PWS to identify samples that need to be invalidated and resampled. Results from samples that have been improperly collected can't be used by the PWS.

2. **Finding**: The ground storage tanks exhibited signs of significant deterioration.
   a. Oval ground storage tank – The flat cover lacked a sanitary seal and had significant cracking on the cover (refer to Appendix A, Photograph 12 – 14).
   b. Cone ground storage tank – There is visible cracking on the exterior and a leak on the southwest side of the tank (refer to Appendix A, Photograph 15).
   c. Million-gallon ground storage tank – The grout seal has deteriorated on the base (refer to Appendix A, Photograph 16 – 17).

   F.A.C. 62-555.350 Operation and Maintenance of Public Water Systems – (2) Suppliers of water shall keep all necessary public water system components in operation and shall maintain such components in good operating condition, so the components function as intended…. blistering, chipped, or cracked coatings and linings on treatment or storage facilities in contact with raw, partially treated, or finished drinking water shall be rehabilitated or repaired.
   Comment: Storage tanks must be properly sealed to prevent the intrusion of contaminants and to maintain the structural integrity of the tank.

3. **Finding:** The overflow pipe at Adams storage tank is leaking, which has caused water to pool at the base of the support structures. Additionally, a live electrical wire extends across the site with a portion of the wire wrapped around the leaking overflow approximately five feet above ground level (refer to Appendix A, Photograph 18 – 21).
   F.A.C. 62-555.350 Operation and Maintenance of Public Water Systems – (2) Suppliers of water shall keep all necessary public water system components in operation and shall maintain such components in good operating condition, so the components function as intended.
   Comment: Pooled water at the base of the support structure threatens the stability of the tank. The live electrical wire poses a threat to the safety of the staff working onsite and could potentially compromise the tank structure.

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Bryan Myers, J.D, Chief
Drinking Water Enforcement Section
Water Enforcement Branch

Appendix A: Photograph Log

Photograph 1: Well 6 exhibiting biogrowth and corrosion.

Photograph 2: Well 7 exhibiting biogrowth and corrosion.

Photograph 3: Well 9 exhibiting biogrowth and corrosion.

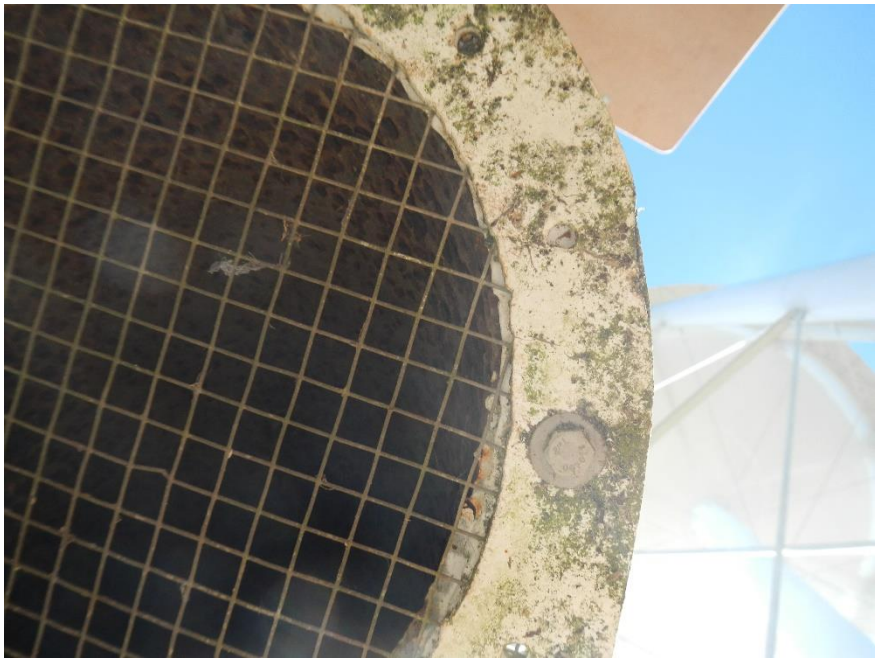
Photograph 4: Well 2 piping exhibiting corrosion.

Photograph 5: Well 2 pump head and base exhibiting corrosion.

Photograph 6: Missing 24-mesh on discharge pipe at Well 4.

Photograph 7: Vegetation in the vertical plane at Adams elevated storage tank.

Photograph 8: Vegetation in the vertical plane at Roberts elevated storage tank.



Photograph 9: Incorrectly sized mesh at Virginia elevated storage tank overflow.

Photograph 10: Expired chlorine standards in laboratory.

Photograph 11: Expired fluoride standards in laboratory.

Photograph 12: Covering on oval ground storage tank, which lacks a sanitary seal and has significant cracking.

Photograph 13: Close-up image of missing seal around oval ground storage tank.

Photograph 14: Exterior deterioration on oval ground storage tank.

Photograph 15: Leak beneath concrete slab on southwest side of cone ground storage tank.

Photograph 16: Deteriorated seal on base of million-gallon ground storage tank.

Photograph 17: Close-up of deteriorated seal on base of million-gallon ground storage tank.

Photograph 18: Leaking overflow at Adams elevated storage tank.

Photograph 19: Accumulation of water at the base of the support structure caused by leaking overflow at Adams elevated storage tank.

Photograph 20: Live electrical wire extending across the site of Adams elevated storage tank.

Photograph 21: Live electrical wire extending across the site of Adams elevated storage tank.