STATE OF MISSOURI
Jeremiah W. (Jay) Nixon, Governor Sara Parker Pauley, Director
DEPARTMENT OF NATURAL RESOURCES
dnr.mo.gov

December 9, 2015

The Honorable Rick Gardner, Mayor
City of Ozark
P.O. Box 295
Ozark, MO 65721

Dear Mayor Gardner:

An inspection was conducted at the Finley Valley/City of Ozark public water system by Missouri Department of Natural Resources (department) staff pursuant to Safe Drinking Water Law on November 19, 2015, as described in the enclosed report.

The site was found to be **in compliance** with the Safe Drinking Water Law based upon the observations made at the time of the inspection. The Report of Inspection outlines the findings of the inspection and may list important recommendations that should be considered to ensure continued compliance. Your cooperation implementing those recommendations will be appreciated.

Unless otherwise requested within the report, all correspondence and questions should be directed to Mr. Jason Wolf of this office by calling 417-891-4300 or via mail at the Southwest Regional Office, 2040 West Woodland, Springfield, MO 65807-5912.

Sincerely,

SOUTHWEST REGIONAL OFFICE

Mark Rader, Chief
Drinking Water Section

MDR/jwl

Enclosure

c: Mr. Jim Busch, Public Service Commission
Ms. Misty Lange, Public Drinking Water Branch

043.pdwp.FinleyValleyCityofOzark.mo5036273.x.2015.12.09.fy16.ins.x.jcw

Missouri Department of Natural Resources
Southwest Regional Office/Public Drinking Water Branch
Report of Inspection
Finley Valley/City of Ozark
Christian County, Missouri
Public Water System ID Number MO5036273
December 9, 2015

Introduction

A routine inspection was made by the Missouri Department of Natural Resources (department) of the community public water system serving Finley Valley/City of Ozark on November 19, 2015. The purpose of the inspection was to determine compliance with Missouri Safe Drinking Water Law and Regulations. The inspection reviewed all eight critical components applicable to the public water system.

The following people were present at the time of the inspection:

Finley Valley/City of Ozark
Mr. Tim Auchtung
Mr. Rodney Robison, Operator

Missouri Department of Natural Resources
Jason Wolf, Environmental Specialist

Facility Description and History

The system serves approximately 560 people in the subdivision through 219 connections. The system operates year-round.

Well #9 was drilled in 1985 to a depth of 707 feet with six-inch casing to a depth of 450 feet. The submersible pump is a 7.5-horsepower set at 399 feet. Well #10 was drilled in 1989 to a depth of 750 feet with six-inch casing to a depth of 400 feet. Water from each well is disinfected by injecting sodium hypochlorite before distribution through 2, 4, and 6-inch polyvinylchloride pipe. Tracer wire or tape is not provided on the piping throughout the distribution system. There is also one and one-half inch galvanized pipe in the distribution system. Water from both wells is combined before storage in the 58,178-gallon standpipe.

The system inspected the storage tank, maintained separate water use and loss records from the City of Ozark, and installed a raw water tap on Well #10 (photograph 6) since the last inspection on September 12, 2012.

The system is located in the James River watershed (11010002).

The system requires an operator properly certified at the DS-II level. Mr. Rodney Robison is

properly certified above this level.

Discussion of Inspection and Observation

I met with Mr. Tim Auchtung at 8:50 a.m. November 19, 2015. We discussed and viewed the backflow reports, flushing records, and distribution map for Finley Valley. Mr. Rodney Robison arrived during the record review. Mr. Robison provided additional records and documentation of the usage at Finley Valley. Water use for the year 2014 was 13,705,400 gallons, or an average of 37,549 gallons per day. Water loss for the same time period was 7.3 percent. We also discussed future plans for the water system. The city plans to connect Finley Valley to the City of Ozark sometime in the future. The City of Ozark is also planning to make improvements to storage capacity by moving an existing storage tank from the City of Ozark or constructing a larger storage facility at Finley Valley. Plans include drilling a new deep well to supply the Finley Valley Area and abandoning the two current wells. After the file review, Mr. Auchtung excused himself and Mr. Robison escorted me to Finley Valley.

Upon arriving at Well #9, Mr. Robison unlocked the wellhouse. I noticed that the casing and surface casing is corroded. I then saw that the chlorine tank was not sealed or vented to the outside. An observable check valve is not provided for Well #9, although a check valve is provided on underground piping before distribution. After viewing Well #9, we headed to Well#10. Upon removing the insulation around the well, I noticed that the casing for Well #10 is corroded. After viewing the wellhead we entered a building to the east of the well which houses the master meter, check valve, chlorine injection, a telephone connection for automatic control of the wells, and an interconnection with Well #9.

We then proceeded to the standpipe and valve vault. The standpipe was inspected on May 1, 2015, and the exterior cleaned. Mildew growth has returned to the bottom portion of the tank since the cleaning. A finished water sample tap is located in the valve vault. This tap is difficult to access, and chlorine values are taken in distribution daily. After viewing the tank, I sampled chlorine residuals at two locations and sampled for microbiological contamination at one location. Upon returning to the Ozark Public Works office, Mr. Robison obtained the current rate structure of the system.

The system currently charges $6.68 for the first 2,000 gallons of water. We recommend you evaluate the rate and determine if it meets the minimum necessary to recover the full costs associated with production, treatment, storage and distribution of water. Establishing an annual cost of living adjustment can help eliminate large fee increases when rate increases are delayed until large item expenses occur.

Sampling and Monitoring

One drinking water sample was collected from 4103 Serenity Lane and was submitted for microbiological analysis. The sample was analyzed at the Missouri State Public Health Laboratory. The sample tested total coliform absent or "safe". Chlorine residuals were checked at two locations in distribution. The free chlorine at 905 41st Street was 1.29 mg/L, and the total residual chlorine level at this location was 1.31 mg/L at the time of the inspection. The free chlorine at 4103 Serenity Lane was 1.25 mg/L, and the total residual chlorine level at this location was 1.25 mg/L at the time of the inspection.

There were no monitoring or maximum contaminant level violations during the last twenty-four months.

Unsatisfactory Findings

1. During the time of the inspection and the file review no violations of the Safe Drinking Water Regulations were noted for the past two years.

Recommendations

1. The well casing was not protected against physical damage at both wells (photos 2 and 5).

The well casing and all exposed piping should be protected against deterioration, physical damage, and freezing. Paint the exterior of the well casing to protect it from corrosion.

2. The chlorine solution tanks are not vented to the outside at both wells (photograph 3).

The chlorine feed and storage system is a critical component that ensures the quality of water served to the public. However, chlorine gas is a strong oxidant that will contribute to the oxidation (corrosion) of unpainted steel surfaces. To protect these steel surfaces, a coat of paint should be applied. In addition, the chlorine solution tank should be designed and constructed to be sealed and vented to the outside.

Seal the chlorine solution tanks and vent tanks to the outside using the same flexible poly tubing used for the chlorine feeder line. The vent line should be protected by 18 gauge mesh to prevent plugging by insect activity.

3. The pump discharge piping is not equipped with an aboveground check valve at Well #9.

A well pump discharge check valve is needed to prevent water from the storage tank and distribution system from entering the well. Even wells with submersible pumps that have a check valve in the piping in the well need an above ground pump discharge piping check valve as a safety precaution. The only exception is a pump that discharges directly into the top of an unpressurized storage tank. The department recommends an above ground check valve should be installed between the well and storage tank.

4. The public water system does not have adequate emergency electrical power. However, at the time of inspection, the system had plans to install an electrical transfer switch at Well #10. A portable generator is available and housed at the wastewater treatment facility.

When power failure would result in cessation of minimum essential service, an alternate power supply should be provided to meet average day demand. Each public water system should have an emergency electrical power source which may include a permanent or portable generator at each well and pump station, a tractor connection at each well or pump station, or service from two power companies.

Install the transfer switch as planned. The department recommends providing sufficient emergency electrical power to operate all pumps that are essential to maintaining water supply and pressure.

Additional Comments

The Revised Total Coliform Rule will be in effect beginning in April 2016. The most significant change will be that unsafe routine samples will result in an assessment with the goal of finding and eliminating the cause of contamination instead of the issuance of a microbiological maximum contaminant level violation. Please refer to the enclosed quick reference guide and http://dnr.mo.gov/env/wpp/pdwb/rtcr.htm for more information.

Signatures

SUBMITTED BY:

Jason Wolf
Environmental Specialist
Southwest Regional Office

REVIEWED BY:

Judith Charlton, Chief
Drinking Water Inspection Unit
Southwest Regional Office

Attachments

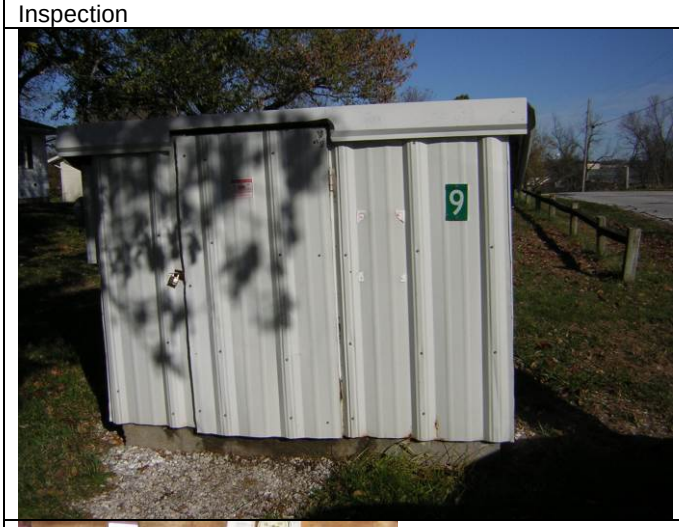
Photograph Addendum 1 through 6
Revised Total Coliform Rule: A Quick Reference Guide

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY

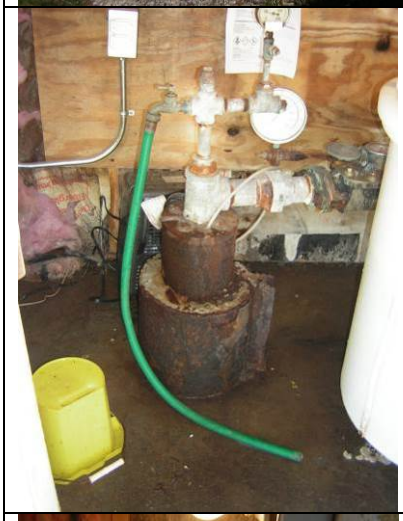
PHOTOGRAPH ADDENDUM

REGIONAL OFFICE
Southwest Regional Office

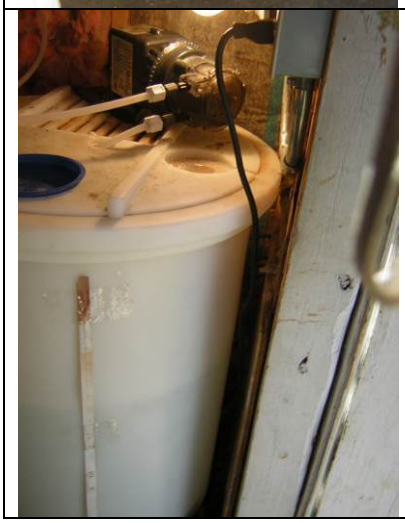
GENERAL INFORMATION	
FACILITY Finley Valley/City of Ozark	PROGRAM Drinking Water Program
ACTIVITY (INSPECTION, INVESTIGATION, ETC.) Inspection	DATE OF ACTIVITY November 19, 2015



PHOTOGRAPH# 1
DATE TAKEN: November 19, 2015
BY: Jason Wolf
DESCRIPTION: Well #9 wellhouse containing the wellhead and chlorination system.



PHOTOGRAPH# 2
DATE TAKEN: November 19, 2015
BY: Jason Wolf
DESCRIPTION: Well #9 with corroded casing.



PHOTOGRAPH# 3
DATE TAKEN: November 19, 2015
BY: Jason Wolf
DESCRIPTION: Chlorine solution tank at Well #9. The tank is not sealed and vented to the outside.

MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY

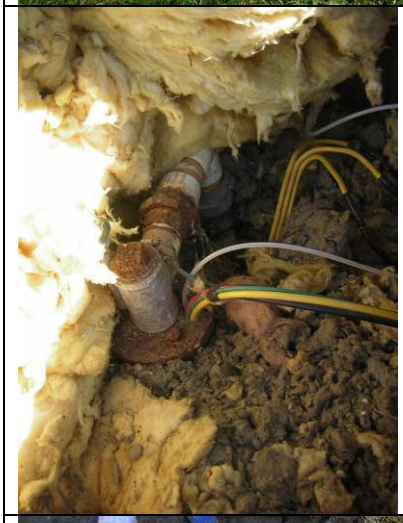
PHOTOGRAPH ADDENDUM

REGIONAL OFFICE
Southwest Regional Office

GENERAL INFORMATION

FACILITY	PROGRAM
Finley Valley/City of Ozark	Drinking Water Program
ACTIVITY (INSPECTION, INVESTIGATION, ETC.)	DATE OF ACTIVITY
Inspection	November 19, 2015

PHOTOGRAPH# 4
DATE TAKEN: November 19, 2015
BY: Jason Wolf
DESCRIPTION: Doghouse for Well #10.



PHOTOGRAPH# 5
DATE TAKEN: November 19, 2015
BY: Jason Wolf
DESCRIPTION: Well #10 with electrical wires and drawdown tube.

PHOTOGRAPH# 6
DATE TAKEN: November 19, 2015
BY: Jason Wolf
DESCRIPTION: Raw water sample tap immediately east of the doghouse for Well #10.

Mr. Jim Bush
Public Service Commission
P.O. Box 360
Jefferson City, MO 65102-0360