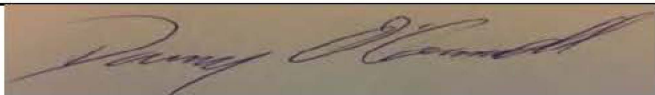


Region 6 - Enforcement & Compliance Assurance Division
INSPECTION REPORT

Inspection Date(s):	06/04/2024 through 06/06/2024	
Media Program:	Drinking Water	
Regulatory Program(s)	Safe Drinking Water Act (SDWA)	
System Owner:	City of Stillwater	
System Name:	City of Stillwater Public Water System (PWS)	
System Physical Location:	1022 W Yost Road	
(city, state, zip code)	Stillwater, OK 74075	
Mailing address:	P.O. Box 1449	
(city, state, zip code)	Stillwater, OK 74076	
County/Parish:	Payne County	
System Phone Number	405-533-8452	
System Contact:	James Driskel	Water Utilities Director
	jdriskel@stillwater.org	
FRS Number:	110000753248	
System Classification:	Community Water System (CWS)	
PWS ID:	OK1021220	
Media Identifier Number:	N/A	
NAICS:	N/A	
SIC:	4941	
Personnel participating in inspection:		
Daniel Kim	EPA Region 6	Enforcement Officer
Mariela Reyna	EPA Region 6	Enforcement Officer
Danny O'Connell	PG Environmental/ERG (EPA Contractor)	Inspector
Jake Okun	PG Environmental/ERG (EPA Contractor)	Inspector
Freddy Pitts	City of Stillwater	WTP Supervisor
Jason Tyler	City of Stillwater	Plant Manager
James Driskel	City of Stillwater	Water Utilities Director
Kelley Hitch	City of Stillwater	Water Utilities Specialist
Jackson Dozier	City of Stillwater	Water Quality
Ginger Sharkness	Oklahoma DEQ	District Engineer
Dawn Hoggard	Oklahoma DEQ	District Engineer
Prasuna Maskey	Oklahoma DEQ	District Engineer
EPA Lead Inspector:	7/17/2024	
Signature/Date		
	Danny O'Connell (ERG)	Date
Supervisor	7/25/2024	
Signature/Date	RUBEN ALAYON-GONZALEZ	
	Ruben Alayon-Gonzalez	Date

Section I – INTRODUCTION

Purpose Of The Inspection

On June 4-6, 2024, U.S. Environmental Protection Agency (EPA) Region 6 and EPA contract inspectors from PG Environmental, a division of ERG (hereinafter the EPA Inspection Team) conducted an announced Safe Drinking Water Act (SDWA) compliance inspection of the City of Stillwater Public Water System (the System or City), ID No. OK1021220. The inspection began at approximately 8:30 a.m. on June 4, 2024 and finished at approximately 3:00 p.m. on June 6, 2024. The City of Stillwater owns and operates the System.

Danny O’Connell and Jake Okun presented their SDWA inspector credentials to the System representatives during the opening conference. The EPA Inspection Team informed the System representatives that this was an EPA inspection to determine compliance with the SDWA and other applicable federal and state regulations. The EPA Inspection Team met with James Driskel, the City’s Water Utilities Director, Freddy Pitts, the Water Treatment Plant (WTP) Supervisory, Jason Tyler, the Plant Manager director, as well as other System representatives (see the attendance table on Page 1) for the opening conference. Members of the Oklahoma Department of Environmental Quality (DEQ) also attended the inspection.

This report summarizes observations made as part of the inspection, which consisted of the following major activities:

- Discussions with the City’s water system personnel regarding the operation and maintenance of the PWS
- Site visits to the System’s water treatment plant:
 - **Stillwater Conventional Water Treatment Plant**
 - Raw Water Ground Storage Tank
 - Solids Contact Units (3)
 - Recarbonization Basins (2)
 - Dual Media Filters (12)
 - Ozone Basins (2)
 - Onsite Ground Storage Tank/Clearwell
 - Distribution Pump Station
 - Recovered Water Lagoons (7)
- Site visits to the following sites:
 - **Pump Stations**
 - North Perkins Pump Station
 - Manning Pump Station (Offline)
 - Third and Stallard Pump Station
 - South Perkins Pump Station
 - 32nd St. Pump Station
 - 19th Ave Pump Station
 - West Highway 51 Pump Station
 - Washington and Liberty Pump Station
 - Yost Pump Station
 - Karsten Creek Pump Station

- OSU Research Pump Station
- Hilltop Pump Station (Offline)
- **Water Storage Tanks**
 - North Perkins Water Tower
 - Manning Water Tower (Offline)
 - Third and Stallard Water Tower
 - 56th St. Water Tower
 - 44th St. Water Tower
 - Range Water Tower
 - Washington and Liberty Water Tower
 - Yost Water Tower
 - Ricebeck Water Tower (Offline)
 - Tan-Tara Water Tower (Offline)
 - Coyle Water Tower (Offline)
 - Central Water Tower
- **Distribution System Flushing Locations**
 - S. Western Road Flushing Line

Photos taken during the inspection are included in Appendix 1, Photograph Log. Sections of this inspection report have been redacted by EPA to maintain the security of the PWS.

System Description

The City of Stillwater Public Water System (System, City) is classified as a community water system. The System is a surface water system that sources its raw water from Kaw Reservoir, located approximately 36 miles from the WTP. Raw water is conveyed through a 36-inch pipe to the Facility. The System provides service to an estimated residential population of 53,000 individuals according to the Safe Drinking Water Information System (SDWIS) database. The System also sells water through 10 metered interconnections located in various areas. The 51 East and Payne Ct. Rural Water District 3 areas each have three interconnections (for a total of six) and Noble Ct., the Town of Morrison, Lone Chimney, and Otoe-Missouria each consist of one (for a total of 4). The City can also provide finished water to and receive finished water from the Oklahoma State University water system if needed. The City owns, operates, and maintains a conventional surface water treatment plant. The WTP is capable of producing 18 million gallons per day (MGD) of treated water and was producing approximately 6-7 MGD on average during the months prior to the inspection.

According to a technical memorandum of the distribution system that was generated by the System's contract engineer, Black & Veatch, the distribution system has 19 pressure zones. Treated, finished water is sent to either the "low side" or the "high side" of the distribution system via the high service pump station at the WTP. There are pressure relief valves (PRVs) located throughout the distribution system to reduce pressure coming from higher pressure zones. There are 12 pump stations located throughout the distribution system with 2 being offline during the inspection, and 12 water storage tanks with 4 being offline during the inspection. System representatives stated that the water storage tanks that were offline were being kept offline to preserve water quality but were being kept available for potential future use.

A process flow diagram of the WTP can be seen in Appendix 2, Exhibit 1, City of Stillwater WTP Process Flow Diagram.

Staffing Information/Contract Operations

The WTP is staffed in two 12-hour shifts, starting at 11:00 a.m. and 11:00 p.m., seven days per week (24/7). Shift change over occur at 10:30 a.m. or 10:30 p.m. During that time, operators that were on shift inform the operators arriving at the WTP of any events that occurred during the prior shift. The treatment plant operators and distribution staff are responsible for preventative maintenance (PM) activities and corrective maintenance (CM) activities (e.g., main breaks).

Section II – INSPECTION ACTIVITY SUMMARY

The EPA Inspection Team conducted an array of interviews and field activities to discuss and observe System operation and maintenance (O&M) and to assess the condition of drinking water system assets. The physical inspection occurred over three days. Previous Oklahoma DEQ sanitary survey reports were provided prior to the inspection. The information in this report is based on document review, conversations with System representatives, and observations made during this inspection.

Supervisory Control and Data Acquisition (SCADA) System

The City uses a SCADA system to monitor and trend data at the WTP and some, but not all, of the water towers and pump stations in the distribution system. Multiple water towers did not have telemetry that would enable operators to observe tank levels remotely. Operators were able to monitor the status of the 12 filters, including runtime, turbidity, and level through SCADA during the inspection (refer to [Appendix 1, Photographs 1 and 2](#)). “Flow” for each of the 12 filters was reading 0 gallons per minute (GPM) on the SCADA screen, and System representatives stated that it was not being monitored. Alarms are programed into the SCADA system to alert operators of failures in the treatment system and low tank levels (refer to [Appendix 1, Photograph 3](#)). Operators stated that chemical feed pumps were connected to SCADA, and that operators had the ability to change chemical feed rates remotely.

Asset Management/Computerized Management Maintenance System (CMMS)

The City does not have an asset management system or CMMS. Assets are not inventoried or categorized using unique ID numbers, and predictive maintenance is not being conducted on treatment assets or distribution system assets. Preventative maintenance is being conducted but is not formally tracked/scheduled. The City has redundant equipment (e.g., pumps, filters, recarbonization basins, ozone basins) and backup equipment such as chemical injection pumps, but unique details for the equipment such as past maintenance activity, equipment age, run hours, and location are not formally tracked using an asset management system. Preventative and corrective maintenance activities are also not tracked at the WTP, but maintenance activities that occur in the distribution system are recorded on a Microsoft Excel spreadsheet.

Call Log Sheets

System representatives explained that calls received by customers in the distribution system were received at City Hall during regular working hours. Calls that are received after hours are taken at the WTP, and an “After Hours Call Log” is completed. When calls are received, information such as caller name, address, and phone number are written down informally on lined paper, followed by the issue that the customer is calling about and the date/time the call was received. The EPA Inspection Team received call log sheets from System representatives that range from December 1, 2023, through June 1, 2024. The log sheets lacked detail on the issue that the customer was calling about and did not contain

notes regarding the response or the resolution to the issue. Therefore, it was unclear to the Inspection Team which complaints were resolved. The majority of the calls during the reviewed timeframe were regarding water leaks, but other examples of complaints during the reviewed timeframe include low pressure, off-color/taste water, and water being shut off. The log sheets are not included in this report because they contain sensitive information such as customer names, addresses, and phone numbers.

Lead and Copper Rule (LCR) Evaluation

While onsite, the EPA Inspection Team discussed LCR monitoring activities, including customer notifications and the System's 2023 sampling event. The City provided results from the last round of sampling, conducted June-August 2023, to the EPA Inspection Team (refer to Appendix 3, 2023 Stillwater LCR Results). The EPA Inspection Team also reviewed the City's "LCR Sample Sites" document during the onsite inspection (refer to Appendix 4, Stillwater LCR Sample Sites). The plan identifies the 55 sample sites, including their location, tier level, and customer service line material. Customer service line material was listed as "unknown" for every sample site. However, System representatives indicated that a contractor had recently conducted an Advanced Metering Infrastructure (AMI) project. During this project, System representatives asked the engineers to take inventory of service line material on both sides of the meter. Through this project, nearly every service line in the distribution system was evaluated. System representatives stated that there were approximately 100 connections left to evaluate. Of the service lines that were inventoried, there were no lead service lines.

Hydrant Flushing

The City lacks a formal hydrant flushing program. An inventory of all of the hydrants in the distribution system, as well as a list of dead-end mains was provided to the EPA Inspection Team, but there was no documentation provided to confirm the existence of a routine hydrant flushing program for water quality management. It appeared that the hydrant inventory pertained to the Fire Department's hydrant activities rather than maintenance/water quality activities.

Previous Sanitary Surveys

The EPA Inspection Team reviewed the most recent sanitary survey that was conducted by the Oklahoma DEQ on April 23-25, 2019. The sanitary survey identified several violations that required a schedule for correction. In addition to these violations, multiple deficiencies were identified that did not require a schedule for correction. The City initially responded to each of these items in a response dated January 29, 2020 (refer to Appendix 2, Exhibit 2, Stillwater Initial Non-Compliance Response – January 29 2020). However, Oklahoma DEQ found the response inadequate, citing the following deficiencies as unresolved:

- The Range Road Tower vent configuration was deemed unacceptable because it was susceptible to rainwater intrusion.
- There was a lack of an air gap between the fluoride mixing tank and the finished water line which supplies it.
- There was a lack of differential pressure-cell devices to monitor head loss across the individual filter media beds. Level sensors were implemented, but this did not resolve the deficiency.
- The City did not have a current DEQ-approved residuals management plan.

- LCR sample sites were not individually categorized by either Tier 1, Tier 2, or Non-Tier.
- Several deficiencies were identified with the steel clearwell.

A summary of these deficiencies can be seen in Appendix 2, Exhibit 3, OK DEQ Inadequate Response Letter – June 1, 2020.

The City responded to the inadequate response letter on June 30, 2020, resolving most of the deficiencies that were cited by Oklahoma DEQ (refer to Appendix 2, Exhibit 4, Stillwater Final Non-Compliance Response – June 30, 2020). During the EPA inspection that occurred June 4-6, 2024, the deficiencies that were identified during the last sanitary survey were discussed with System representatives. Deficiencies associated with the individual filters (head loss sensors, flow meters, and rate-of-flow controllers) had not been corrected at the time of the inspection. System representatives indicated that engineers had evaluated the feasibility of adding the required equipment to the individual filters and deemed that it would not be possible without a complete rehabilitation of the filters.

Previous Notices of Violation (NOVs)

The City received NOVs on February 9, 2023 and July 12, 2023. The February 9, 2023 NOV was in regard to three Running Annual Average (RAA) Total Organic Carbon removal ratio values that were less than 1.00. In the first quarter of 2022, the RAA removal ratio was 0.94. In the third quarter of 2022, it was 0.96, and 0.98 in the fourth quarter.

The July 12, 2023 NOV was in regard to total chlorine residuals of less than 2.0 mg/L at the point of entry (POE) or 1.0 mg/L at the most distant points in the distribution system. In February 2023, nine sample results were below 2.0 mg/L at the POE, and one sample result was below 1.0 mg/L at a distant point in the distribution system.

Risk and Resiliency/Emergency Response

The System used a contractor, Carollo, to complete its risk and resiliency and emergency response documents. The documents were signed and certified by City representatives on June 29, 2021. The EPA Inspection Team reviewed the documents and found they were complete, and fulfilled the requirements outlined in SDWA Sections 1433(a) and (b).

Continuous Monitoring Equipment Readings

Refer to Table 1 for the continuous monitoring equipment readings obtained during the inspection. The individual filter effluent (IFE) and combined filter effluent (CFE) readings were taken from SCADA on the first day of the inspection (June 4, 2024). All of the filters were in service during the inspection.

Table 1. Continuous Monitoring Equipment Readings

Parameter and Units	Location	Reading	Time/Date
Combined Filter Effluent Turbidity (CFE)	Combined Header Downstream of Filters	0.080 NTU	12:40 p.m. 6/4/2024
Individual Filter Effluent Turbidity (IFE)	Filter A	0.090 NTU	12:40 p.m. 6/4/2024
	Filter B	0.080 NTU	12:40 p.m. 6/4/2024
	Filter C	0.090 NTU	12:40 p.m. 6/4/2024
	Filter D	0.100 NTU	12:40 p.m. 6/4/2024
	Filter E	0.160 NTU	12:40 p.m. 6/4/2024
	Filter F	0.090 NTU	12:40 p.m. 6/4/2024
	Filter G	0.130 NTU	12:40 p.m. 6/4/2024
	Filter H	0.090 NTU	12:40 p.m. 6/4/2024
	Filter AA	0.140 NTU	12:44 p.m. 6/4/2024
	Filter BB	0.090 NTU	12:44 p.m. 6/4/2024
	Filter CC	0.230 NTU	12:44 p.m. 6/4/2024
	Filter DD	0.170 NTU	12:44 p.m. 6/4/2024

The City provided the EPA Inspection Team with instantaneous IFE and CFE turbidity readings from December 6, 2023 through June 6, 2024 (last 6 months' worth) taken at 15-minute intervals. The readings were entered into EPA's Surface Water Treatment Rule Data Analysis Tool, and the following table was generated (refer to Table 2).

Table 2. CFE Turbidity Data

Results for CFE 95th Percentile				
Month	CFE Measurements <0.35 NTU	Total CFE Measurements	Percentage <0.35 NTU	Exceeds 95th Percentile Limit? (Yes or No)
Dec-23	2439	2439	100.0%	N
Jan-24	2976	2976	100.0%	N
Feb-24	2773	2784	99.6%	N
Mar-24	2970	2972	99.9%	N
Apr-24	2880	2880	100.0%	N
May-24	2975	2976	100.0%	N
Jun-24	538	538	100.0%	N

Onsite Laboratory

A separate EPA laboratory audit was conducted on June 6, 2024, as a component of the inspection by members of EPA Region 6. The full report that was generated from the audit, including images and observations/areas of concern can be seen in [Appendix 5, EPA Laboratory Audit – June 6, 2024](#).

FACILITY/SYSTEM WALKTHROUGH

City of Stillwater Water Treatment Plant

The walkthrough of the WTP began at the 4 million gallon (MG) raw water ground storage tank. System representatives indicated that water is pumped from the Kaw Lake Reservoir through a 36 mile, 36-inch steel intake line. The City has one raw water source (Kaw Lake Reservoir) and is in the process of seeking funds to create another line to a lake that is closer to the WTP. System representatives stated that the intake structure at the second lake already exists, and water rights have already been established. The 36 mile intake line has been repaired several times, including leak repairs ranging from pencil-sized to substantially large repairs. The EPA Inspection Team asked for information associated with leaks in the raw water line, and System representatives stated that there were approximately 20 repairs on the line in the previous 6 months leading up to the inspection, with the most recent repairs occurring in May 2024.

The EPA Inspection Team reviewed an invoice dated May 28, 2024, relating to line repairs (refer to [Appendix 2, Exhibit 6, Raw Water Line Repair Invoice – May 28 2024](#)). The invoice included line items such as “leak being larger than 1 inch in diameter,” “severe pitting was observed in an exposed portion of the raw waterline near the leak,” and “washout area fill.” System representatives stated that they could shut down the raw water intake for approximately 6 hours based on the capacity of the existing

raw water ground storage tank. If the second intake line was constructed, they would be able to shut down the Kaw Lake Reservoir intake for approximately one month.

Next, a chemical injection line was observed inside of one of the three meter vaults. There were chemical injection ports for chlorine, ferric sulfate, polymer, and ammonia, but System representatives stated that only ferric sulfate and polymer were being injected into the raw water line. The ferric sulfate and polymer day tanks were observed, as well as the chemical feed pumps. There were spare chemical feed pumps on a shelf next to the tanks.

The three solids contact units (SCUs) were observed next. System representatives explained that only the north and middle SCUs were operating during the inspection, with the south SCU in standby mode (refer to [Appendix 1, Photographs 4, 6, and 7](#)). There was water in the south SCU during the inspection, and System representatives indicated that a small amount of water was leaking from the SCUs into the next step in the treatment process due to a leaky valve. System representatives explained that lime was only injected into the middle SCU, and that the water from the SCUs blended in a common line prior to entering the recarbonization basins. Settled solids from the SCUs is sent to one of seven onsite recovered water lagoons.

The two parallel recarbonization basins were observed next (refer to [Appendix 1, Photograph 8](#)), followed by the filters. There were 12 total dual media filters. Eight of the filters were old and lacked an air scour function but had a surface wash function. The four newer filters had an air scour function to assist with backwashing. System representatives stated that they were unable to verify the individual flow meters for each filter, and they were unable to control the flow going through the filters. Additionally, the filters lacked differential pressure head loss sensors. The filter pipe gallery where the IFE turbidity monitoring points were located was positioned near the filters. The pipe gallery was located in a vault below ground, and access was restricted because the area was a confined space. The EPA Inspection Team was unable to enter the vault because of the confined space restrictions. However, System representatives provided images of the inside of the vault, as well as IFE and CFE turbidimeter digital readings to the EPA Inspection Team following the conclusion of the inspection (refer to [Appendix 1, Photograph 10](#)). The images showed that the turbidity sample tubes had an air gap, resolving a deficiency that was discussed in the 2019 OK DEQ sanitary survey (refer to [Appendix 1, Photograph 11](#)). Because of the access restrictions, System representatives stated that a team member only entered the vault once per month.

Following the filters, the two parallel ozone basins were observed (refer to [Appendix 1, Photograph 12](#)), followed by the fluoride storage and injection room. The fluoride injection system was offline for maintenance during the inspection. The chemical injection vault located upstream of the clearwell was observed (refer to [Appendix 1, Photograph 13](#)). The vault was filled with water and the chemical injection line was completely submerged. There was a strong ammonia smell in the area around the vault. The clearwell was observed, and System representatives provided the EPA Inspection Team with pictures of the clearwell roof that were taken after the inspection (refer to [Appendix 1, Photograph 14](#)). The clearwell has a total capacity of 4.0 MG. The total capacity of the clearwell is used for contact time considerations, and documented as the fillable level.

The high service pump station was observed next. The pump station contained four pumps that deliver finished water to the "low" side of the distribution system and three pumps that deliver finished water to the "high" side of the distribution system. One of the four low side pumps was wrapped in plastic because of a small leak. System representatives stated that the pump was scheduled for replacement.

The low side pumps send flow to the Central Tower and the high side pumps send flow to the Perkins Tower. Two 250 horsepower (hp) backwash pumps were also present in the pump station. System representatives explained that backwashes occur based on time (approximately every 160 hours) or if turbidity levels get too high. Backwash water is sourced from the 4.0 MG clearwell. The POE total chlorine level was observed at the high service pump station, and it was 3.60 mg/L at 9:06 a.m. on June 5, 2024, the second day of the inspection (refer to [Appendix 1, Photograph 16](#)).

Asset Walkthrough

During the asset walkthrough component of the inspection, 12 pump stations and 12 water storage tanks were observed (see **Section I – INTRODUCTION** of this report). Two of the pump stations were offline during the inspection, and four of the water towers were offline during the inspection. Although the pump stations and towers were offline, they were not physically disconnected from the system and therefore were still evaluated against the Oklahoma Administrative Code Title 252 chapters 626 and 631, as well as the SDWA. Areas of Concern pertaining to the pump stations and water towers can be seen in **Section III – AREAS OF CONCERN** below.

An above-ground flushing line extending off of a distribution system line running parallel to S. Western Road was observed in addition to the pump stations and water towers (refer to [Appendix 1, Photographs 32 through 41](#)). There were several flushing lines along S. Western Road. The flushing line that the EPA Inspection Team observed had a rubber hose attached to the end without backflow prevention. System representatives stated that the hose was used to prevent ground erosion around the base of the flushing line. The hose extended several feet into a corrugated pipe that had water running through it. The end of the hose was resting in the water, creating a potential cross connection. An inspection of the hose documented a flow of water being discharged at less than one gallon per minute rate. In addition to the potential cross connection concern, the valve box that controlled flushing activities had a lid that was not properly seated when the EPA Inspection Team arrived. After these observations were made to System representatives, the distribution team members severed the hoses, and an inspector verified that the hoses had been removed and there was no discharge from the flushing line (refer to [Appendix 1, Photographs 42 through 44](#)). The valve box lid was also placed on properly. Google Earth street view imagery from S. Western Road shows that the hose was attached to the flushing line when the image was taken in March 2022 (refer to [Appendix 2, Exhibit 5, Flushing Line Photo – March 2022](#)). Additional detail regarding this observation is provided below in **Section III – AREAS OF CONCERN**.

In addition to the flushing line that was observed next to S Western Road, multiple air relief valves were observed that extended above ground throughout the distribution system (refer to [Appendix 1, Photographs 45 and 46](#)). Additionally, a second flushing line was observed that was capped and did not appear to be a cross connection (refer to [Appendix 1, Photograph 47](#)).

Section III – AREAS OF CONCERN

Work Orders/Asset Management

Title 252, Chapter 626, Section 3-7(2)(c)(6), Plans and specifications states “Specifications must provide for an Operation and Maintenance (O & M) Manual for the operation and maintenance of the public water supply system. The O & M Manual shall include at a minimum:

- (A) System Treatment Requirements;
- (B) Description, Operation and Control of the Water Treatment Plant;
- (C) Control of Unit Processes;
- (D) Laboratory Testing;
- (E) Common Operating Problems;
- (F) Start-Up Testing and Procedures;
- (G) Standard Operating Procedures;
- (H) Alternative and Emergency Operations;
- (I) Emergency Shutdown Operations and Emergency Response;
- (J) Records Control and Retention;
- (K) Safety;
- (L) **Public Water Supply System Maintenance Records;**
- (M) Storeroom and **Inventory System;** and
- (N) Utilities.”

Area of Concern 1. The following observations were made in regard to the City’s work order/asset management programs:

- a. Public Water Supply System maintenance records (including preventative and corrective maintenance) for the water treatment plant and the distribution system were not complete. Some maintenance activities that are completed in the distribution system are documented in a Microsoft Excel sheet, but pending maintenance activities are not documented. Service orders/customer complaints are recorded on hard copy sheets but are not complete with details describing the uniqueness of the issue, the actions taken, or dates completed.

The EPA Inspection Team observed notes regarding maintenance that occurred on a variable frequency drive (VFD) pump inside of the Third and Stallard Pump Station (refer to [Appendix 1, Photograph 25](#)). According to the notes, a communication failure occurred with the pump in May 2024. The notes lack detail regarding specific maintenance that was conducted, and the maintenance activities are not recorded in a work order system.

- b. The City lacks an asset management/inventory system identifying equipment operational hours/useful life expectancy, maintenance history, equipment inventory, and anticipated replacement budget/plan.

Cross Connection Control

Title 252, Chapter 626, Section 5-15(a), Cross connections states “Avoid cross connections in the system.

- (1) Do not allow a physical connection between a line carrying a public drinking water supply and a line carrying water of unknown or questionable quality.
- (2) Do not allow connections from any PWS system to any device or system that poses a health threat unless it is equipped with an air gap of at least 6 inches or two pipe diameters, whichever is larger, above the overflow or drain pipe. The installation of a reduced pressure zone backflow prevention device will be considered in lieu of an air gap. To allow maintenance on the backflow prevention device,

the design shall include a diversion line with equal backflow prevention. Do not locate backflow prevention devices in a pit or vault where they can become submerged. A fire suppression system is not considered a hazardous water supply.

(3) Do not allow a cross-connection between a public water system and any private water system.

(4) Provide an air gap at all points where finished water is discharged to a drain.”

Area of Concern 2. The City lacks a formal cross connection control program, and a potential cross connection was observed during the inspection. Specifically, there were multiple above-ground flushing lines extending off of a distribution system line running parallel to S. Western Road. One of the flushing lines had rubber hose attached without backflow prevention (refer to [Appendix 1, Photograph 32](#)). The hose extended several feet down into a corrugated pipe that had water running through it (refer to [Appendix 1, Photographs 34 and 35](#)). The end of the hose was resting in the water, and water was observed to be flowing out of the hose at a rate of less than one gallon per minute (refer to [Appendix 1, Photographs 36 through 41](#)). Google Earth street view imagery taken from S. Western Road shows that the hose was connected in March 2022 (refer to [Appendix 2, Exhibit 5, Flushing Line Photo – March 2022](#)). Following the observation, distribution team members severed the hose from the flushing line, and an inspector verified that the hose had been removed (refer to [Appendix 1, Photographs 42 and 44](#)).

Proper Operation and Maintenance

Title 252, Chapter 631, Section 3-1(a), PWS criteria states “All systems must properly operate, in accordance with an Operations and Maintenance manual as required by OAC 252:626-3-7. All systems must maintain each unit to provide treatment of the water in accordance with the DEQ approved plans and specifications, in accordance with the purpose for which the units were designed and according to the terms of their permits. Permits may contain more stringent provisions than contained in the rules to meet the requirements of the provisions of 40 CFR adopted by reference in this chapter. Employees must be trained in the proper operation and maintenance of the system.”

Area of Concern 3. The following observations were made in regard to proper operation and maintenance at the City of Stillwater Water Treatment Plant:

- a. There was a strap supporting the motor in the center of the offline South SCU (refer to [Appendix 1, Photograph 7](#)).
- b. There were multiple cracks in the corner of the concrete recarbonization basin that appeared to be weeping (refer to [Appendix 1, Photograph 8](#)). Other cracks in the concrete structure had been filled in with sealant to prevent weeping.
- c. System representatives stated that the flow meters associated with each of the filters were unable to be verified/calibrated due to their positioning in an underground vault, making them difficult/impossible to access (refer to [Appendix 1, Photograph 10](#)). In addition, this area is classified as a confined space, and System representatives stated it is only entered once a month.

- d. There were numerous cracks in the concrete roof of the ozone basin (refer to Appendix 1, Photograph 12). It appeared that the cracks had been filled at a point in time, but there were cracks in the caulking as well.
- e. The chemical injection vault where ammonia is injected into the produced water line (downstream of the ozonation process) was completely flooded, submerging the injection port (refer to Appendix 1, Photograph 13). There was a strong ammonia smell coming from the vault.

Area of Concern 4.

The following observations were made in regard to proper operation and maintenance at the pump stations and finished water storage towers in the distribution system:

- a. One of the impellers associated with one of the pumps at the 32nd St. Pump Station was spinning in reverse when the EPA Inspection Team arrived onsite (refer to Appendix 1, Photograph 30). The SCADA system indicated that the pump was not running at the time. After the observation was made, operators found that the seal of the check valve on the pump discharge line had deteriorated and needed to be replaced. The pump and discharge line were taken offline while repairs were being made. A second check valve at the pump station was making a periodic clicking noise; it was unknown what was causing the noise. It appeared that the check valve was not seated properly. System representatives stated that operators were planning to take the pump and discharge line offline to evaluate the extent of the issue.
- b. The floor of the 19th Ave. Pump Station was cracked and appeared to be settling and separating from the wall due to ground settling.
- c. A drainpipe extending from the floor of the 44th St. Water Tower was filled with black insects (refer to Appendix 1, Photograph 49). It appeared that the flapper for the drain line had been wired open previously. When this observation was made, the wire was removed, and the flapper was seated tightly to the pipe.
- d. The meter vault outside of the 44th St. Water Tower had one inch of standing water inside of it and staining on the walls of the vault indicated past water level heights of 12-16 inches high (refer to Appendix 1, Photograph 50). It was unclear why the vault was flooding, since a sump pump was present inside of the vault. The high water marks inside of the vault were approximately 12 inches from an electrical outlet inside of the meter vault.
- e. There was a heavy buildup of moisture on the control panel inside of the 44th St. Water Tower base due to humidity within the base (refer to Appendix 1, Photograph 52). The EPA Inspection Team had the City representatives check the inside of the panel, which did not contain moisture.
- f. The structural bolts and nuts around the bases of the Yost Water Tower and Ricebeck Water Tower (offline) did not appear to be properly seated on the tank anchor (refer to Appendix 1, Photographs 64 and 69).

- g. The bolts that were designed to anchor the base of the Coyle Water Tower (offline) to the concrete pad that it was positioned on were not torqued down (refer to Appendix 1, Photographs 74 through 76). System representatives did not know when/how the bolts became loosened. There was also some corrosion/paint cracks around the bolts. Additionally, some of the bolts appeared to be positioned in an area where the concrete foundation had failed.
- h. The meter vault adjacent to the Tan-Tara Water Tower (offline) was completely flooded during the inspection, submerging all of the assets inside of the vault (refer to Appendix 1, Photograph 71).
- i. The floor of the Karsten Creek pump station appeared to be failing due to heavy corrosion (refer to Appendix 1, Photograph 79). The pump station was an underground, vault station and appeared to be a metal "can" style station.
- j. There were voids in the concrete walls surrounding the pump line in the Hilltop pump station (offline) (refer to Appendix 1, Photograph 80). The voids created a possible entry point for water into the pump station vault, and the electric motors for the pumps were positioned near the base of the vault.

Security

Title 252, Chapter 626, Section 5-4 (4), Security protection states "Public water supply systems shall provide the following security measures to protect water treatment plants, finished water storage facilities (which include laboratories, chemical buildings, administration buildings and storage buildings):

- (1) Fencing at least six (6) feet high of galvanized steel chain link, number nine gauge with two inch or smaller diameter mesh, and posts not more than ten feet (10') separation center-to-center in post-holes at least thirty inches (30") deep, back-filled with concrete that extends two inches (2") above grade and crowned to shed water;
- (2) Three-strand barbed wire shall be installed atop the fence along its entire length;
- (3) Gates shall be constructed of similar material as the fence or stronger;
- (4) "No Trespassing" signs shall be installed at least at fifty foot (50') intervals along the entire length of the fence and at the location of all intake structures. The signs shall contain the following information:
 - (A) "Tampering with a Public Water Supply is a federal crime", and
 - (B) "If you see a problem contact the following:
 - (i) Contact name,
 - (ii) Contact address,
 - (iii) Contact phone number"; and
- (5) Locks shall be installed on all gates, entry doors, manholes, other access points, water wells and pumping stations. Electric gates shall be considered equivalent to locked gates."

Area of Concern 5. The following observations were made regarding physical security at the WTP:

- a. "No Trespassing" signs were not posted around the perimeter fence at the WTP.
- b. [REDACTED]

Area of Concern 6. The following observations were made regarding perimeter fences surrounding water storage towers in the distribution system:

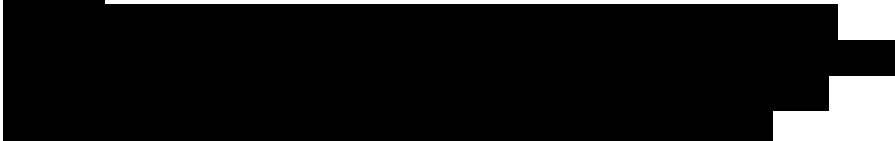
- a. 
- b. The barbed wire at the top of the perimeter security fence surrounding the Ricebeck Water Tower (offline) was damaged (refer to Appendix 1, Photograph 68).
- c. The perimeter fence surrounding the Coyle Water Tower (offline) was damaged/missing in places due to construction activities occurring around the tower (refer to Appendix 1, Photograph 78). The distribution system pipes were exposed in open trenches.

Title 252, Chapter 626, Section 17-1(f)(2), Protection, Protection from trespass states “Provide fencing, locks on access manholes, and other necessary precautions to prevent vandalism, pilfering, trespassing, or sabotaging.”

Area of Concern 7. The following observations were made regarding vegetation growing along perimeter fence lines at the WTP and field assets:

- a. There was vegetation growing around and against the perimeter security fence at the WTP in multiple places.
- b. There were golf balls and broken glass near the base of the Third and Stallard Water Tower (refer to Appendix 1, Photograph 24). System representatives stated that the residents of the house directly next to the tank would throw bottles over the fence against the side of the tank, and that people would hit golf balls toward the tank. System representatives also stated that the police had dealt with the security issues coming from the house next to the tank. There were also tree branches growing over the perimeter fence surrounding the Third and Stallard Tower and pump station (refer to Appendix 1, Photograph 21).
- c. There were trees/vegetation growing on and around the perimeter fence surrounding the Tan-Tara Water Tower (offline) (refer to Appendix 1, Photograph 70).

Area of Concern 8. The following observations were made at the 56th St. Water Tower:

- a. 
- b. 

Area of Concern 9. There was a ladder resting on the ground next to the Yost Water Tower (refer to Appendix 1, Photograph 65). The purpose of the ladder was unknown; however, it would grant access to the tank's ladder.

Protection of Finished Water

Title 252, Chapter 626, Section 17-1(f)(1), Protection, Cover of finished water storage states "Storage of treated water must have a watertight roof or cover, which will exclude birds, animals, insects and excessive dust. Locate the top of all finished water storage structures above possible flood elevations."

Area of Concern 10. The hatchways to the wet well that was positioned at the effluent end of the filters at the WTP lacked watertight seals (refer to Appendix 1, Photograph 9). Additionally, there was water ponding around the hatchways.

Area of Concern 11. The rubber gasket around the perimeter of the hatchway leading to the 4.0 MG clearwell at the WTP had fallen off in places. It was unclear whether a watertight seal could be created without the gasket (refer to Appendix 1, Photograph 14).

Title 252, Chapter 626, Section 11-3(g)(2), Storage of chemicals states "Separate the chemical storage rooms from the feed machine room. Liquid chemicals may be stored in the feed machine rooms where containment for spills is provided."

Area of Concern 12. The following observations were made in regard to chemical storage at the WTP:

- a. There were 35-pound buckets of petroleum based gear oil sitting on decks of the North and South SCUs at the WTP (refer to Appendix 1, Photographs 5 and 7).
- b. There were multiple chemical barrels and containers being stored on the ground without secondary containment, inside of the high service pump station (refer to Appendix 1, Photograph 15). The chemical barrels appeared to be empty at the time of the inspection.

Title 252, Chapter 626, Section 11-1, Chemical application states "Chemicals must be listed by NSF or UL as meeting ANSI/NSF Standards 60 and 61. All containers shall be labeled with the following information: chemical name, chemical purity, chemical concentration, supplier name and supplier address. Do not apply any chemical to drinking water unless specifically permitted by the DEQ."

Area of Concern 13. The 35-pound barrel of gear oil (Phillips 66 80W-90) that was sitting on the deck of one of the solids contact units at the WTP is not listed as NSF certified (refer to Appendix 1, Photograph 5).

Threaded Hose Taps

Title 252, Chapter 626, Section 15-5(d)(1)(C), Gauges, meters and sampling cocks states “Equip each pump with the following: smooth nosed sampling cocks on suction line and discharge line of booster pumps.”

Area of Concern 14. The following observations were made regarding threaded hose taps seen in the distribution system:

- a. There was a threaded hose tap without backflow prevention extending off of one of the pump lines inside of the Manning pump station (offline; refer to Appendix 1, Photograph 19).
- b. There were multiple threaded hose taps without backflow prevention extending off of the pump lines inside of the Third and Stallard pump station (refer to Appendix 1, Photographs 26 and 27). One of the taps had a hose attached to it without backflow prevention.
- c. There was a threaded hose tap without backflow prevention extending off of one of the pump lines inside of the Washington and Liberty pump station (refer to Appendix 1, Photograph 55).
- d. There was a threaded hose tap without backflow prevention extending off of one of the lines inside of the 44th St. Water Tower (refer to Appendix 1, Photograph 51).
- e. There was a threaded hose tap without backflow prevention extending off of one of the pump lines inside of the Karsten Creek pump station (refer to Appendix 1, Photograph 79).
- f. There was a threaded hose tap without backflow prevention extending off of one of the lines at the Coyle Water Tower (offline) (refer to Appendix 1, Photograph 77).
- g. There was a threaded hose tap without backflow prevention extending off of one of the lines inside of the Central Water Tower (refer to Appendix 1, Photograph 81).

Pressure Gauges

Title 252, Chapter 626, Section 15-5(d)(1)(A) and (B), Gauges, meters and sampling cocks states “Equip each pump with the following:

- (A) standard pressure gauge on its discharge line, and
(B) compound gauge on its suction line.”

Area of Concern 15. The following observations were made regarding pressure gauges on pump lines in the distribution system:

- a. The City lacked compound pressure gauges (measuring both positive and negative pressure) on all of the observed suction lines inside of their pump stations.
- b. One of the pump lines in the Third and Stallard Pump Station was missing a suction side pressure gauge (refer to Appendix 1, Photograph 28).

- c. Both of the pumps in the Washington and Liberty Pump Station were missing both suction and discharge side pressure gauges (refer to Appendix 1, Photograph 54).
- d. One of the pressure gauges on the suction side of one of the West Highway 51 Pump Station pump lines was not functional (refer to Appendix 1, Photograph 53). An operator opened a sample tap on the line to verify that water was flowing through the discharge line, and it was confirmed that the line was pressurized even though the pressure gauge was reading <0 psi.

Pump Capacity

Title 252, Chapter 626, Section 15-3(a)(1), Pumps states “All pumping stations shall have a minimum of two (2) pumping units. With any pump out of service, the remaining pump(s) shall be capable of providing the maximum pumping demand of the system.”

Aera of Concern 16. There was only one functional pump present inside of the Manning Pump Station (offline; refer to Appendix 1, Photograph 20).

Air Relief Ports

Title 252, Chapter 626, Section 19-1(e), Air relief and blow-off valves states “Locate air relief valves at high points in lines where air can accumulate. Do not use automatic air-relief valves where flooding of the valve exhaust may occur. Locate sufficiently sized blow-offs at low points of large mains to effectively remove accumulated sediments. Extend the open end of the exhaust line from automatic valves to at least 1 foot above grade and terminate with a screened, downward-facing elbow. Do not connect air reliefs or blow-offs directly to any sewer.”

Area of Concern 17. The following observations were made regarding downturned exhaust lines extending off of air relief ports:

- a. The South Perkins Road Pump Station lacked downturned exhaust lines extending off of air relief ports (refer to Appendix 1, Photograph 29).
- b. The Yost Pump Station pump lines lacked air relief ports and downturned exhaust lines (refer to Appendix 1, Photograph 60).

Title 252, Chapter 626, Section 15-2(a)(1), Pumping station building, General construction of building states “Locate pump station buildings on a concrete floor at least 6 inches above the surrounding surface and graded to prevent the entrance of water.”

Area of Concern 18. There was a hill slope behind the Yost pump station, and it appeared that water flowed down the slope toward the pump station during rain events (refer to Appendix 1, Photograph 62). The building foundation was not 6 inches above the surrounding surface and graded to prevent the entrance of water. There was erosion behind and next to the pump station.

Distribution System Pressure

Title 252, Chapter 626, Section 15-3(d), Booster pumps states “Locate and control booster pumps used to increase water pressure in the distribution system so that in normal operation they will not reduce pressure below 25 psi within the distribution system or below 20 psi at any pump suction. Provide automatic cutoff of the pump when the pressure drops below 20 psi. Equip pumps with controls to prevent excessive cycling. Capacity shall meet instantaneous peak demands with the largest pump out of service. Provide a diversion line and valves to permit removal of the pump without disrupting water service. Private booster pumps shall not be allowed for any individual residential service from the public water supply.”

Area of Concern 19. The following observations were made regarding pressures lower than 25 psi seen in the distribution system:

- a. A pressure gauge on the wall of the Washington and Liberty pump station was reading 15.248 psi during the inspection (refer to [Appendix 1, Photograph 56](#)). System representatives could not confirm where the pressure reading was coming from, but it appeared that the pressure was being read from the suction line entering the pump station.
- b. The suction side pressure gauge at the Yost pump station was showing a pressure that appeared to be just below 25 psi (based on photographic imagery from outside the confined space of the vault) (refer to [Appendix 1, Photograph 61](#)).

Ground Grading – Water Storage Tanks

Title 252, Chapter 626, Section 17-1(p), Grading states “Grade the area surrounding a ground level structure to prevent surface water from standing within 50 feet of the structure.”

Area of Concern 20. The following observations were made regarding the grading of the ground surrounding water storage tanks in the distribution system:

- a. There was water pooling on the concrete drainage pad next to the North Perkins Water Tower, and it appeared that the concrete had settled so that it was sloped toward the tank (refer to [Appendix 1, Photograph 17](#)).
- b. Ponding of water was occurring near the base of the Third and Stallard Water Tower (refer to [Appendix 1, Photograph 22](#)). Water was also pooling in the concrete drainage pad next to the tower (refer to [Appendix 1, Photograph 23](#)).
- c. Ponding water was observed near the base of the Yost Water Tower (refer to [Appendix 1, Photograph 63](#)).
- d. The ground surrounding the base of the Ricebeck Water Tower (offline) was sloped toward the tower (refer to [Appendix 1, Photograph 69](#)).
- e. The ground surrounding the base of the tower was sloped toward the Central Water Tower in areas (refer to [Appendix 1, Photograph 83](#)).

Water Storage Tank Construction

Title 252, Chapter 626, Section 17-1(h) (3), Overflow states “Provide all water storage structures with an overflow that terminates at an elevation between 12 and 24 inches above the ground surface, and release water over a drainage inlet structure or splash plate. Equip the ends of the pipes with flex gates.”

- Area of Concern 21.** The following observations were made regarding overflow lines at water storage tanks in the distribution system:
- a. The flex gate covering the overflow line of the North Perkins Water Tower did not form a tight seal (refer to [Appendix 1, Photograph 18](#)). There was an approximately 0.5-inch gap between the end of the pipe and the flapper.
 - b. The flex gate covering the overflow line of the Third and Stallard Water Tower did not form a tight seal (refer to [Appendix 1, Photograph 23](#)). There was an approximately 1-inch gap between the end of the pipe and the flapper.
 - c. The overflow pipe at the 44th St. Water Tower was downturned and contained a mesh screen, but it was not equipped with a flex gate (refer to [Appendix 1, Photograph 48](#)). The mesh screen was ripped.
 - d. The overflow pipe at the Range Water Tower was downturned and contained a mesh screen, but it was not equipped with a flex gate.
 - e. The flex gate at the end of the overflow line of the Washington and Liberty Tank was not seated properly (refer to [Appendix 1, Photograph 58](#)). There was an approximately 1-inch wide gap between the flapper and the pipe. There were animal/insect nests inside of the overflow pipe (refer to [Appendix 1, Photograph 59](#)). It appeared the mesh screen that was covering the end of the overflow pipe had ripped and fallen off.
 - f. The overflow pipe at the Central Water Tower was downturned and contained a mesh screen, but it was not equipped with a flex gate (refer to [Appendix 1, Photograph 82](#)).

- Area of Concern 22.** The following observations were made regarding splash pads beneath the terminus of overflow lines at water storage tanks in the distribution system:
- a. The overflow pipe for the Washington and Liberty Water Tower terminated approximately 2 inches above the concrete splash pad (refer to [Appendix 1, Photograph 58](#)).
 - b. There was no splash pad beneath the end of the overflow pipe at the Yost Water Tower (refer to [Appendix 1, Photograph 66](#)).

Title 252, Chapter 626, Section 17-1(k), Roof and sidewall states “Make the roof and side walls of all structures watertight with no openings except properly constructed vents, manholes, overflows, risers, drains, pump mountings, control ports, and piping for inflow and outflow.”

- Area of Concern 23.** The following observations were made regarding the sidewalls and bases of water storage tanks in the distribution system:
- a. There was moisture accumulating at the metal base of the Yost Water Tower and the concrete pad that the tank was sitting on (refer to [Appendix 1, Photographs 63 and 64](#)). It appeared that the tank was leaking from the base, but this was unable to be verified. The base of the tank lacked caulking or a seal.
 - b. The caulking surrounding the base of the Washington and Liberty Tank was worn away and had failed in places (refer to [Appendix 1, Photograph 57](#)).
 - c. Caulking was missing from the joint between the metal base of the Ricebeck Water Tower (offline) and the concrete pad it was sitting on (refer to [Appendix 1, Photograph 69](#)).
 - d. Caulking was missing from the joint between the metal base of the Tan-Tara Water Tower (offline) and the concrete pad it was sitting on (refer to [Appendix 1, Photograph 72](#)).
 - e. There was an open pipe at the base of the Tan-Tara Water Tower (offline) that provided direct access into the tank (refer to [Appendix 1, Photograph 73](#)). A broken casing and ball valve were sitting next to the open pipe. Insects were observed crawling around and into the pipe.
 - f. Caulking was missing from the joint between the metal base of the Coyle Water Tower (offline) and the concrete pad it was sitting on (refer to [Appendix 1, Photograph 74](#)).

Tank Telemetry/Level Indicators

Title 252, Chapter 626, Section 17-4(2), Distribution Storage, Level Controls states “Provide adequate controls to maintain levels in distribution system storage structures.

(A) Control pumps by sensing tank water levels and transmitting the signal by telemetering equipment when any appreciable head loss occurs in the distribution system between the pump and the storage structure.

(B) Provide altitude valves or equivalent controls for a second and subsequent structures on the system based on the hydraulic profile.

(C) Provide overflow and low-level warnings or alarms.”

- Area of Concern 24.** The following observations were made regarding telemetry and level indicators at water storage tanks seen in the distribution system:
- a. There was no level indicator at the Ricebeck Water Tower (offline), and there was no telemetry tied into SCADA associated with the tower (refer to [Appendix 1, Photograph 68](#)). System representatives stated that when the tower was online, the level of the tank had to be calculated using the level of other tanks in the distribution system.
 - b. There was no level indicator at the Coyle Water Tower (offline), and there was no telemetry tied into SCADA associated with the tower. System representatives stated that when the tower was online, the level of the

tank had to be calculated using the level of other tanks in the distribution system.

Closing Conference

On June 6, 2024, the EPA Inspection Team met with James Driskel, the City of Stillwater's Water Utilities Director, Freddy Pitts, the WTP Supervisory, Jason Tyler, the Plant Manager director at approximately 2:45 p.m. The EPA Inspection Team reviewed observations with the System representatives and explained that the observations were preliminary and did not constitute any formal compliance determinations.

Section IV – FOLLOW UP

Following the conclusion of the inspection, the EPA Inspection Team received six months' worth of customer call logs/complaints, images of the filter pipe gallery, and images of the clearwell roof.

Section V – LIST OF APPENDICES

Appendix 1 – Photograph Log – 83 Photos

Appendix 2 – Exhibit Log

- Exhibit 1 - City of Stillwater WTP Process Flow Diagram
- Exhibit 2 - Stillwater Initial Non-Compliance Response – January 29 2020
- Exhibit 3 - OK DEQ Inadequate Response Letter – June 1, 2020
- Exhibit 4 - Stillwater Final Non-Compliance Response – June 30, 2020
- Exhibit 5 – Flushing Line Photo – March 2022
- Exhibit 6 – Raw Water Line Repair Invoice – May 28 2024

Appendix 3 – 2023 Stillwater LCR Results

Appendix 4 – Stillwater LCR Sample Sites

Appendix 5 – EPA Laboratory Audit – June 6, 2024

Appendix 1

Photograph Log



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY Photograph Log

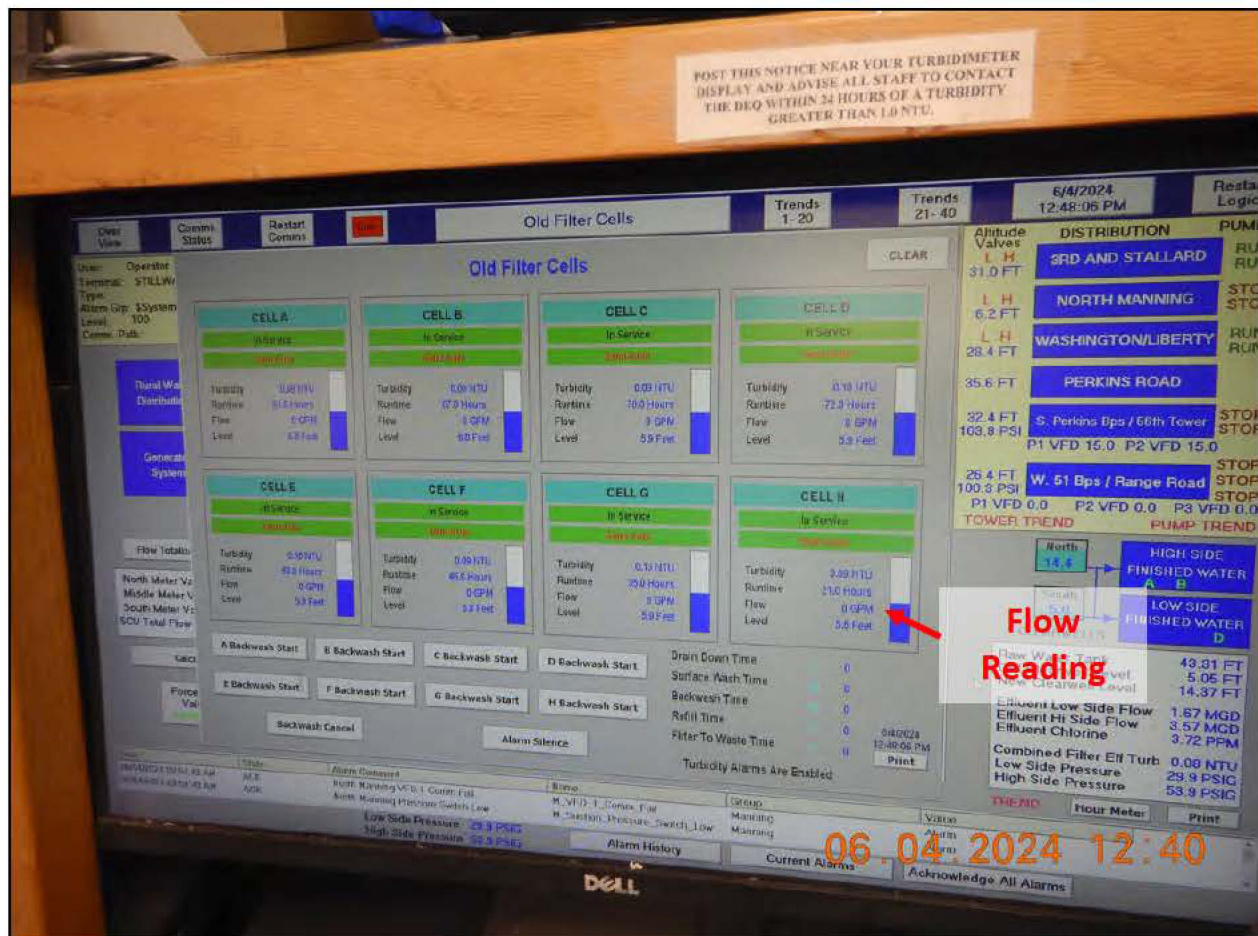
Photo No. 1

Location: City of Stillwater Public Water System

City of Stillwater

County: Payne

State: Oklahoma



Photograph 1. 6/4/2024 12:40 PM DSCN0657.JPG

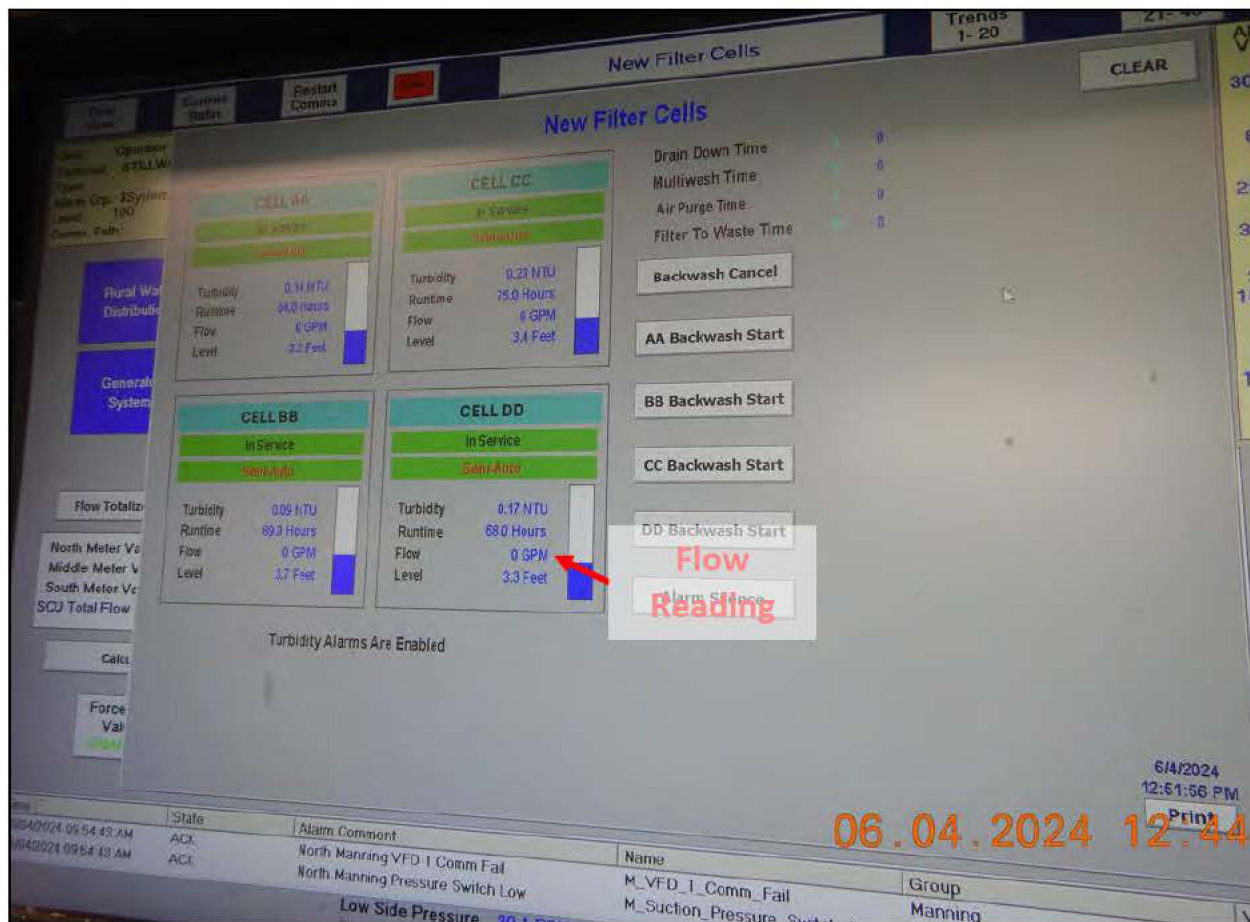
WTP SCADA Screen View of the City's SCADA screen showing the status of the eight older filters at the WTP. Turbidity, runtime, and level of the filters was being monitored, but flow was not monitored or recorded.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY Photograph Log

Photo No. 2

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 2. 6/4/2024 12:44 PM DSCN0658.JPG

WTP SCADA Screen View of the City's SCADA screen showing the status of the four newer filters at the WTP. Turbidity, runtime, and level of the filters was being monitored, but flow was not monitored or recorded.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY Photograph Log

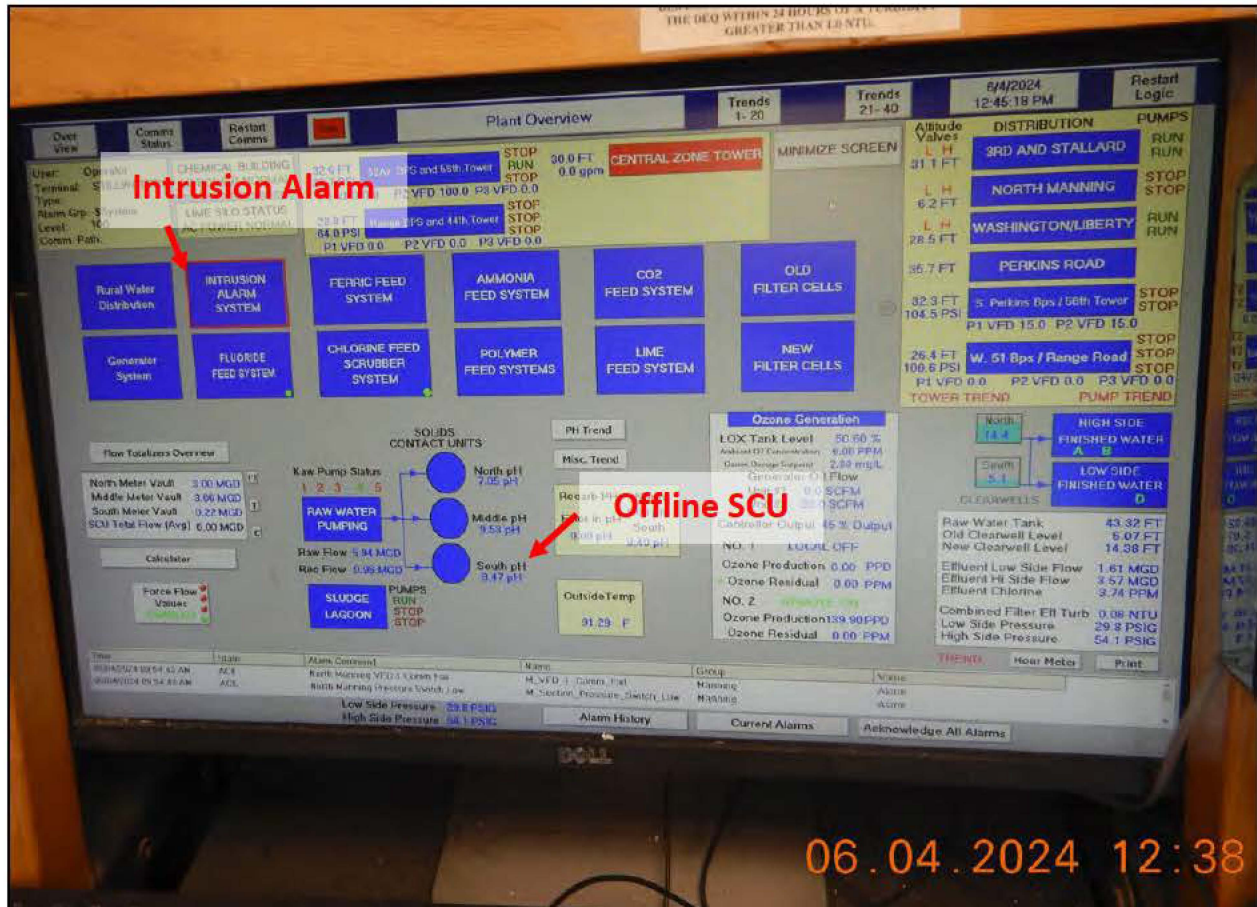
Photo No. 3

Location: City of Stillwater Public Water System

City of Stillwater

County: Payne

State: Oklahoma



Photograph 3. 6/4/2024 12:38 PM DSCN0655.JPG

WTP SCADA Screen View of the City's SCADA screen showing an overview of operations at the WTP. The "Intrusion Alarm System" panel was highlighted with a red border, and the reason was unclear to the EPA Inspection Team. This photograph was taken prior to the EPA Inspection Team walking through the WTP. The SCADA screen showed that the fluoride feed system and chlorine feed scrubber system were disabled during the inspection. The South solids contact unit (SCU) was offline during the inspection, but the SCADA screen did not reflect that.

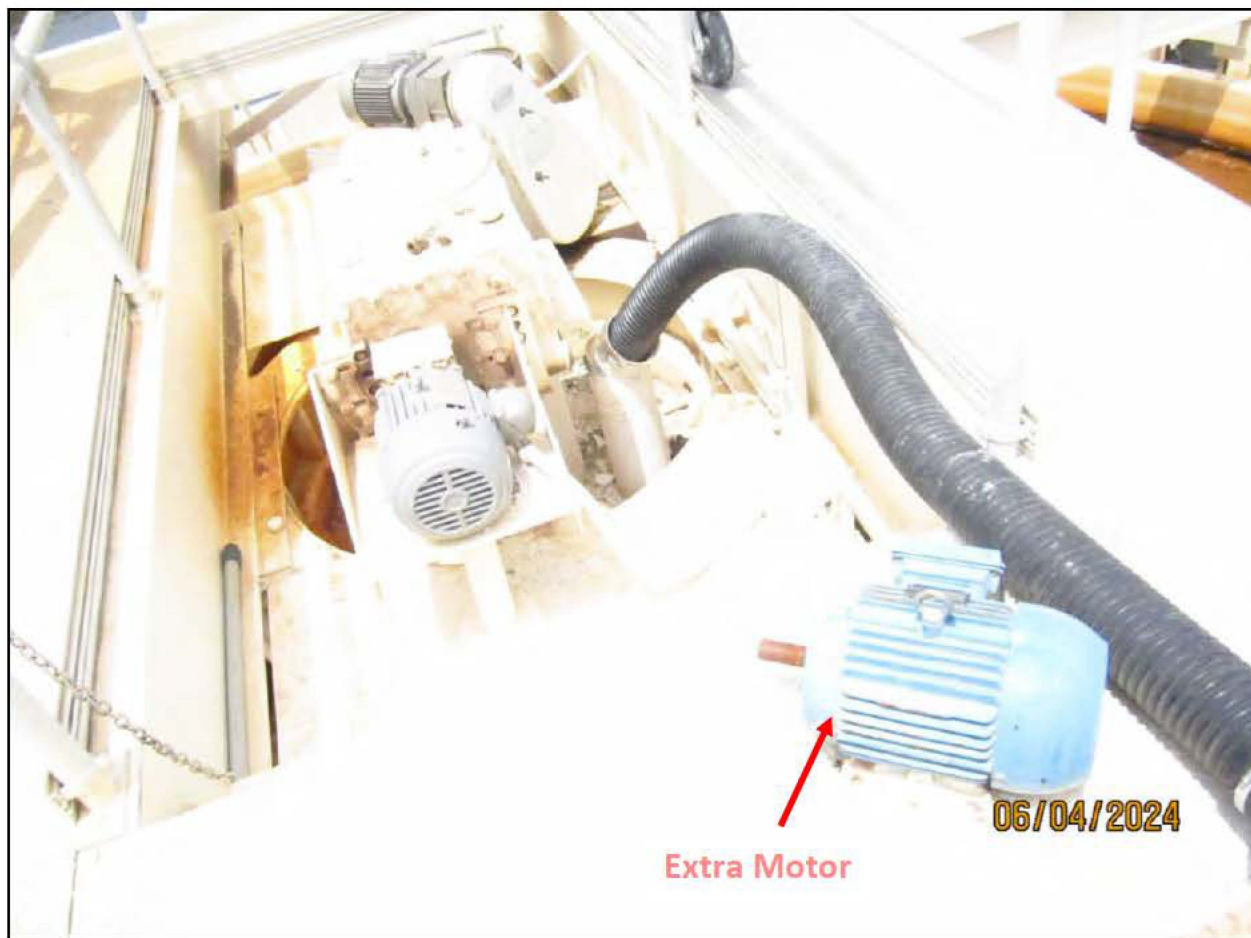


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 4

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 4. 6/4/2024 2:15 PM IMG_0051.JPG

WTP, North SCU View of the deck in the middle of the North SCU. There was an extra motor positioned on the operational deck, and System representatives stated that the motor had been changed a few months before the date of the inspection. Following the inspection, System representatives stated via email that the pump motor had been removed from the deck.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 5

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 5. 6/4/2024 2:15 PM DSCN0717.JPG

WTP, North SCU View of a bucket of gear oil that was positioned on the deck in the center of the North SCU. There was no NSF label on the gear oil, and a search of the NSF website showed that the oil was not listed as NSF certified. The label described the substance as an “automotive gear lubricant” used in cars and trucks.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 6

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 6. 6/4/2024 2:04 PM IMG_0063.JPG

WTP, South SCU View of one of the effluent troughs of the South SCU. The South SCU was offline during the inspection. A small volume of water was entering the unit due to a faulty valve. This water was not treated with lime and was blended with treated waters from the Northern and Central SCUs.

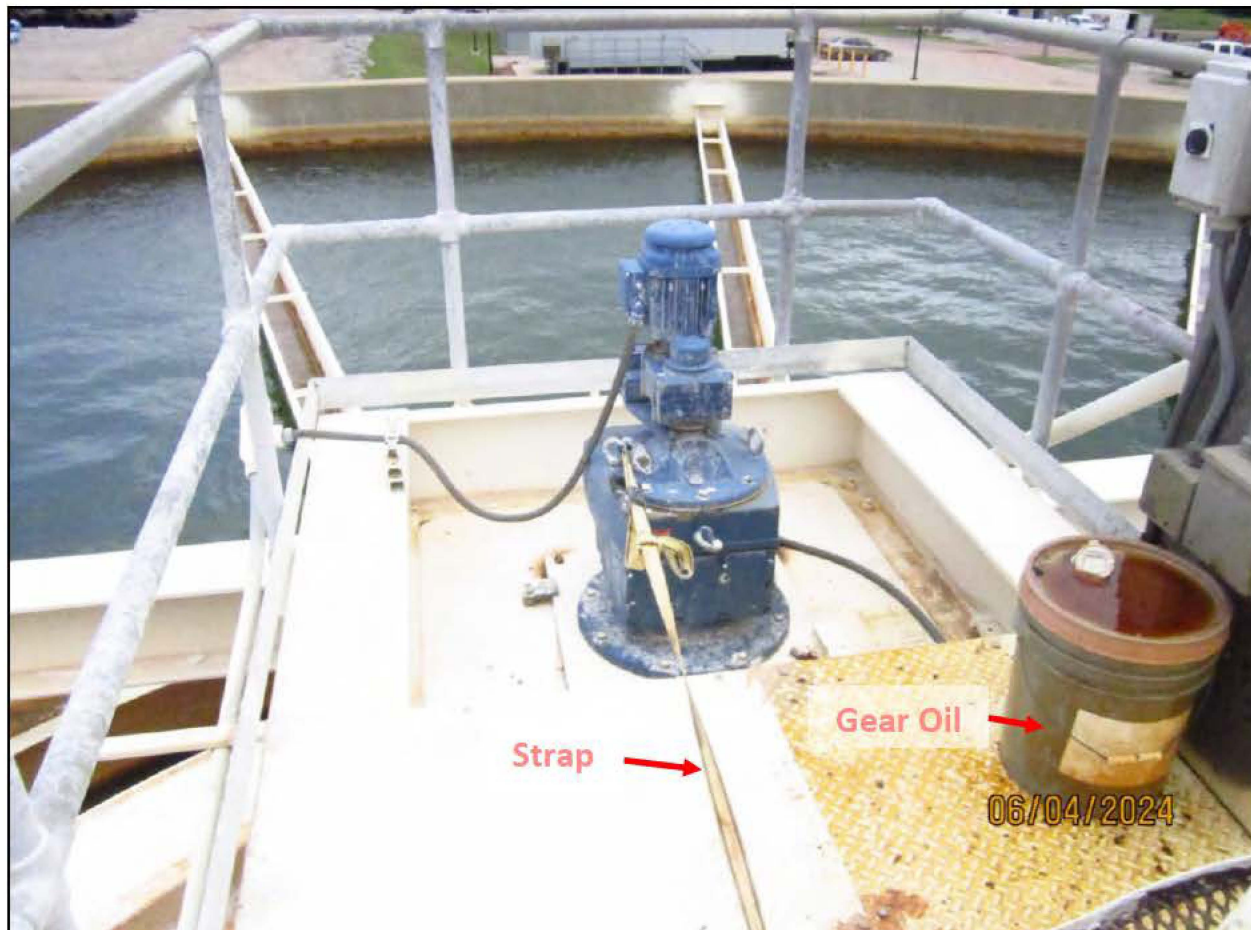


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 7

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 7. 6/4/2024 2:05 PM IMG_0064.JPG

WTP, South SCU View of the operational deck in the middle of the offline South SCU. The motor for the rake arm appeared to be supported by a strap, and there was a bucket of gear oil sitting on the deck.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 8

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 8. 6/4/2024 2:21 PM IMG_0069.JPG

WTP, Recarbonization Basin View of water weeping through concrete cracks in the northwest corner of the recarbonization basin.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Photograph Log

Photo No. 9

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 9. 6/4/2024 2:29 PM DSCN0722.JPG

WTP, Filter Effluent Wet Well View of the effluent wet well that was positioned after the filters. The hatchways to the wet well lacked sanitary seals, and there was water ponding on the roof near the hatchways.

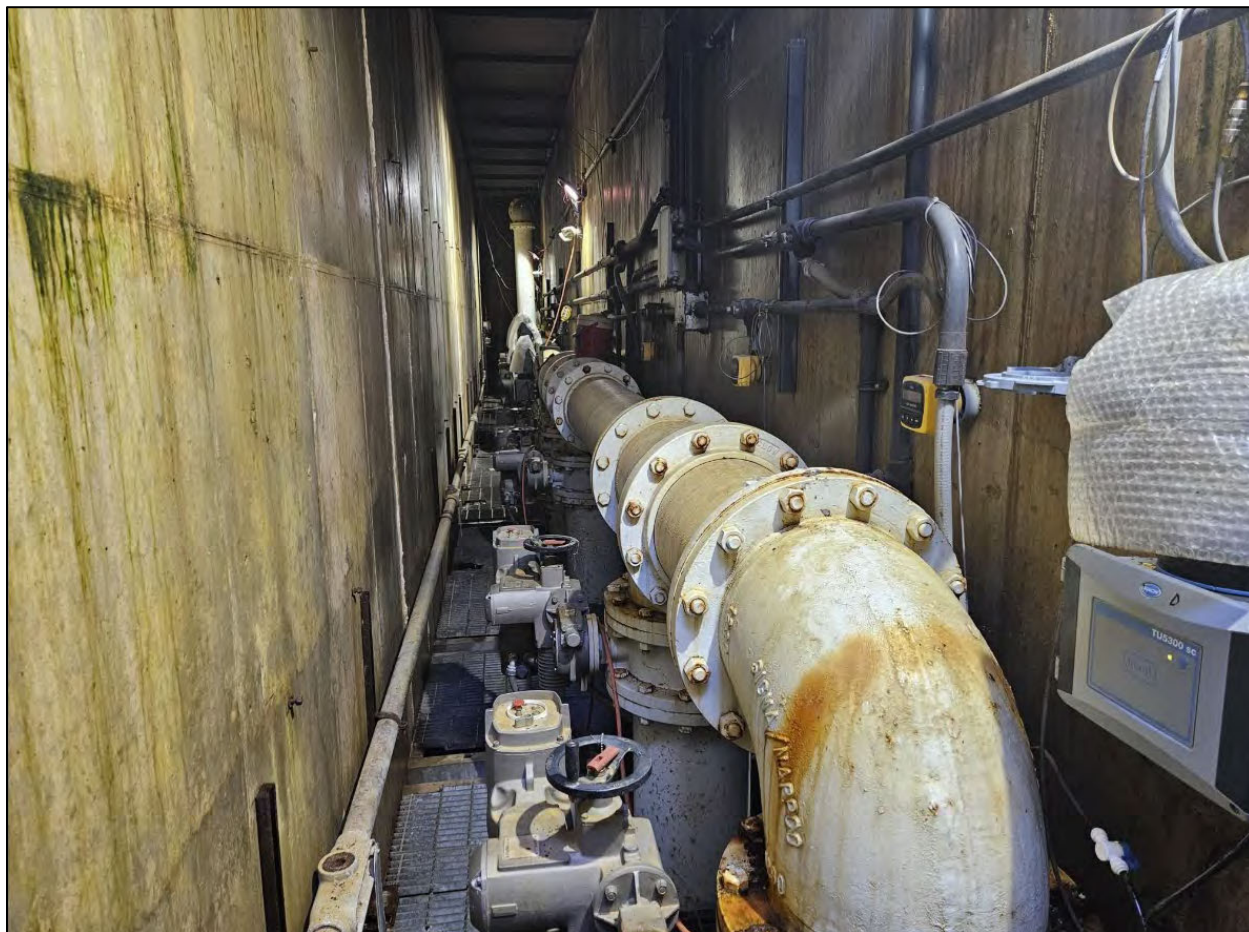


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 10

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 10. 6/5/2024 5:21 PM 20240605_172110.JPG

WTP, Filter Pipe Gallery Vault (Confined Space, photo taken by System representatives) View of the inside of filter pipe gallery vault. The IFE turbidimeters were positioned inside of the vault. The vault was unable to be entered by the EPA Inspection Team due to confined space requirements. System representatives stated that the vault was only entered once per month due to confined space conditions making the vault difficult to access. (Photo provided by System representatives following the inspection).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 11

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 11. 6/5/2024 5:33 PM 20240605_173323.JPG

WTP, Filter Pipe Gallery Vault (Confined Space, photo taken by System representatives) View of one of the IFE turbidity meter sample hoses that had an air gap, resolving a deficiency identified in the 2019 OK DEQ sanitary survey. (Photo provided by System representatives following the inspection).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 12

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 12. 6/5/2024 8:16 AM IMG_0003.JPG

WTP, Ozone Basin View of a crack on the concrete roof of the ozone basin at the WTP. There were multiple cracks on the roof of the basin, and it appeared that the cracks had been filled in the past, but there were failures in the new caulking as well.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 13

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 13. 6/5/2024 9:11 AM DSCN0779.JPG

WTP, Final Chemical Injection Vault View of the final chemical injection vault where ammonia and chlorine are injected upstream of the onsite clearwell. There was a strong ammonia smell surrounding the vault, and the vault was full of water, leaving the injection lines completely submerged.

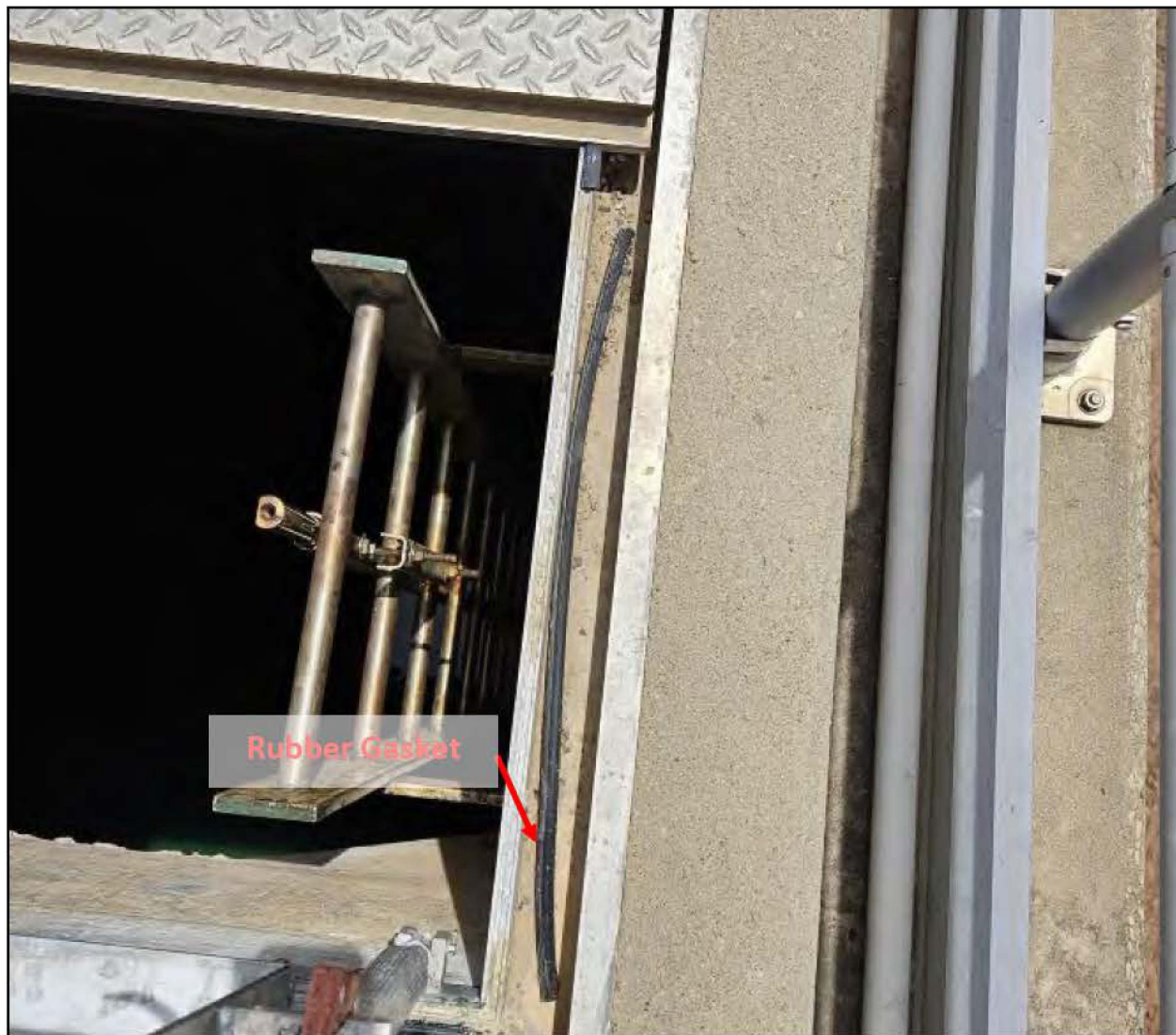


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 14

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 14. 6/11/2024 2:07 PM 20240611_140751.JPG

WTP, Clearwell View of a hatchway on the roof of the 4.0 MG clearwell. The hatchways were not “shoe box” design, rather they were utility vault entry type design. The rubber gasket around the outside of the hatchway had fallen off in places, and it is unknown if a watertight seal exists. (Photo provided by System representatives following the inspection).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 15

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 15. 6/5/2024 9:01 AM DSCN0773.JPG

WTP, High Service Pump Station View of multiple chemical barrels in the high service pump station that were not being stored on secondary containment. The chemical barrels appeared to be empty at the time of the inspection.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 16

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 16. 6/5/2024 9:05 AM DSCN0777.JPG

WTP, High Service Pump Station View of the POE chlorine analyzer. The analyzer was reading 3.60 mg/L at 9:05 a.m. on the morning of June 5, 2024. There was a preventative maintenance sticker from Hach on the analyzer that showed that it was last serviced on April 10, 2024.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 17

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 17. 6/5/2024 9:55 AM IMG_0057.JPG

North Perkins Water Tower View of the concrete splash pad next to the overflow at the North Perkins Water Tower. The pad was offset, and water appeared to be draining toward the foundation of the tank.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 18

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 18. 6/5/2024 9:56 AM IMG_0058.JPG

North Perkins Water Tower View of the end of the overflow pipe at the North Perkins Water Tower. The flex gate covering the overflow line of the North Perkins Water Tower did not form a tight seal. There was an approximately 0.5-inch gap between the end of the pipe and the flex gate.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 19

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 19. 6/5/2024 10:21 AM DSCN0804.JPG

Manning Pump Station View of a threaded hose tap without backflow prevention extending on the pump line at the Manning Pump Station. The pump station was offline during the inspection.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 20

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 20. 6/5/2024 10:20 AM DSCN0800.JPG

Manning Pump Station View of the two pumps inside of the Manning Pump Station. The pump on the right side of the image was inoperable at the time of inspection, leaving only one functional pump in the pump station. The pump station was offline during the inspection.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 21

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 21. 6/5/2024 10:33 AM IMG_0079.JPG.JPG

Third and Stallard Water Tower/Pump Station View of the perimeter fence surrounding the Third and Stallard Water Tower and pump station. There was vegetation growing over/against the fence, creating a security threat.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 22

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 22. 6/5/2024 10:45 AM IMG_0094.JPG

Third and Stallard Water Tower View of ponding water next to the base of the Third and Stallard Water Tower. The ground sloped toward the tank foundation in places. Areas of the caulking between the tank bottom plate and foundation had failed.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 23

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 23. 6/5/2024 10:48 AM DSCN0828.JPG

Third and Stallard Water Tower View of the concrete splash pad next to the end of the overflow pipe at the Third and Stallard Water Tower. The pad was offset, and water appeared to be draining toward the foundation of the tank. Also visible in this image is the flex gate at the end of the overflow pipe. The flex gate did not form a tight seal, and there was an approximately 1-inch gap between the end of the pipe and the flex gate.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 24

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 24. 6/4/2024 10:50 AM IMG_0098.JPG

Third and Stallard Water Tower View of golf balls and broken glass next to the base of the Third and Stallard Water Tower. System representatives stated that the residents of the house directly next to the tank would throw bottles over the fence against the side of the tank, and that people would hit golf balls toward the tank. System representatives also stated that the police had dealt with the security issues coming from the house next to the tank.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Photograph Log

Photo No. 25

Location: City of Stillwater Public Water System

City of Stillwater

County: Payne

State: Oklahoma

06/05/2024

	Date					
Alarms/Faults	4-24-24 con. fail Valve position	5-1-24	5-7-24	5/18/24	5/21/24	5/21/24
A/C Unit	—	—	—	✓	✓	✓
Pump/Seals/Motors	✓	✓	✓	✓	✓	✓
Leaks	✓	✓	✓	✓	✓	✓
Pit/Sump Pump	✓	✓	✓	✓	✓	✓
PSI Indicator	✓	✓	✓	✓	✓	✓
Flow Meter	✓	✓	✓	✓	✓	✓
Heater/Vents	—	—	—	—	✓	✓
Fire ext	—	✓	—	—	—	—
					mowed	
	mwd	BB				

Comments: Fire ext check
mowing conducted by
Chase
BB 5-1-24

5/13/24 VFD under voltage reset
BB 5/18

VFD-1 communications failure

Tv AD 5-21-24 programming

5/28/24 BB
washed pumps

Photograph 25. 6/5/2024 10:35 AM IMG_0082.JPG

Third and Stallard Pump Station View of a "Pump Station Checks" sheet outlining a pump failure that occurred in May 2024. The corrective maintenance activities that were conducted on the pump are not maintained in a work order system, and the notes lack specific detail of the maintenance that was actually conducted.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 26

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 26. 6/5/2024 10:37 AM DSCN0819.JPG

Third and Stallard Pump Station View of a threaded hose tap without backflow prevention that extended off of one of the pump lines inside of the Third and Stallard Pump Station.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 27

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 27. 6/5/2024 10:40 AM IMG_0089.JPG

Third and Stallard Pump Station View of an additional threaded hose tap at the Third and Stallard Pump Station that had a hose attached to it. The hose did not have backflow prevention.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 28

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 28. 6/5/2024 10:38 AM DSCN0820.JPG

Third and Stallard Pump Station View of one of the pump lines inside of the Third and Stallard pump station. A suction side pressure gauge was missing from the line.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Photograph Log

Photo No. 29

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 29. 6/5/2024 11:45 AM DSCN0838.JPG
South Perkins Road Pump Station View of an air relief port that was missing a downturned exhaust line.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 30

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 30. 6/5/2024 12:14 PM DSCN0845.JPG

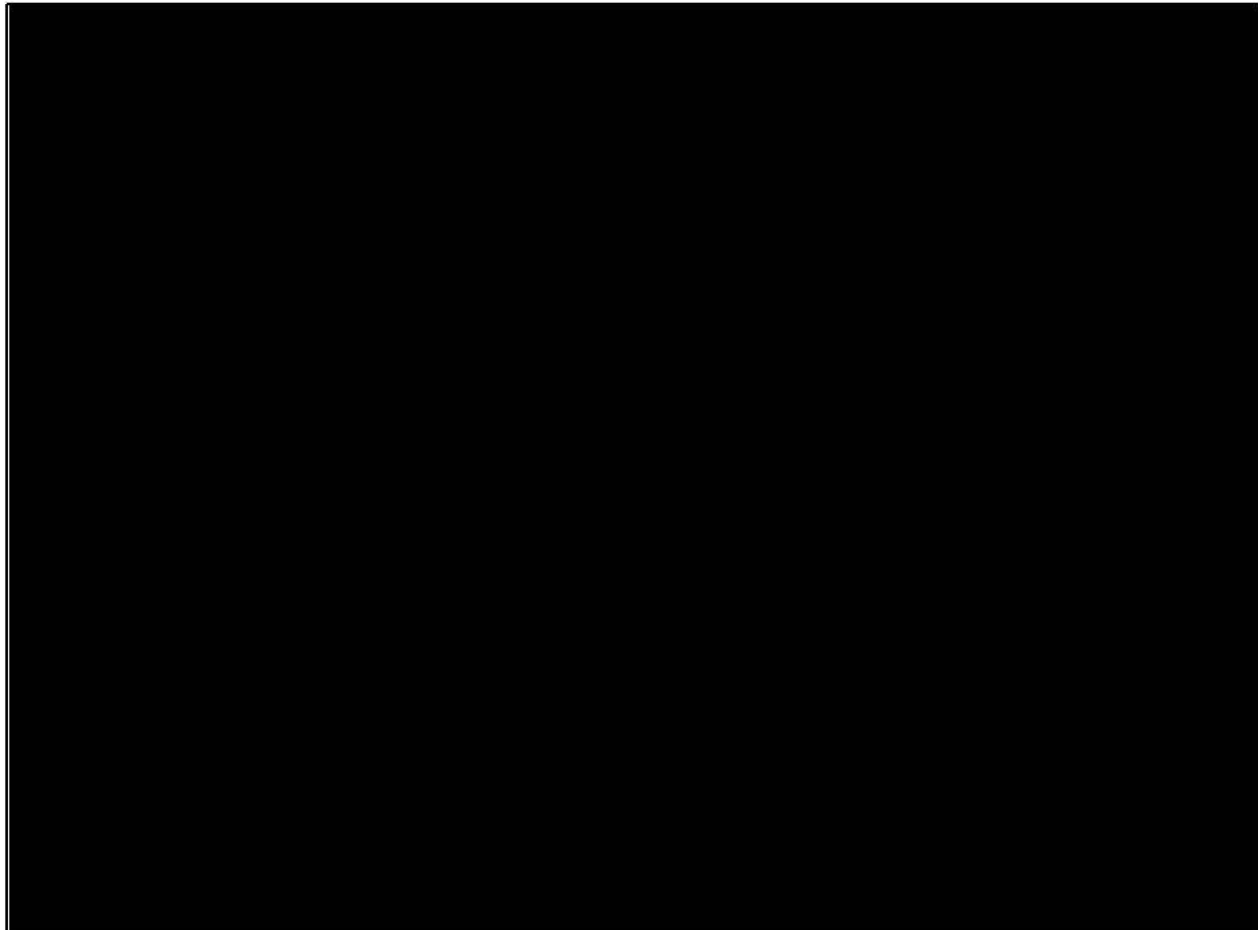
32nd St. Pump Station View of two of the pumps inside of the 32nd St. Pump Station. The impellers of the pump on the right were spinning in reverse when the EPA Inspection Team arrived, and it was discovered that there was a failure with the check valve on the pump discharge line. The check valve on the discharge pump line to the left of the image was making a periodic clicking noise, and the reason was unknown.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Photograph Log

Photo No. 31

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 32

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 32. 6/5/2024 1:00 PM IMG_0146.JPG

S Western Road Flushing Line View of an above ground flushing line that was positioned approximately 100 yards south of the intersection of S. Western Road and W. 32nd Avenue. System representatives stated that the line was attached to a finished water transmission line running parallel to the road. There was a rubber hose attached to the end of the PVC line. System representatives stated that the hose was being used to divert water away from the concrete platform to prevent erosion. The hose extended several feet through the woods and into a stream flowing through a plastic corrugated pipe that extended under the road. This image was taken on June 5, 2024, the second day of the inspection. Google Earth street view imagery from S. Western Road shows that the hose was attached to the flushing line when the image was taken in March 2022 (refer to [Appendix 2, Exhibit 5, Flushing Line Photo – March 2022](#)).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 33

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 33. 6/5/2024 1:01 PM IMG_0147.JPG

S Western Road Flushing Line View of the valve box associated with the flushing line next to S. Western Road. Note, the cover of the valve box was offset, and the valve was in the "open" position allowing water to flow through the flushing line.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 34

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 34. 6/5/2024 1:02 PM IMG_0149.JPG

S Western Road Flushing Line View of the rubber hose that was attached to the above ground PVC flushing line. The hose extended several feet through the woods and terminated in a below ground plastic corrugated pipe that extended under the road and had water running through it.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 35

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 35. 6/5/2024 1:02 PM IMG_0150.JPG

S Western Road Flushing Line View of the rubber hose that was attached to the PVC flushing line next to S. Western Road extending into a below ground plastic corrugated pipe that extended under the road and had water running through it.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 36

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 36. 6/5/2024 1:03 PM IMG_0151.JPG

S Western Road Flushing Line View of the rubber hose that was attached to the PVC flushing line discharging approximately eight feet into the corrugated pipe into a stream.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 37

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 37. 6/5/2024 1:05 PM IMG_0152.JPG

S Western Road Flushing Line View of the quick connector at the end of the rubber hose that was elevated above the stream by approximately ten inches. The hose was filled with water, and some water was spilling out of the end of the pipe.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 38

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 38. 6/5/2024 1:05 PM IMG_0153.JPG

S Western Road Flushing Line Additional view of the quick connector at the end of the rubber hose that was elevated above the stream by approximately ten inches. The hose was filled with water, and the water was overflowing from the hose into the stream.

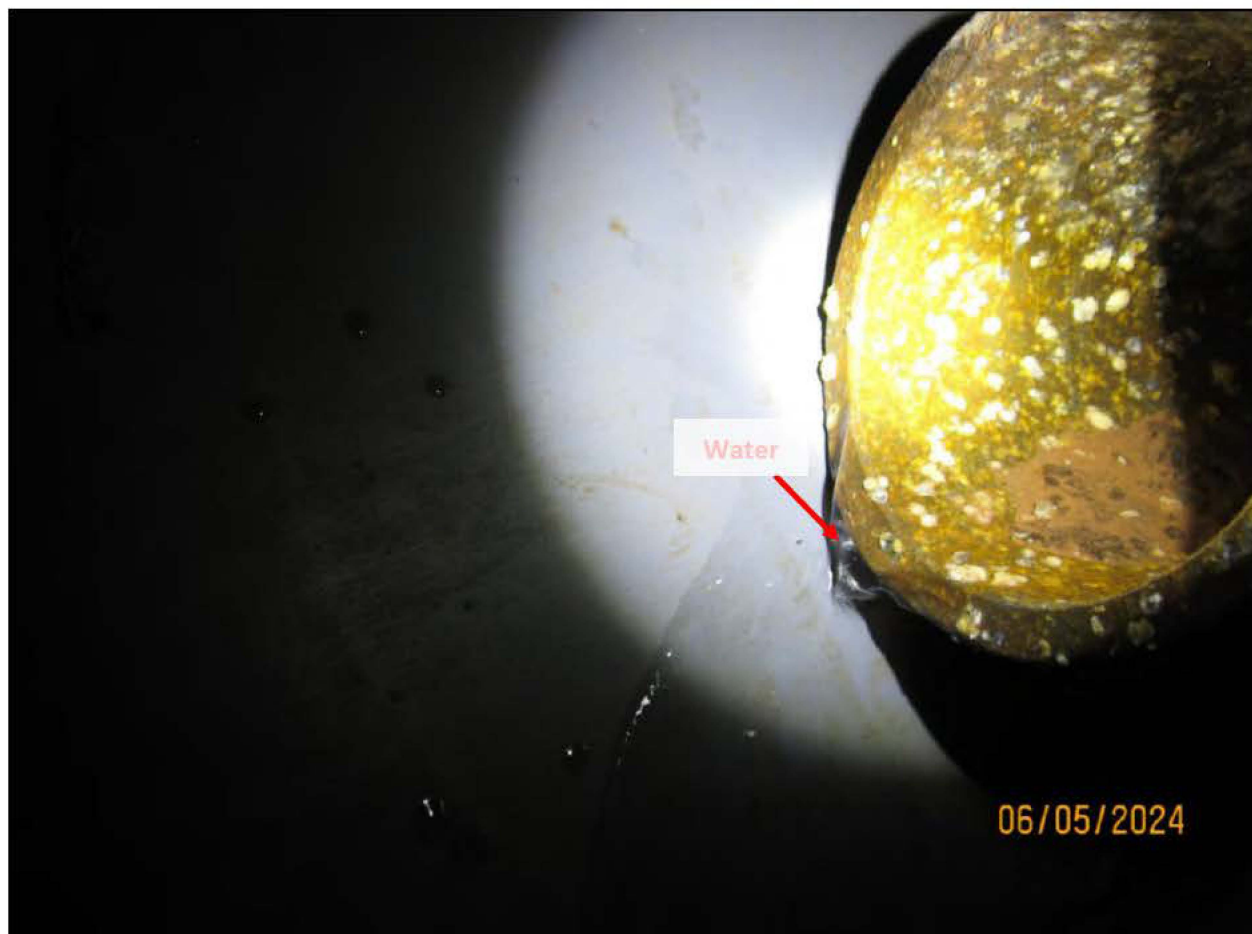


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 39

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 39. 6/5/2024 1:06 PM IMG_0154.JPG

S Western Road Flushing Line Close-up view of water being released from the quick connector at the end of the rubber hose.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 40

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 40. 6/5/2024 1:07 PM IMG_0155.JPG

S Western Road Flushing Line View of water being released from the quick connector at the end of the rubber hose after the inspector had lifted the hose to see if water would collect in the hose, and then set the hose back down. The water being released had collected in the hose while the hose was being held up at approximately 10 inches above stream.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 41

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 41. 6/5/2024 1:08 PM IMG_0156.JPG

S Western Road Flushing Line View from behind the hose of water being released from the quick connector at the end of the rubber hose after the inspector had lifted the hose to see if water would collect in the hose, and then set the hose back down. Agitation from the releasing water can be seen in the receiving stream.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 42

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 42. 6/6/2024 12:17 PM IMG_0123.JPG

S Western Road Flushing Line View of the above ground flushing line that was positioned next to S. Western Road, taken on June 6, 2024, the third day of the inspection. The image was taken after the observation regarding the hose/potential cross connection was made to System representatives. The plastic piping that had connected the PVC flushing line to the rubber hose had been broken off.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 43

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 43. 6/6/2024 12:20 PM IMG_0124.JPG

S Western Road Flushing Line View of the valve box associated with the flushing line next to S. Western Road. This image was taken on June 6, 2024, after the potential cross connection was observed. The lid of the valve box was properly closed.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 44

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 44. 6/6/2024 12:20 PM IMG_0125.JPG

S Western Road Flushing Line View of the rubber hose that had been attached to the PVC flushing line the day prior to this image being taken (June 5, 2024). It appeared that distribution team members had cut the hose and left it in the woods after the potential cross connection had been observed.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 45

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 45. 6/6/2024 12:22 PM IMG_0126.JPG

Air Relief Valve Release Pipe View of an air relief valve release pipe that extended off the distribution system. The pipe was located approximately 50 yards from the S. Western Road flushing line with hose.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 46

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 46. 6/6/2024 12:26 PM IMG_0127.JPG

Air Relief Valve Release Pipe View of the underground components associated with the air relief pipe seen in the above image.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 47

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 47. 6/6/2024 12:30 PM IMG_0129.JPG

Flushing Line View of an additional above ground flushing line in the distribution system. This line had a secure cap over the opening while the line was not in use.

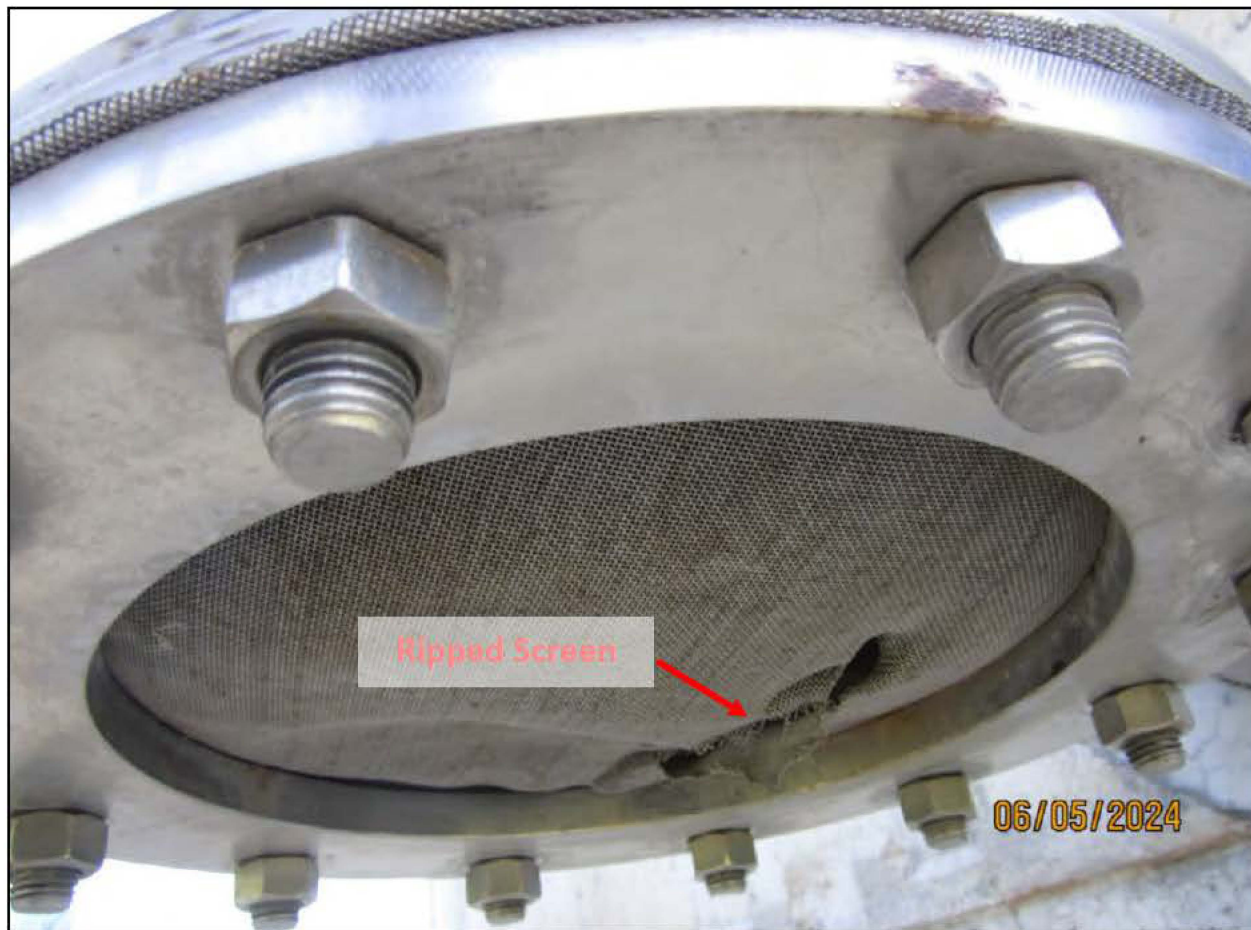


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 48

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 48. 6/5/2024 1:47 PM IMG_0167.JPG

44th St. Water Tower View of the end of the overflow pipe extending from the 44th St. Water Tower. The pipe was missing a flex gate and the mesh screen covering the pipe was ripped.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 49

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 49. 6/5/2024 1:49 PM IMG_0171.JPG

44th St. Water Tower View of the drainpipe from the floor inside of the 44th St. Water Tower that extended outside of the water tower. The flex gate covering the drainpipe appeared to have been wired open in past, allowing black insects to enter the pipe. After this observation was made, the wire was removed, and the flex gate was seated tightly over the end of the drainpipe.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 50

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 50. 6/5/2024 2:03 PM IMG_0176.JPG

44th St. Water Tower View inside of the meter vault next to the 44th St. Water Tower. The meter vault had one inch of standing water inside of it, but staining on the walls of the vault indicated past water level heights of 12-16 inches high. It was unclear why the vault was flooding, since a sump pump was present inside of the vault. The high water marks inside of the vault were approximately 12 inches from an electrical outlet inside of the meter vault.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Photograph Log

Photo No. 51

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 51. 6/5/2024 1:56 PM IMG_0181.JPG

44th St. Water Tower View of a threaded hose tap without backflow prevention on one of the lines inside the base of the 44th St. Water Tower.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 52

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 52. 6/5/2024 1:58 PM IMG_0182.JPG

44th St. Water Tower View of a control panel inside of the base of the 44th St. Water Tower. The panel had heavy moisture due to the humidity inside of the base. The EPA Inspection Team had the City representatives open the control panel, and the inside was dry.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 53

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 53. 6/5/2024 3:06 PM DSCN0906.JPG

West Highway 51 Pump Station View of one of the pressure gauges on the suction side of one of the pump lines was not functional. An operator opened both valves and a sample tap on the line to verify that water was flowing through the discharge line, and it was confirmed that the line was pressurized even though the pressure gauge was reading <0 psi.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 54

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 54. 6/5/2024 3:40 PM DSCN0912.JPG

Washington and Liberty Pump Station View of one of the pumps and pump lines inside of the Washington and Liberty Pump Station. The pump line was missing both suction and discharge side pressure gauges.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 55

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 55. 6/5/2024 3:41 PM DSCN0914.JPG

Washington and Liberty Pump Station View of a threaded hose tap without backflow prevention on the pump line inside of the Washington and Liberty Pump Station.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Photograph Log

Photo No. 56

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 56. 6/5/2024 3:46 PM DSCN0917.JPG

Washington and Liberty Pump Station View of a pressure gauge on the wall inside of the Washington and Liberty Pump Station that was reading 15.248 psi at 3:46 p.m. on June 5, 2024. System representatives could not confirm where the pressure reading was coming from, but it appeared that the pressure was being read from the suction line entering the pump station.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 57

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 57. 6/5/2024 3:54 PM DSCN0924.JPG

Washington and Liberty Water Tower View of deteriorated caulking and mortar between the metal bottom plate of the Washington and Liberty Water Tower and the concrete base.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 58

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 58. 6/5/2024 3:56 PM DCSN0928.JPG

Washington and Liberty Water Tower View of the end of the overflow pipe for the Washington and Liberty Water Tower. The end of the pipe was approximately 2 inches above the concrete splash pad. Also visible in this image is the flex gate at the end of the overflow pipe that was not seated properly. There was an approximately 1-inch wide gap between the flex gate and the pipe. There were animal/insect nests inside of the overflow pipe.

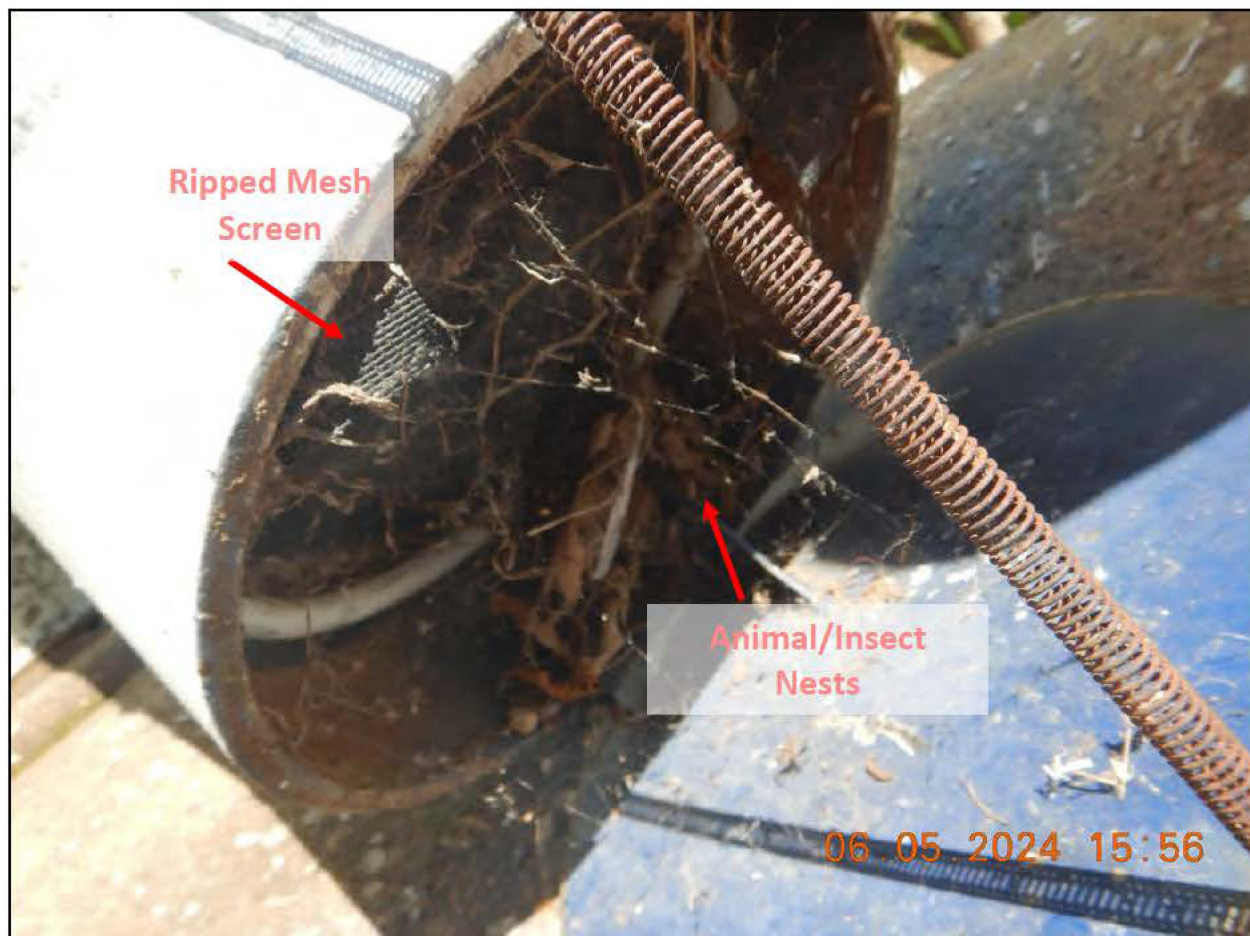


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 59

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 59. 6/5/2024 3:56 PM DCSN0929.JPG

Washington and Liberty Water Tower View of the inside of the overflow pipe at the Washington and Liberty Tower. There were insect/animal nests inside of the pipe, and it appeared that the mesh screen had ripped and fallen off.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 60

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 60. 6/6/2024 8:45 AM IMG_0008.JPG

Yost Pump Station View inside of the Yost Pump Station vault. The pump lines lacked air relief ports and downturned exhaust lines.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 61

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 61. 6/6/2024 8:49 AM DSCN0934.JPG

Yost Pump Station View of the suction side pressure gauge at the Yost Pump Station that was showing a pressure that appeared to be just below 25 psi (based on photographic imagery from outside the confined space of the vault).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 62

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 62. 6/6/2024 8:57 AM DSCN0937.JPG

Yost Pump Station View of a hill slope behind the Yost Pump Station. It appeared that water flowed down the slope toward the pump station during rain events. There was erosion behind and next to the pump station.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 63

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 63. 6/6/2024 9:07 AM DSCN0942.JPG

Yost Water Tower View of moisture that was accumulating at the metal base of the Yost Water Tower and the concrete pad that the tank was sitting on. It appeared that the tank was leaking from the base plate, but this was unable to be verified. The base of the tank lacked caulking or a seal. Also visible in this image is ponding that was occurring around the tank foundation.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 64

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 64. 6/6/2024 9:08 AM IMG_0032.JPG

Yost Water Tower Close-up view of moisture that was accumulating at the bottom plate of the Yost Water Tower. Also visible in this image is a structural bolt and nut that did not appear to be properly seated on the tank anchor.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 65

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 65. 6/6/2024 9:10 AM IMG_0031.JPG

Yost Water Tower View of a ladder that was sitting on the ground next to the base of the Yost Water Tower. It was unknown what the ladder was used for.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 66

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 66. 6/6/2024 9:10 AM DSCN0945.JPG

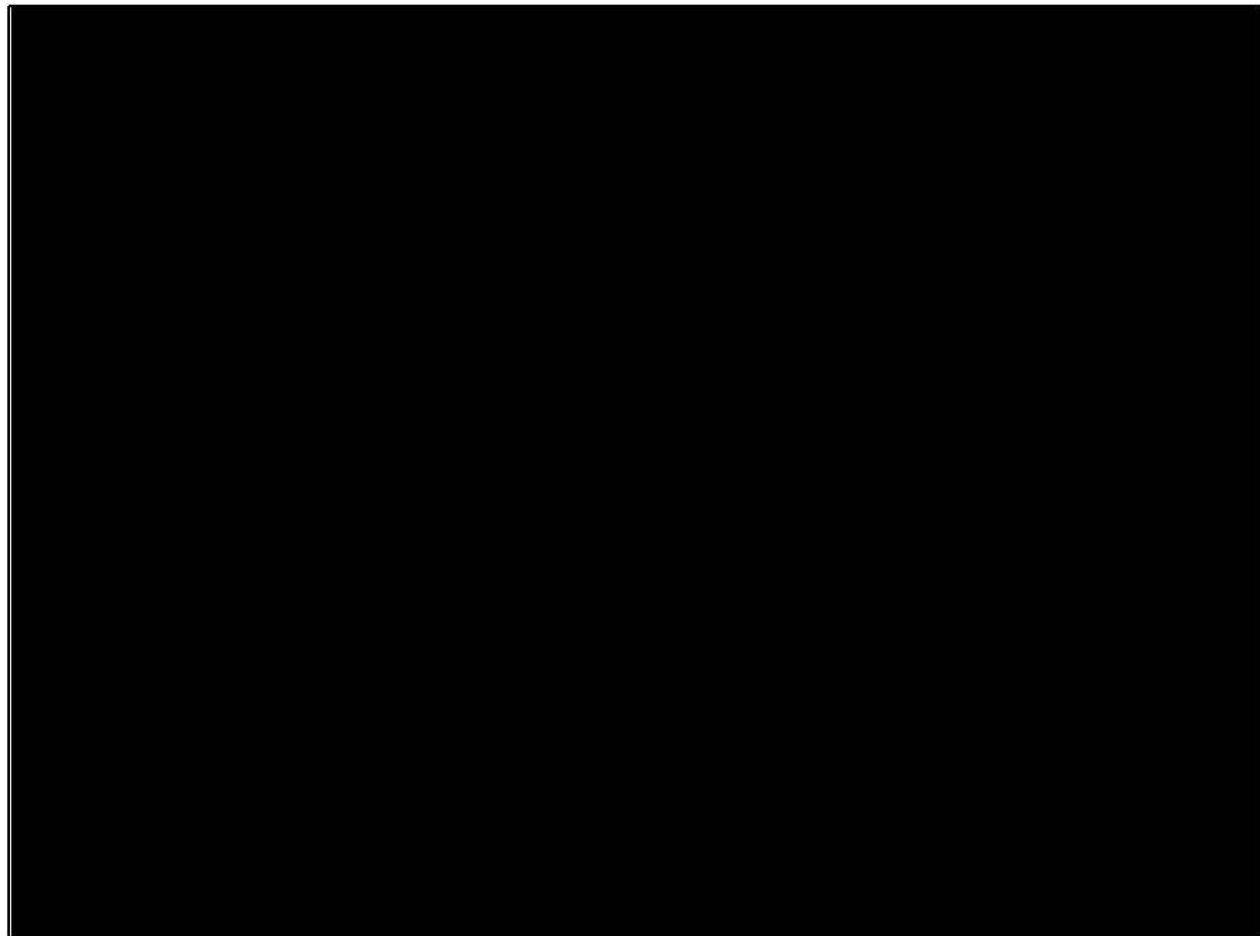
Yost Water Tower View of the terminus of the overflow pipe of the Yost Water Tower. There was no splash pad beneath the pipe, but the top of a plastic barrel had been placed under the pipe to protect the tank's discharge valve from cow's scratching activities.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Photograph Log

Photo No. 67

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 68

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 68. 6/6/2024 9:28 AM DSCN0950.JPG

Ricebeck Water Tower View of the Ricebeck Water Tower and the perimeter fence that surrounded it. The tower lacked a local level indicator and was also not tied telemetrically to SCADA. The barbed wire at the top of the fence was damaged/missing in places. The water tower was offline during the inspection.

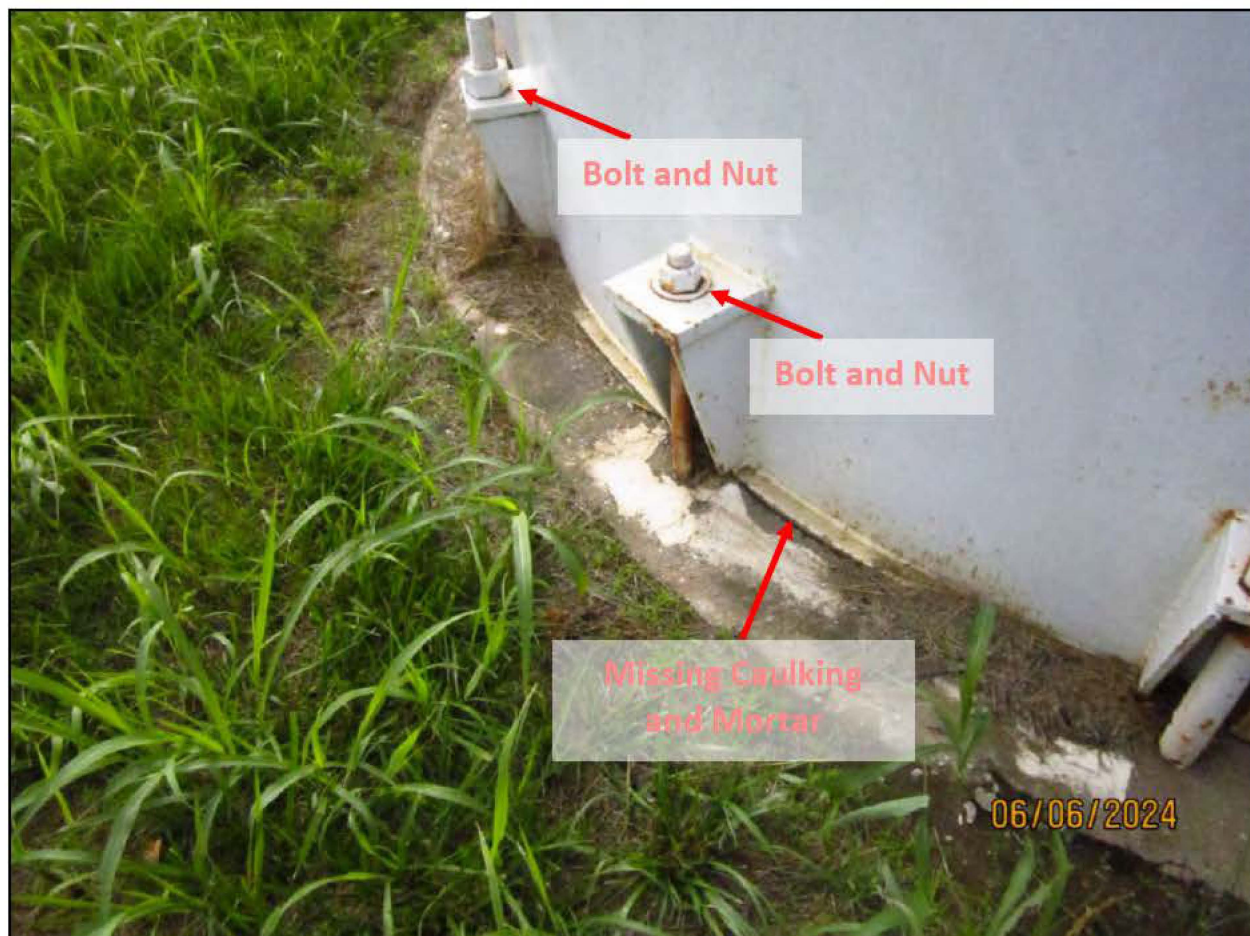


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 69

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 69. 6/6/2024 9:30 AM IMG_0039.JPG

Ricebeck Water Tower View of the base of Ricebeck Tower. The ground was sloping toward the concrete foundation of the tank, and the concrete was level with the ground in some areas. Multiple structural bolts and nuts did not appear to be properly seated on the tank anchors. Caulking and mortar was also missing in some areas between the bottom plate of the tank and the concrete foundation. The water tower was offline during the inspection.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 70

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 70. 6/6/2024 10:03 AM DSCN0962.JPG

Tan-Tara Water Tower View of the vegetation that was growing on/over the perimeter security fence at the Tan-Tara Water Tower. The water tower was offline during the inspection.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 71

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 71. 6/6/2024 10:15 AM IMG_0049.JPG

Tan-Tara Water Tower View of the meter vault that was positioned next to the Tan-Tara Water Tower. The vault was completely flooded during the inspection, submerging the assets inside of the vault. The water tower was offline during the inspection.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 72

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 72. 6/6/2024 10:04 AM DSCN0966.JPG

Tan-Tara Water Tower View of the metal bottom plate of the Tan-Tara water tower. There was caulking missing between the bottom plate of the tank and the concrete foundation. The water tower was offline during the inspection.

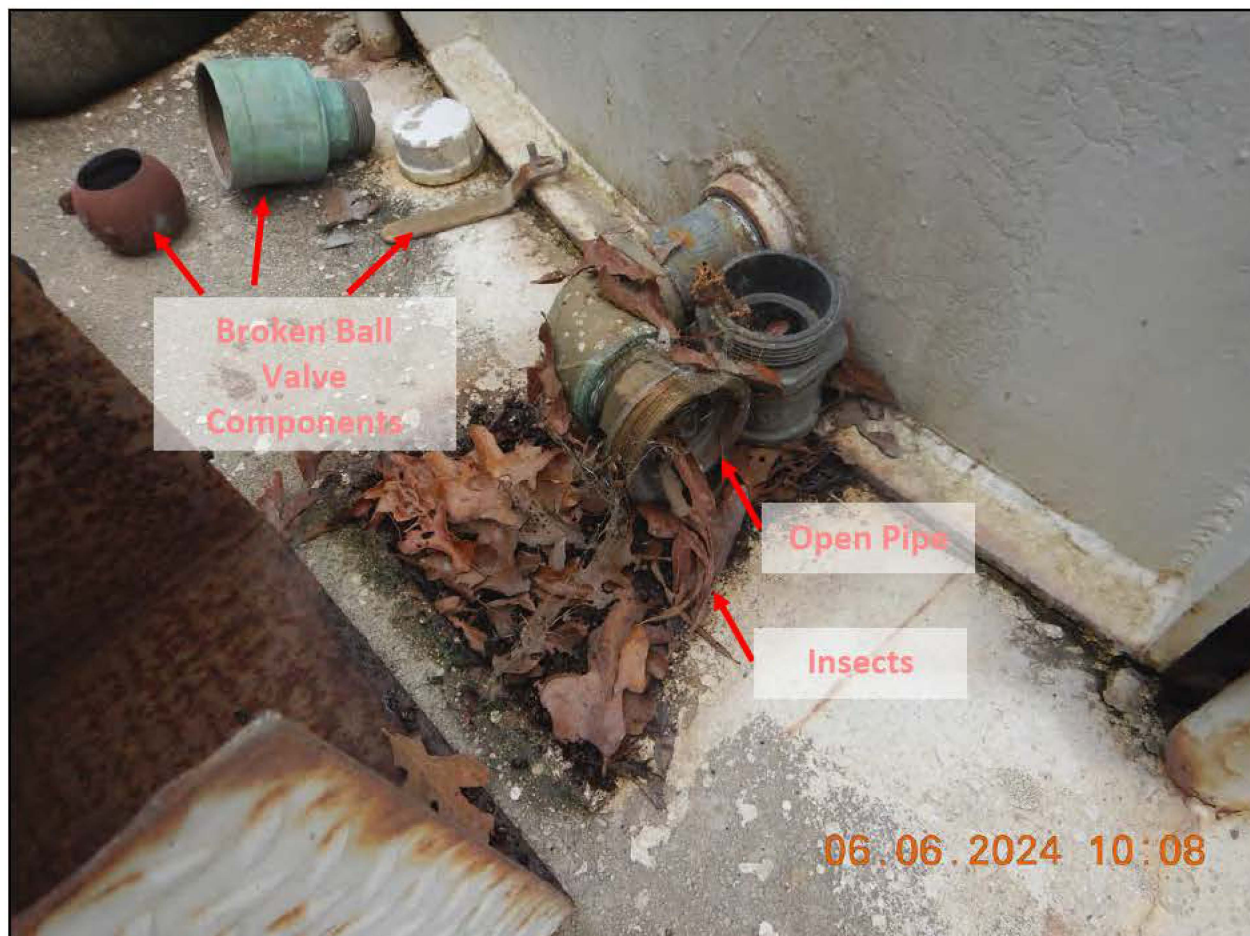


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 73

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 73. 6/6/2024 10:08 AM DSCN0968.JPG

Tan-Tara Water Tower View of an open pipe that provided direct access into the water tower. A broken ball valve (three components) were sitting next to the open pipe. Insects were observed crawling around and into the pipe. The water tower was offline during the inspection.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 74

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 74. 6/6/2024 10:36 AM IMG_0068.JPG

Coyle Water Tower View of the Coyle Water Tower base. Multiple structural bolts and nuts did not appear to be properly seated on the tank anchors. Caulking and mortar was also missing in some areas between the bottom plate of the tank and the concrete foundation. The water tower was offline during the inspection.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 75

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 75. 6/6/2024 10:36 AM DSCN0978.JPG

Coyle Water Tower Close-up view of one of the structural bolts and nuts that did not appear to be properly torqued down. There was also some corrosion/chipping paint around the tank anchor. The water tower was offline during the inspection.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 76

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 76. 6/6/2024 10:37 AM IMG_0069.JPG

Coyle Water Tower View of a temporary discharge pipe that was attached to the tank, as well as additional bolts and anchors that were not seated properly. The water tower was offline during the inspection.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 77

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 77. 6/6/2024 10:38 AM IMG_0076.JPG

Coyle Water Tower View of a threaded hose tap without backflow prevention that was present at the Coyle Water Tower. The water tower was offline during the inspection.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 78

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 78. 6/6/2024 10:38 AM DSCN0979.JPG

Coyle Water Tower View of the damaged/missing perimeter fence surrounding the Coyle Water Tower. Parts of the fence had been removed due to ongoing construction that was occurring at the Water Tower. The water tower was offline during the inspection.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 79

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 79. 6/6/2024 10:53 AM IMG_0084.JPG

Karsten Creek Pump Station View of a threaded hose tap without backflow prevention that was present at the Karsten Creek pump station. Also visible in this image is heavy corrosion at the base of the vault, causing the potential for structural failures and flooding of equipment.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 80

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 80. 6/6/2024 11:25 AM DSCN0992.JPG

Hilltop Pump Station View of the inside of the Hilltop Pump Station vault. There were voids in the concrete walls surrounding the pump line. The voids created a possible entry point for water into the pump station vault, and the electric motors for the pumps were positioned near the base of the vault. The pump station was offline.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 81

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 81. 6/6/2024 11:57 AM DSCN1008.JPG

Central Water Tower View of a threaded hose tap without backflow prevention inside of the Central Water Tower.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 82

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 82. 6/6/2024 11:44 AM DSCN0998.JPG

Central Water Tower View of the end of the overflow pipe extending from the Central Water Tower. The pipe was downturned and contained a mesh screen but was missing a flex gate.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Photograph Log

Photo No. 83

Location: City of Stillwater Public Water System		
City of Stillwater	County: Payne	State: Oklahoma



Photograph 83. 6/6/2024 11:45 AM DSCN1000.JPG

Central Water Tower View of the ground at the base of the Central Water Tower. The ground sloped toward the concrete foundation of the tank in areas, and it appeared that ponding would occur in the area next to the concrete foundation.

Appendix 2

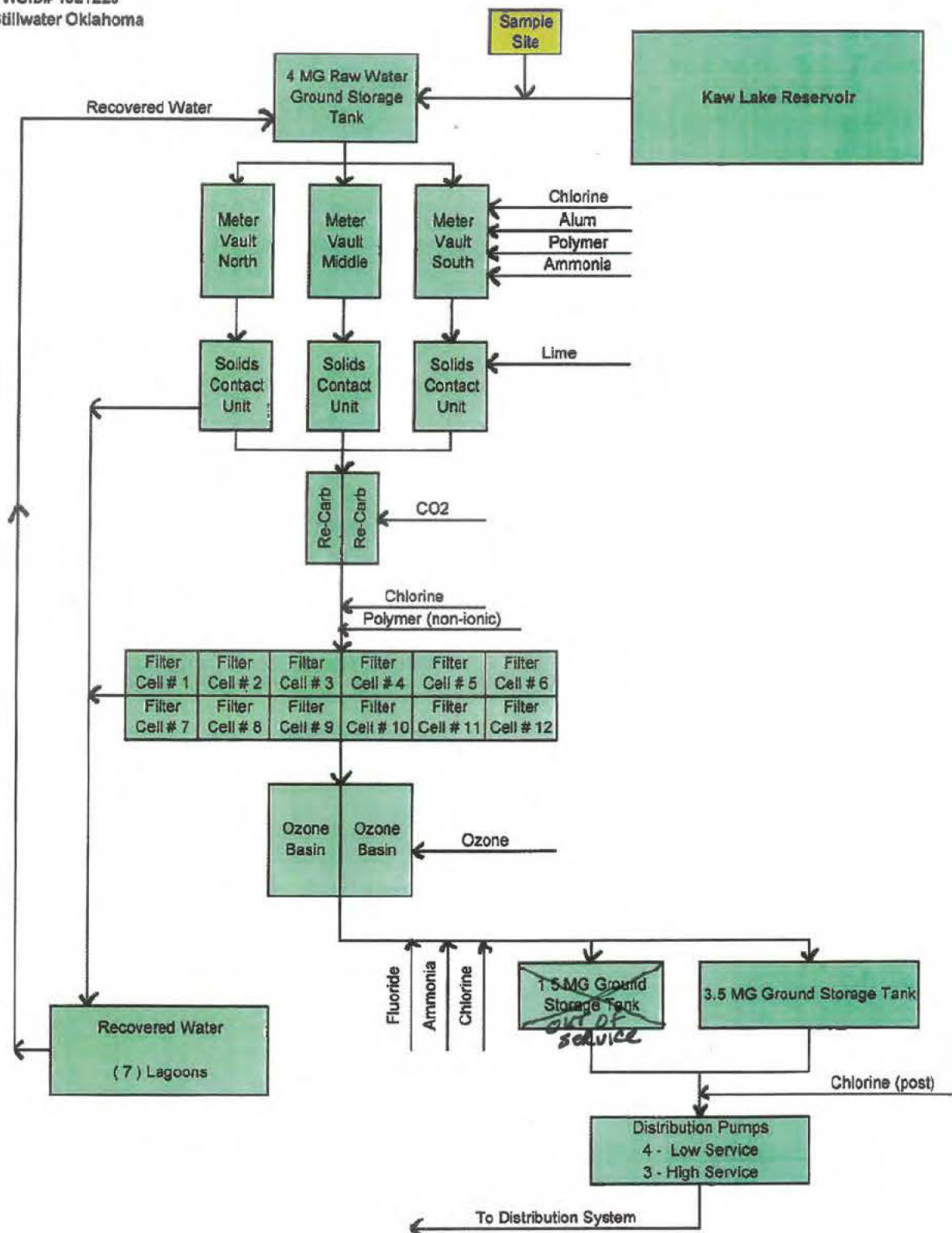
Exhibit Log



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Exhibit Log

Exhibit 1
City of Stillwater WTP Process Flow
Diagram

Stillwater Water Treatment Plant
 PWSID# 1021220
 Stillwater Oklahoma





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Exhibit Log

Exhibit 2 Stillwater Initial Non-Compliance Response – January 29 2020



Department of Water Utilities
723 S. Lewis Street/P.O. Box 1449
Stillwater, OK 74076-1449

Office: 405.742.8325
Web: stillwater.org

*6/5/14
DWM
from
Cory*

January 29, 2020

CERTIFIED MAIL, RETURN RECEIPT REQUESTED
David Mercer, P.E., District Engineer
Public Water Supply Engineering and Enforcement Section
Water Quality Division

RECEIVED

JAN 31 2020

WATER QUALITY DIVISION

Re: Sanitary Survey on April 23-25, 2019 – Final Report Response
PWID No. OK1021220

Dear Mr. Mercer:

This is the City of Stillwater Utilities Authority (Authority) response to the final report of the sanitary survey public water supply (PWS) system on April 23-25, 2019 and received December 30, 2019. The purpose of the sanitary survey was to identify existing sanitary deficiencies, verify compliance with state and federal regulations, and benchmark system performance. The Sanitary Survey performed is a mandated component of the Safe Drinking Water Act and consisted of an evaluation of the following eight elements:

- Water source;
- Pumps, pumping facilities, and controls;
- Water treatment;
- Monitoring, reporting, and data verification
- Distribution system;
- Water system management and operation; and
- Finished water storage;
- Operator compliance with state requirements.

DEFICIENCIES

The sanitary deficiencies identified by DEQ during the inspection are listed below in one of two categories: deficiencies requiring a schedule for correction and deficiencies not requiring a schedule for correction at this time. As explained in the conclusion of the Final Report, deficiencies requiring a schedule for correction and labeled as significant have been given immediate attention for remediation according to 40 CFR and/or OAC 252:626 and OAC 252:631.

Deficiencies Requiring a Schedule for Correction

The sanitary deficiencies which require a schedule for correction are as follows:

- Water Source - None identified.

- **Water Treatment**

Deficiency Significant – The stainless steel hatches on top of the ozonation basin were not watertight.

Response

New seals were ordered, received and installation was completed on January 27, 2020.

Deficiency - There was not an air gap between the turbidimeter effluent lines and the collection lateral into which they drain.

Response

Repairs/adjustments to establish an air gap were completed by staff on January 3, 2020.

Deficiency - There was not an air gap or backflow protection device between the fluoride mixing tank and the finished water line which supplies it.

Response

Backflow protection was added to the influent and effluent supply lines on January 09, 2020.

Adjustments to the float valve were made on January 23, 2020 to establish an air gap between the fluoride mixing tank and finished water line. Monitoring of the air gap was added to regular maintenance checks to assure the air gap is consistent.

Deficiency - The log inactivations of *Giardia* and viruses were not being calculated routinely, as a part of process control, to know what adjustments should be made to the ozonation process.

Response

The Log Inactivation calculation spreadsheet was updated to include the ozonation process and is being calculated routinely by staff. The updated version was sent to David Mercer via email on January 13, 2020.

Deficiency - The water treatment plant (WTP) did not have adequate flocculation capacity (with all units in service, or one unit out of service) or sedimentation capacity (with one unit out of service) to supply the historical maximum daily demand of 12.1 million gallons per day (MGD).

Response

The north SCU was not in operation during the Survey, but is used during periods of higher demand (summer months). SUA believes that the SCU facilities were constructed (and are operated) in compliance with ODEQ regulations and the approved permits in the early 1980's and mid 1990's. Please let us know if the ODEQ comment refers to some other issue.

Deficiency - The individual filter effluent flow meters were not operational

Response

The existing units are non-repairable and replacement in the existing location is impractical due to space, dimensional and configuration issues of replacement units. The Authority is currently under contract with Black and Veatch (B&V) to evaluate and design improvements for the Water Treatment Plant which includes an entirely new filter complex. This contract and improvements are expounded on at the end of this response report.

Deficiency - The individual filters were not equipped with differential pressure-cell devices to monitor headloss across the filter media beds. Filters were only equipped with a single device per filter (some of the radar type and some of the pressure transducer type) which measure water depths in the filter box.

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Response

Level indicators were installed to measure the depth of water in the filter beds in mid-April of 2019.

Deficiency - The filters did not have individual rate-of-flow controllers. (Each bank of filters had a manually-controlled valve and each filter had an on/off (non-variable) automated valve.)

Response

The Authority is currently under contract with B&V to evaluate and design improvements for the Water Treatment Plant which includes a new filter complex.

Deficiency - There were not day tanks for the cationic polymer, ferric sulfate, or fluoride.

Response

Polymer – A day tank was established on November 07, 2019 and is in use.

Ferric Sulfate – Two (2) tanks are utilized and are operated so that one serves as a day tank.

Fluoride – The existing sodium silicofluoride dry-type feed system will be replaced with a hydrofluorosilicic acid liquid-type feed system. The proposed feed system will consist of a bulk tank, transfer pumps, a day tank, and metering pumps with water supply in-line chemical injection.

Deficiency - The residuals ponds did not have at least 3 feet of freeboard and at least 2 feet of water depth between the water surface and the accumulated residuals.

Response

The residual ponds all currently have 3 feet or greater of freeboard. Cleaning the residuals ponds is scheduled to begin as weather and soil conditions permit.

Deficiency - The residuals ponds were not being managed to prevent the growth of unwanted vegetation, such as cattails and trees.

Response

Vegetation removal has started and is on-going.

Deficiency - The Authority did not have a current DEQ-approved residuals management plan.

Response

Stillwater Utility Authority believes we have been operating the WTP as permitted in approximately 1980. Please let us know when the regulation to have a residuals management plan became effective, how the regulation stipulated implementation for existing WTP, and whether we have an outdated plan, so that we can assess how to move forward.

- **Distribution System**

Deficiency - The volume of elevated water storage was less than the average daily demand. (While backup power sources may be used as an alternative means to satisfy the elevated water storage requirement, the Authority did not have adequate backup power sources either.)

Response

The Authority added 2 MG of storage in the last year through the Water 2040 program. One (1) mobile backup generator currently exists with two (2) backup mobile generators on order, expected to be delivered, field tested and ready for use by the end of June 2020. This new total of three (3) mobile generators is capable of supporting 6 MG in ground storage. The Authority also has a stationary backup generator project in construction at the Water Treatment Plant that will add backup power at the plant (completion expected in Fall 2020) for running the finished water pump station which adds 6 MG of storage to the distribution system.

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- **Finished Water Storage**

Deficiency Significant – The stainless steel hatches for the concrete clearwell did not appear to be watertight.

Response

New seals were ordered, received and installation was completed on January 17, 2020.

Deficiency Significant – The roof of the steel clearwell was not watertight. (The roof was compromised with small holes formed as the result localized corrosion.)

Response

The City has engaged Jacobs Engineering for design of a new Finished Water Pump Station and Clearwell Replacement Project. The project is ~25% complete, and the Engineering Report will be submitted to ODEQ as soon as a final version is available.

Deficiency Significant – The vent of the steel clearwell was not protected with 24-mesh and was not down-turned (was completely vertical.)

Response

The vent of the steel clearwell is a non-downturned style roof vent system and is currently protected with 24-mesh.

Deficiency - The steel clearwell hatch was not locked.

Response

A lock was installed on the clearwell hatch January 7, 2020.

Deficiency Significant – The Range Road Tower vent was not equipped with 24-mesh screen or down-turned. (Drone footage indicates expanded metal was used to cover the vent opening and was capable of keeping out birds but not insects.)

Response

The Range Road vent is a non-downturned style roof vent system and is currently protected with 24-mesh.

Deficiency - The Stallard Tank vent was not equipped with 24-mesh screen. (Drone footage indicates expanded metal was used to cover the vent opening and is capable of keeping out birds but not insects.)

Response

The Stallard Tank vent is a McGuire 24" Fail/Safe Roof Vent System that includes 24-mesh. It replaced an older vent in 2012.

- **Pumps, Pumping Facilities, and Controls**

Deficiency - The air-relief valve at the Highway 51 Pump Station was not equipped with 24-mesh screen.

Response

The 24-mesh screen was ordered, received, and installation was completed on January 15, 2020.

- **Monitoring, Reporting, and Data Verification**

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Deficiency - The Lead and Copper Rule sample sites were not individually categorized as being Tier1, Tier2, or Non-tier sites.

Response

Sampling and analyses for Lead and Copper records were found for 2003 to 2018 for numerous residential locations. However, the locations in the ODEQ approved sampling plan, and on SDWIS, were not categorized into individual tiers. The Authority's intention is to comply with the forthcoming Lead and Copper Rule update.

- Water System Management and operation - None identified
- Operator Compliance with State Requirements - None identified

Deficiencies Not Requiring a Schedule for Correction at this Time

Although many deficiencies were identified as 'Not Requiring a Schedule for Correction at this Time', the Authority appreciates the input to achieve complete and full compliance with the Lead and Copper Rule and the Clean Water Act. Much consideration will be given to these identified deficiencies and recommendations.

RAW WATER LINE INFORMATION REQUEST

During the sanitary survey, DEQ did not conduct a detailed assessment of the raw water transmission line; however, the line is one of the Authority's most critical assets. Following completion of the survey, DEQ would like to obtain information concerning the state of the line and its remaining useful life, procedures the Authority has for addressing line breaks and maintenance events while keeping the City supplied with water, and plans for future replacement. **As part of the Authority's response to this letter, please include raw water line information which addresses the points mentioned in this paragraph.**

Response

The raw water conveyance system was constructed in approximately 1980. The City hired Jason Consultants who conducted an extensive evaluation of the condition of the raw water line in 2013. The raw water line was found to be in good condition. Steel lines are capable of lasting 100 years if they are cathodically protected and the City's raw water line has a cathodic protection system. Inspections of the cathodic protection system have been conducted on the line in the past, with the next one scheduled for Calendar year 2022. An additional evaluation on the Raw Water Line condition is in the Authority's Capital Plan, including phases for rehabilitation or replacement, as necessary.

Proposed WTP Improvements

To expand on improvements at the WTP:

- *During 2019, B&V performed various pilot studies to determine the best path forward for water treatment process improvements. SUA staff and B&V have met with ODEQ staff to keep them informed as to our progress and path forward. Those pilot studies are wrapping up and draft Technical Reports are expected in the coming weeks. Once final, the results will be provided to the DEQ.*

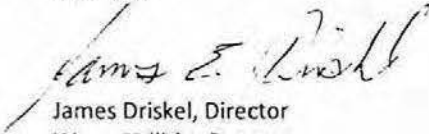
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- *The City of Stillwater has a draft WTP Facilities plan Report (includes alternative layouts for new chemical building(s), new filter complex and various other facilities) which constitutes about 10% design for the overall improvements.*
- *A new Finished Water Pump Station is under design by Jacobs. It will replace the existing pump batteries for the Northeast and Central Zones, and one of the clearwells.*
- *These improvements will address some of the items noted in the ODEQ Sanitary Survey letter.*

The SUA are now considering alternative project delivery methods as a way to accelerate the WTP construction schedule and are also considering funding and sequencing approaches for the estimated \$60 Million in proposed WTP projects.

If you have any questions or concerns please get in touch with me at your convenience.

Sincerely,



James Driskel, Director
Water Utilities Department
City of Stillwater

Cc: Travis Mensik, Regional Manager, ECLS, DEQ
Amanda Steadman, Environmental Specialist, ECLS, Stillwater DEQ Office



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Exhibit Log

Exhibit 3

OK DEQ Inadequate Response Letter – June 1, 2020



SCOTT A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

KEVIN STITT
Governor

*4/5/19
DUE
from
Ginger*

June 1, 2020

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

James Driskel, Water Utilities Director
Stillwater Utilities Authority
P.O. Box 1449
Stillwater, OK 74076

Re: Sanitary Survey on April 23-25, 2019 – Inadequate Response Received
PWSID No. OK1021220

Dear Mr. Driskel:

On December 30, 2019, the Department of Environmental Quality (DEQ) issued the final report for the sanitary survey conducted at the Stillwater Utilities Authority's (Authority) public water supply (PWS) system on April 23-25, 2019. In the report, DEQ identified deficiencies at the Authority's PWS system which required corrective action. Within thirty (30) days of receipt the report, the Authority was required to provide DEQ a response including a schedule of correction. On January 31, 2020, DEQ received an inadequate response from the Authority.

In the report, the Range Road Tower vent not being down-turned was identified as a significant deficiency. In its response, the Authority indicated that the vent was protected from rainwater and did not need to be downturned. After review, DEQ maintains that the current vent configuration is not acceptable and may be susceptible to rainwater intrusion. The vent must be replaced or a rain guard that covers the entire mesh portion of the vent must be installed.

In the report, the lack of an air gap between the fluoride mixing tank and the finished water line which supplies it was identified as a deficiency. Based on information provided in the Authority's response, it is unclear whether the solution provided by the Authority is adequate. An air gap must be at least 6 inches or two pipe diameters in size, whichever is larger. If preferred, however, the installation of a reduced pressure zone, backflow preventer in lieu of an air gap would be considered acceptable.

In the report, the lack of differential pressure-cell devices to monitor headloss across the individual filter media beds was identified as a deficiency. Installation of level indicators does not solve this deficiency, and instrumentation to measure headloss must be installed.

As noted in the report, the Authority did not have a current DEQ-approved residuals management plan. A plan is required whenever residuals are to be removed from the lagoons, regardless of whenever the plant was permitted. Please work with your DEQ Municipal Wastewater Engineer, Toby Harden, E.I., to develop such a plan.



Stillwater Utilities Authority

PWSID No. OK1021220

Sanitary Survey on April 23-25, 2019 – Inadequate Response Received

Page 2 of 2

As noted in the report, Lead and Copper Rule (LCR) sample sites were not individually categorized as being either Tier 1, Tier 2, or Non-Tier. Please work with your DEQ Compliance Coordinator, Jennifer Alig, to categorize your lead and copper sample sites into the appropriate tiers and to update your LCR sample plan as necessary.

In the report, several significant deficiencies were identified with the steel clearwell. First, the roof was not watertight as a result of localized corrosion. Second, the vent was neither protected by properly-sized mesh nor was the vent down-turned. While mesh screening was added to the clearwell and the clearwell itself is slated to be replaced, the deficiencies identified were not able to be adequately dealt with in a timely manner. It has been agreed between DEQ and the Authority to remove this clearwell from service and to utilize only the second clearwell. This is an acceptable solution to resolving these significant deficiencies, and no further action regarding these deficiencies is required by the Authority at this time.

In the report, the lack of adequate flocculation capacity (i.e., with all units in service) to supply the historical maximum daily demand of 12.1 million gallons per day (MGD) was cited as a deficiency requiring a schedule for correction. After review, DEQ has decided to reclassify this deficiency as one not requiring a schedule for correction at this time. No further action regarding this deficiency is required by the Authority. If at a later date, it is found that a lack of flocculation capacity is the cause for non-compliance with drinking water standards, DEQ may reconsider this reclassification at that time.

While in its response, the Authority provided dates for correction for some deficiencies, the Authority failed to include dates for all deficiencies which required a schedule of correction. An updated response, including a schedule of correction for these deficiencies, is now required. **Within thirty (30) days of receipt of this letter**, the Authority must submit an updated response including the requested schedule of correction. Also in the response, please provide pictures confirming that 24 mesh screening was added to the Range Road Tower and the Stallard Tank vents. If the Authority fails to provide an updated response, or if the Authority's updated response is not adequate, DEQ may proceed with enforcement actions, including the assessment of monetary penalties, to ensure compliance.

If you have any questions, you may reach me at (405) 702-8244 or write to me at the letterhead address.

Sincerely,



Ginger Sharkness, P.E., District Engineer
Public Water Supply Engineering and Enforcement Section
Water Quality Division

GS:MS:TA:GC:rh

MW:JA:TH

c: Travis Mensik, Regional Manager, ECLS, DEQ
Amanda Steadman, Environmental Specialist, ECLS, Stillwater DEQ Office



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Exhibit Log

Exhibit 4 Stillwater Final Non-Compliance Response – June 30, 2020

The City of
Stillwater
OKLAHOMA

6/18/24
DOL
Horn
Ginger

Department of Water Resources
723 S. Lewis Street/P.O. Box 1449
Stillwater, OK 74076-1449

Office: 405.742.8325
Web: stillwater.org

June 30, 2020

CERTIFIED MAIL, RETURN RECEIPT REQUESTED

Ginger Sharkness, P.E., District Engineer
Public Water Supply Engineering and Enforcement Section
Water Quality Division

RECEIVED

JUL 02 2020

Re: Sanitary Survey Inadequate Response Letter June 1, 2020
PWID No. OK1021220

WATER QUALITY DIVISION

Dear Ms. Sharkness:

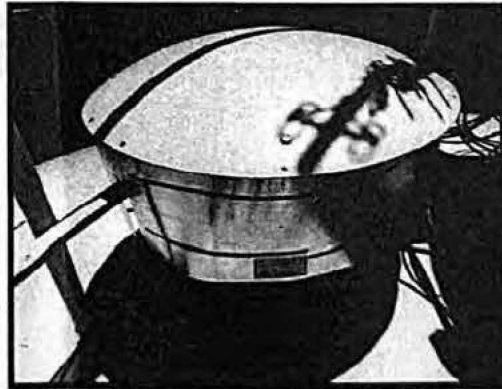
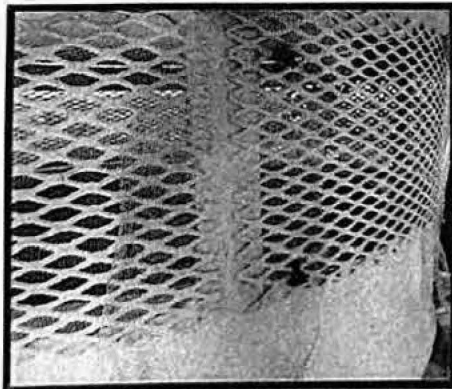
This is the City of Stillwater Utilities Authority updated response as requested in your letter of inadequate response received on June 3, 2020.

RANGE ROAD TOWER DEFICIENCY

The Range Road Tower vent not being down-turned was identified as a significant deficiency. In its response, the Authority indicated that the vent was protected from rainwater and did not need to be downturned. After review, DEQ maintains that the current vent configuration is not acceptable and may be susceptible to rainwater intrusion. The vent must be replaced or a rain guard that covers the entire mesh portion of the vent must be installed.

Response

The Range Road Tower vent was upgraded with a retrofit cover that completely covers the mesh screening on May 29, 2020. Please see below pictures of the upgrade:

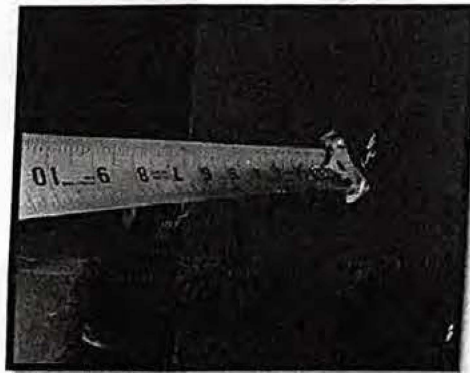


AIR GAP BETWEEN THE FLUORIDE MIXING TANK AND THE FINISHED WATER LINE DEFICIENCY

The lack of an air gap between the fluoride mixing tank and the finished water line which supplies it was identified as a deficiency. Based on information provided in the Authority's response, it is unclear whether the solution provided by the Authority is adequate. An air gap must be at least 6 inches or two pipe diameters in size, whichever is larger. If preferred, however, the installation of a reduced pressure zone, backflow preventer in lieu of an air gap would be considered acceptable.

Response

Below is a picture of inside of the fluoride mixing tank. The water has been turned off to show the 6" gap between the end of finished pipe and the top of the water. The adjustment to the float valve was completed January 23, 2020.



LACK OF DIFFERENTIAL PRESSURE-CELL DEVICES TO MONITOR HEADLOSS ACROSS THE INDIVIDUAL FILTER MEDIA BEDS DEFICIENCY

The lack of differential pressure-cell devices to monitor headloss across the individual filter media beds was identified as a deficiency. Installation of level indicators does not solve this deficiency, and instrumentation to measure headloss must be installed.

Response

The Authority has scheduled a representative from Cogent Automatic-Engineering to visit the water treatment plant on Wednesday July 1, 2020 to perform an evaluation for installation of the required differential pressure-cell devices.

THE AUTHORITY DID NOT HAVE A CURRENT DEQ-APPROVED RESIDUALS MANAGEMENT PLAN DEFICIENCY

The Authority did not have a current DEQ-approved residuals management plan. A plan is required whenever residuals are to be removed from the lagoons, regardless of whenever the plant was

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permitted. Please work with your DEQ Municipal Wastewater Engineer, Toby Harden, E.I., to develop such a plan.

Response

The Authority emailed Toby Harden, E.I., on June 25, 2020 with an attached contract and task schedule between the City of Stillwater and Carollo Engineering for preparation of a residuals management plan.

LEAD AND COPPER SAMPLE SITES NOT INDIVIDUALLY CATEGORIZED DEFICIENCY

Lead and Copper (LCR) sample sites were not individually categorized as being Tier 1, Tier 2, or Non-Tier. Please work with your DEQ Compliance Coordinator, Jennifer Alig, to categorize your lead and copper sample sites into the appropriate tiers and to update your LCR sample plan as necessary.

Response

Compliance with the Lead and Copper Rule (LCR) is accomplished in two phases:

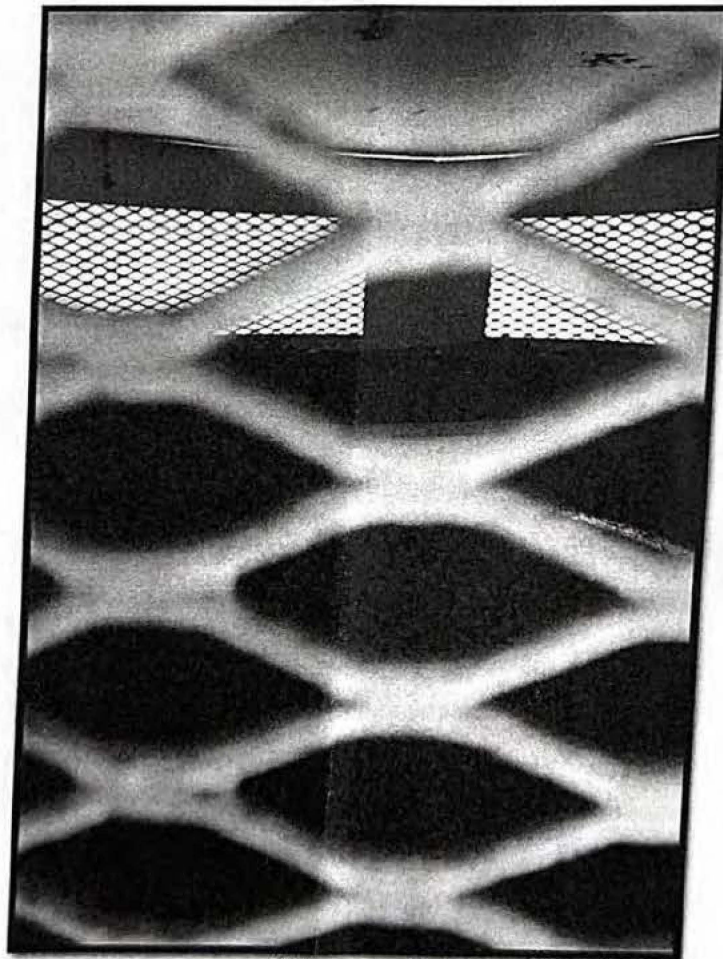
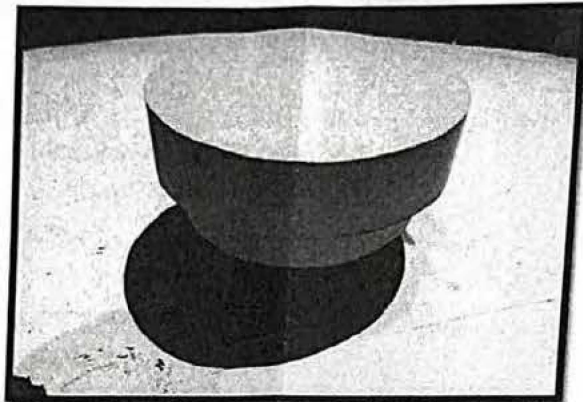
Phase 1 – The preparation of a survey to go out through mail to the owners of properties on the SDWIS existing house list is developed and under review by management. The surveys will serve the Authority to determine whether the properties are Tier 1, Tier 2, or Non-Tier. Two operator certified employees were tasked beginning in February 2020 to work with the County Assessor's office to determine the owner of the dwelling (since Stillwater's demographics has a high percentage of rental property) and a year for which the house was built.

Phase 2 – Once the information is gathered from the surveys and preliminary determinations of Tier categorization is in place, the need for testing will begin with sample collection and analyzation for lead and copper. This phase should be accomplished by January 2021.

The Authority is working with Jennifer Alig on this plan.

THE STALLARD TANK VENTS

Please see the pictures below of the Stallard Tank vent's confirmation of 24-mesh screen inside and below outer expanded metal screen:



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Dates requested for other deficiencies:

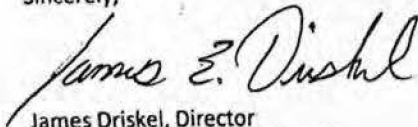
Currently, staff are working on a cost evaluation for rehabbing and expanding the current water treatment plant versus transitioning to a new water treatment plant at a new site. Staff intend to present this evaluation to Stillwater Utilities Authority during on October 2020 meeting. At that time, if the Authority is prepared to adopt a plan, staff will move forward with establishing a selection process for a Construction Manager at Risk (CMAR) and whether continuing with the current consultant(s) or seeking new proposals. A typical timeline for all phases (planning, design, construction, startup) of a large capital project ranges from three to five years. If the Authority deems it necessary to continue expanding the current facility all proposed plans will continue.

The deficiencies needing submitted dates to the DEQ that fall into this category are:

- The individual filter effluent flow meter were not operational. The response given in the January 29, 2020 report was the contract with Black and Veatch for evaluation and design and replacement impracticality*
- The filters did not have individual rate-of-flow controllers. The response given in the January 29, 2020 report was the contract with Black and Veatch to evaluate and design a new filter complex*
- There were no day tanks for the cationic polymer, ferric sulfate, or fluoride. The date of November 7, 2019 was given for the cationic polymer in the previous response and the ferric sulfate day tank was in operation prior to the April 23-25, 2019 Sanitary Survey. The fluoride tank induction system is a day tank and is included in the Black and Veatch contract for evaluation and design and replacement.*
- The residuals ponds did not have 3 feet or greater of freeboard. The freeboard has maintained at under 3 feet and is monitored during each rain event. Cleaning of the pond is scheduled to begin the summer of 2020.*
- The residuals ponds were not being managed to prevent the growth of unwanted vegetation. The maintenance of clearing the ponds of unwanted vegetation began in February 2020 and is continued as weather permits the use of equipment.*

If you have any questions or concerns please get in touch with me at your convenience.

Sincerely,



James Driskel, Director
City of Stillwater Water Utilities

Cc: Travis Mensik, Regional Manager, ECLS, DEQ
Amanda Steadman, Environmental Specialist, ECLS, Stillwater DEQ Office

Where the COLLEGE atmosphere and COWBOY spirit make everything come ALIVE.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Exhibit Log

Exhibit 5
Flushing Line Photo – March 2022





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Exhibit Log

Exhibit 6

Raw Water Line Repair Invoice – May 28
2024

Change Order No. 1

Date of Issuance: May 28, 2024

Effective Date:

(date signed by General Manager)

Project: Long Branch Creek Repair	Owner: Stillwater Utilities Authority	Owner's Contract No.: 24-WL02
Contract: EJCDC C-520 Agreement Between Owner and Contractor for Construction Contract		Date of Contract: January 22, 2024 Date of NTP: January 29, 2024
Contractor: Utility Field Services, LLC.		Engineer's Project No.:

The Contract Documents are modified as follows upon execution of this Change Order:

Description: This Change Order No. 1 (CO1) increases the Contract Price by \$30,545.41 and covers all materials, equipment, labor, profit and overhead needed for the below described work. CO1 includes (2) separate changes to various features of work including the following:

Line Item Quantity Differences (Attachment 1): The actual installed quantities varied from the contract bid quantities in several instances. Line Item 4 was not necessary due to the leak being larger than 1 inch in diameter. The constructed quantities for line items 8, 10, 11 and 12 are increased due to the washout along Long Branch Creek being significantly larger below the water surface than originally estimated at the time of the bid. The net changes due to these differences results in an increase to the Contract Price of \$24,779.70

Repair of Pitting in the Pipe (Attachment 2): During repair of the leak, severe pitting was observed in an exposed portion of the raw waterline near the leak. It was determined by City staff on site to have the contractor repair this pitting while the line was exposed to avoid future re-excavation. The work involved additional welding, steel patch materials, equipment and labor. The increase in Contract Price for this additional work is \$5,765.71.

CHANGE IN CONTRACT PRICE:

Original Contract Price:

\$219,930.00**CHANGE IN CONTRACT TIMES:**Original Contract Times: ☐ Working days ☒ Calendar daysSubstantial completion (days): 28 calendar daysReady for final payment (days): 48 calendar days[Increase] [Decrease] from previously approved Change Orders No. N/A to No. N/A:\$ N/A

Contract Price prior to this Change Order:

\$ 219,930.00[Increase] [Decrease] from previously approved Change Orders No. N/A to No. N/A:Substantial completion (days): N/AReady for final payment (days): N/A

Contract Times prior to this Change Order:

Substantial completion (days): 28 calendar daysReady for final payment (days or date): 48 calendar days

[Increase] [Decrease] of this Change Order:

\$ 30,545.41

[Increase] [Decrease] of this Change Order:

Substantial Completion: N/AFinal Completion: N/A

Contract Price incorporating this Change Order:

\$ 250,475.41

Contract Times with all approved Change Orders:

Substantial completion: 28 calendar daysReady for final payment: 48 calendar days

RECOMMENDED:

By: _____
Engineer:

Date: _____

Approved by Funding Agency (if applicable): _____

ACCEPTED:

By: Kimberly Meek
Owner: Kimberly Meek, General ManagerDate: 6-3-2024

ACCEPTED:

By: Sandra Matthews
Contractor: Sandra MatthewsDate: 5-30-2024

Date: _____

Attachment 1 : Line Item Differences

	CONTRACTED BID ITEMS	BID QTY	UNIT	UNIT COST	BID AMOUNT	INSTALLED QTY	INSTALLED AMOUNT	COST CHANGE FROM BID AMOUNT
1	Mobilization/Demobilization	1	LS	\$ 8,250.00	\$ 8,250.00	1	\$ 8,250.00	\$ -
2	Bonds and Insurance	1	LS	\$ 11,000.00	\$ 11,000.00	1	\$ 11,000.00	\$ -
3	Leak Repair, leak is above spring line of pipe, and average leak hole is 0.5 inches	1	EA	\$ 120,600.00	\$ 120,600.00	1	\$ 120,600.00	\$ -
4	Average leak hole diameter between 0.5 inch to 1 inch	1	EA	\$ 3,300.00	\$ 3,300.00	0	\$ -	\$ (3,300.00)
5	Average leak hole diameter 1 inch or greater	1	EA	\$ 6,600.00	\$ 6,600.00	1	\$ 6,600.00	\$ -
6	Clearing and grubbing of trees greater than 3 inches at breast height	100	SY	\$ 77.00	\$ 7,700.00	10	\$ 770.00	\$ (6,930.00)
7	Dewatering/Stream Diversion	1	EA	\$ 27,500.00	\$ 27,500.00	1	\$ 27,500.00	\$ -
8	Excavation for leak side	250	CY	\$ 22.00	\$ 5,500.00	680	\$ 14,960.00	\$ 9,460.00
9	Leak hole is below spring line	1	EA	\$ 6,600.00	\$ 6,600.00	1	\$ 6,600.00	\$ -
10	Restoration	600	SY	\$ 13.20	\$ 7,920.00	711	\$ 9,385.20	\$ 1,465.20
11	Washout Area Fill	200	CY	\$ 60.50	\$ 12,100.00	525	\$ 31,762.50	\$ 19,662.50
12	Type 1A Rip Rap	26	TN	\$ 110.00	\$ 2,860.00	66.2	\$ 7,282.00	\$ 4,422.00
	TOTALS				\$ 219,930.00			\$ 24,779.70

Original
Contract Price

Project Total \$ 244,709.70

Contract Price
Including Line Item
Differences

Attachment 2 to CO1 - 24WL02

Cost Itemization Summary for Change Order

Description of Work: Long Branch Creek - Additional Scope for Repair of Long Branch Creek Leak

Labor

Job Title	Hourly Rate	Hours	Amount
Welder	\$150.00	10.00	\$1,500.00
Superintendent	\$75.00	10.00	\$750.00
Skilled Laborer	\$42.00	10.00	\$420.00
Skilled Laborer	\$42.00	10.00	\$420.00

Total \$ 3,090.00

Equipment

Item	Hourly Cost	Hours	Amount
Truck & Tools	\$65.00	10.00	\$650.00
8" Water Pump	day rate		\$1,048.67

Total \$ 1,698.67

Materials

Items	Quantity	Cost / Unit	Amount
Flange	1.00	\$66.10	\$66.10
Gasket	1.00	\$6.71	\$6.71
Blind	1.00	\$66.10	\$66.10
Bolts	8.00	\$4.51	\$36.08
1' 30" and 6" Pipe	1.00	\$50.00	\$50.00
			\$0.00

Total \$224.99

Subcontracts

Company	Attachment	Amount

Total \$ -

Supplemental Costs & Special Consultants

Items	Unit	Quantity	Cost/Unit	Amount

Total \$ -

Cost Itemization Summary

Category	Cost	Markup	Amount
Labor	\$3,090.00	15%	\$3,553.50
Materials	\$224.99	15%	\$258.74
Equipment	\$1,698.67	15%	\$1,953.47
Subcontractors	\$0.00	5%	\$0.00
Supplemental & Special	\$0.00	0%	\$0.00

Total \$5,765.71

Appendix 3

2023 Stillwater LCR Results

2023 STILLWATER LEAD RESULTS (OK1021220)

90TH PERCENTILE NUMBER

30

LCR SITE #	ADDRESS	DATE SAMPLED	LEAD RANK	LEAD RESULTS
LC023	4606 N. Greenvale Cir.	06/13/23	1	BPQL
LC018	202 E. Mohawk	06/14/23	2	BPQL
LC015	208 E. Mohawk	06/13/23	3	BPQL
LC017	2801 N. Keller	06/13/23	4	BPQL
LC013	#52 Yellowbrick	06/13/23	5	BPQL
LC030	125 E. Marie	06/14/23	6	BPQL
LC012	#8 Windsor Cir.	06/12/23	7	BPQL
LC007	802 N. Dryden Cir.	06/15/23	8	BPQL
LC025	1623 Berkshire	06/18/23	9	BPQL
LC004	2802 N. Keller	06/21/23	10	BPQL
LC031	104 Crestwood Ct.	06/13/23	11	BPQL
LC021	1008 S. Blueridge	06/30/23	12	BPQL
LC056	1707 N. Briarwood	07/17/23	13	BPQL
LC050	921 S. Greystone	07/15/23	14	BPQL
LC040	1711 N. Lincoln	07/18/23	15	BPQL
LC068	919 E. Moore	07/17/23	16	BPQL
LC047	1015 S. Blueridge	07/18/23	17	BPQL
LC044	2807 S. Sangre	07/19/23	18	BPQL
LC042	2018 Karr	07/24/23	19	BPQL
LC053	923 Sunnybrook Ct.	07/20/23	20	BPQL
LC054	1508 N. Denver Ct.	08/04/23	21	BPQL
LC022	1207 S. Williamsfield	08/18/23	22	BPQL
LC001	713 N. Dryden Cir.	06/23/23	23	0.0010
LC070	2800 W. 32nd	07/19/23	24	0.0011
LC019	1423 N. Denver Ct.	07/31/23	25	0.0013
LC005	4602 N. Greenvale	06/21/23	26	0.0017
LC046	128 E. Marie	07/31/23	27	0.0017
LC034	1013 E. Dell	07/31/23	28	0.0023
LC009	1912 N. Grandview	07/10/23	29	0.0028
LC027	106 E. Mohawk	06/14/23	30	0.0031
LC020	606 E. Maple	07/28/23	31	0.0034
LC069	1021 W. Moore	08/03/23	32	0.0043
LC057	1010 E. Krayler	08/11/23	33	0.0067

2023 STILLWATER COPPER RESULTS (OK1021220)

90TH PERCENTILE NUMBER

30

LCR SITE #	ADDRESS	DATE SAMPLED	COPPER RANK	COPPER RESULTS
LC013	#52 Yellowbrick	06/13/23	1	BPQL
LC007	802 N. Dryden Cir.	06/15/23	2	BPQL
LC025	1623 S. Berkshire	06/18/23	3	BPQL
LC056	1707 N. Briarwood	07/17/23	4	BPQL
LC070	2800 W. 32nd	07/19/23	5	BPQL
LC054	1508 N. Denver Ct.	08/04/23	6	BPQL
LC022	1207 S. Williamsfield	08/18/23	7	BPQL
LC044	2807 S. Sangre	07/19/23	8	0.0117
LC019	1423 N. Denver Ct.	07/31/23	9	0.0131
LC069	1021 W. Moore	08/03/23	10	0.0133
LC015	208 E. Mohawk	06/13/23	11	0.0155
LC017	2801 N. Keller	06/13/23	12	0.0155
LC023	4606 N. Greenvale Cir.	06/13/23	13	0.0158
LC021	1008 S. Bluebridge	06/30/23	14	0.0166
LC012	#8 Windsor Cir.	06/12/23	15	0.0169
LC047	1015 S. Bluebridge	07/18/23	16	0.0173
LC031	104 Crestwood Ct.	06/13/23	17	0.0177
LC068	919 E. Moore	07/17/23	18	0.0178
LC020	606 E. Maple	07/28/23	19	0.0178
LC042	2018 Karr	07/24/23	20	0.0187
LC040	1711 N. Lincoln	07/18/23	21	0.0195
LC053	923 Sunnybrook Ct.	07/20/23	22	0.0223
LC050	921 S. Greystone	07/15/23	23	0.0233
LC005	4602 N. Greenvale	06/21/23	24	0.0247
LC027	106 E. Mohawk	06/14/23	25	0.0272
LC046	128 E. Marie	07/31/23	26	0.0292
LC004	2802 N. Keller	06/21/23	27	0.0350
LC009	1912 N. Grandview	07/10/23	28	0.0355
LC030	125 E. Marie	06/14/23	29	0.0364
LC001	713 N. Dryden Cir.	06/23/23	30	0.0414
LC018	202 E. Mohawk	06/14/23	31	0.0465
LC057	1010 E. Krayler	08/11/23	32	0.1120
LC034	1013 E. Dell	07/31/23	33	0.1390

Appendix 4

Stillwater LCR Sample Sites

City of Stillwater LCR Sample Sites

LCR Site #	Address	Build Date	Tier	Replaced Plumbing/Fixtures	Customer Leaks	Red/Green Stains	Aerator/Strain needs regular cleaning	Water Softener/In-line filter
LC001	713 N. DRYDEN CIR	1983	4/OTHER	NO	NO	NO	NO	NO
LC002	1713 N. JEFFERSON	1985	1	YES	YES	NO	NO	NO
LC003/LC077	124 E MARIE DR	1982	3					
LC004/LC074	2802 N KELLER DR	1984	1					
LC005/LC071	4602 N GREENVALE CIR	1985	1	YES (2015)	YES	NO	NO	YES
LC006/LC076	110 E ROGERS DR	1985	1					
LC007	802 N DRYDEN CIR	1978	3					
LC008	1422 N HIGHTOWER ST	1999	1					
LC009	1912 N GRANDVIEW ST	1984	4/OTHER	NO	NO	NO	NO	YES
LC010/LC043	223 S TIMBERCREST CT	1985	1					
LC011/LC038	2700 S WESTERN RD	1985	1					
LC012	8 W WINDSOR CIR	1984	1					
LC013	52 YELLOW BRICK DR	1984	1	YES	NO	NO	NO	NO
LC014/LC059	1212 E SUNRISE AVE	1983	1					
LC015	208 E MOHAWK AVE	1985	4/OTHER	YES	NO	NO	NO	YES (ICEMAKER)
LC016	2702 N MONROE ST	1983	1	YES (TOILETS)	NO	NO	NO	NO
LC017/LC075	2801 N KELLER DR	1985	1	YES (FEW YEARS AGO)	YES	NO	NO	YES (ICEMAKER)
LC018/LC072	202 E MOHAWK AVE	1985	4/OTHER	YES	YES (2015)	NO	YES	YES
LC019	1423 N DENVER CT	1983	1					
LC020	606 E MAPLE AVE	1983	1					
LC021	1008 S BLUERIDGE DR	1985	1	YES (2008,2013,2017)	YES	NO	NO	YES(ICEMAKER)
LC022	1207 S WILLIAMSFIELD DR	1985	4/OTHER	YES	YES	NO	NO	YES (ICEMAKER)
LC023	4606 N GREENVALE CIR	1985	4/OTHER	YES (2015)	NO	NO	YES	NO
LC024	1007 E DELL AVE	1985	4/OTHER	NO	YES	YES	YES	YES
LC025/LC052	1623 S BERKSHIRE DR	1984	1					
LC026/LC063	222 N DONALDSON ST	1985	1	YES (2017-2020)	NO	NO	NO	NO
LC027/LC073	106 E MOHAWK AVE	1983	4/OTHER	YES (2015)	YES (BROKEN)	NO	NO	NO
LC028/LC045	117 S BLAIR ST	1985	1					
LC029	204 E MARIE DR	1982	3	YES (FAUCETS 2009)	NO	NO	NO	NO
LC030/LC036	125 E MARIE DR	1981	3					
LC031/LC062	104 S CRESTWOOD CT	1984	4/OTHER	NO	NO	NO	NO	NO
LC032/LC067	110 S BLAIR ST	1985	1	YES	NO	NO	NO	NO
LC033/LC064	2209 E CRESTWOOD DR	1984	1					
LC034	1013 E DELL AVE	1985	1	YES (FAUCETS)	NO	YES (REDDISH)	NO	NO
LC035/LC060	1003 S GREYSTONE ST	1983	1					
LC037	1901 N WILDWOOD DR	1983	1					
LC040/LC065	1711 N LINCOLN ST	1985	4/OTHER	YES	YES	NO	NO	YES
LC042	2018 E KARR CT	1985	4/OTHER	YES (2016 FAUCETS)	NO	NO	NO	NO
LC044	2807 S SANGER RD	1985	1	YES (PREVIOUS OWNER)	NO	NO	YES	NO
LC046	128 E MARIE DR	1982	3	YES	YES	NO	NO	NO
LC047	1015 S BLUERIDGE DR	1982	3	YES (2005 FAUCETS)	NO	NO	NO	YES (WATER SOFT)
LC048	1005 W MOORE AVE	1985	1					
LC049	402 S WILLIS ST	1983	1					
LC050	921 S GREYSTONE ST	1990	1					

City of Stillwater LCR Sample Sites

LCR Site #	Address	Build Date	Tier	Residence Type	Water Main Material	COS Service Line Material	Customer Service Line Material	Plumbing Material	Rent/Own
LC001	713 N. DRYDEN CIR	1983	4/OTHER	SINGLE FAMILY	CPVC		UNKNOWN	PLASTIC	OWN
LC002	1713 N. JEFFERSON	1985	1	SINGLE FAMILY	ACP		UNKNOWN	COPPER	OWN
LC003/LC077	124 E MARIE DR	1982	3	SINGLE FAMILY	ACP		UNKNOWN	*REVIST BLANK SURVEY*	
LC004/LC074	2802 N KELLER DR	1984	1	SINGLE FAMILY	ACP		UNKNOWN		
LC005/LC071	4602 N GREENVALE CIR	1985	1	SINGLE FAMILY	ACP		UNKNOWN	COPPER	OWN
LC006/LC076	110 E ROGERS DR	1985	1	SINGLE FAMILY	ACP		UNKNOWN		
LC007	802 N DRYDEN CIR	1978	3	SINGLE FAMILY	ACP		UNKNOWN	*REVIST BLANK SURVEY*	
LC008	1422 N HIGHTOWER ST	1999	1	SINGLE FAMILY	ACP		UNKNOWN		
LC009	1912 N GRANDVIEW ST	1984	4/OTHER	SINGLE FAMILY	ACP		UNKNOWN	PLASTIC	OWN
LC010/LC043	223 S TIMBERCREST CT	1985	1	SINGLE FAMILY	UNKNOWN		UNKNOWN		
LC011/LC038	2700 S WESTERN RD	1985	1	SINGLE FAMILY	ACP		UNKNOWN	*REVIST BLANK SURVEY*	
LC012	8 W WINDSOR CIR	1984	1	SINGLE FAMILY	ACP		UNKNOWN	*REVIST BLANK SURVEY*	
LC013	52 YELLOW BRICK DR	1984	1	SINGLE FAMILY	ACP		UNKNOWN	COPPER	OWN
LC014/LC059	1212 E SUNRISE AVE	1983	1	SINGLE FAMILY	ACP		UNKNOWN		
LC015	208 E MOHAWK AVE	1985	4/OTHER	SINGLE FAMILY	ACP		UNKNOWN	PLASTIC	OWN
LC016	2702 N MONROE ST	1983	1	SINGLE FAMILY	ACP		UNKNOWN	COPPER	OWN
LC017/LC075	2801 N KELLER DR	1985	1	SINGLE FAMILY	ACP		UNKNOWN	COPPER	OWN
LC018/LC072	202 E MOHAWK AVE	1985	4/OTHER	SINGLE FAMILY	ACP		UNKNOWN	PLASTIC	OWN
LC019	1423 N DENVER CT	1983	1	SINGLE FAMILY	PVC		UNKNOWN	*REVIST BLANK SURVEY*	
LC020	606 E MAPLE AVE	1983	1	SINGLE FAMILY	ACP		UNKNOWN		
LC021	1008 S BLUERIDGE DR	1985	1	SINGLE FAMILY	ACP		UNKNOWN	COPPER/PLASTIC	OWN
LC022	1207 S WILLIAMSFIELD DR	1985	4/OTHER	SINGLE FAMILY	ACP		UNKNOWN	PLASTIC	OWN
LC023	4606 N GREENVALE CIR	1985	4/OTHER	SINGLE FAMILY	ACP		UNKNOWN	PLASTIC	OWN
LC024	1007 E DELL AVE	1985	4/OTHER	SINGLE FAMILY	ACP		UNKNOWN	PLASTIC	RENT
LC025/LC052	1623 S BERKSHIRE DR	1984	1	SINGLE FAMILY	ACP		UNKNOWN		
LC026/LC063	222 N DONALDSON ST	1985	1	SINGLE FAMILY	CIP		UNKNOWN	COPPER	OWN
LC027/LC073	106 E MOHAWK AVE	1983	4/OTHER	SINGLE FAMILY	ACP		UNKNOWN	PLASTIC	OWN
LC028/LC045	117 S BLAIR ST	1985	1	SINGLE FAMILY	ACP		UNKNOWN		
LC029	204 E MARIE DR	1982	3	SINGLE FAMILY	ACP		UNKNOWN	COPPER/PLASTIC	OWN
LC030/LC036	125 E MARIE DR	1981	3	SINGLE FAMILY	ACP		UNKNOWN		
LC031/LC062	104 S CRESTWOOD CT	1984	4/OTHER	SINGLE FAMILY	UNKNOWN		UNKNOWN	PLASTIC	OWN
LC032/LC067	110 S BLAIR ST	1985	1	SINGLE FAMILY	ACP		UNKNOWN	UNKNOWN	OWN
LC033/LC064	2209 E CRESTWOOD DR	1984	1	SINGLE FAMILY	UNKNOWN		UNKNOWN		
LC034	1013 E DELL AVE	1985	1	SINGLE FAMILY	ACP		UNKNOWN	COPPER/PLASTIC	OWN
LC035/LC060	1003 S GREYSTONE ST	1983	1	SINGLE FAMILY	ACP		UNKNOWN		
LC037	1901 N WILDWOOD DR	1983	1	SINGLE FAMILY	ACP		UNKNOWN		
LC040/LC065	1711 N LINCOLN ST	1985	4/OTHER	SINGLE FAMILY	ACP		UNKNOWN	CAST IRON/PLASTIC	OWN
LC042	2018 E KARR CT	1985	4/OTHER	SINGLE FAMILY	ACP		UNKNOWN	PLASTIC	OWN
LC044	2807 S SANGER RD	1985	1	SINGLE FAMILY	ACP		UNKNOWN	COPPER/PLASTIC	OWN
LC046	128 E MARIE DR	1982	3	SINGLE FAMILY	ACP		UNKNOWN	UNKNOWN	OWN
LC047	1015 S BLUERIDGE DR	1982	3	SINGLE FAMILY	ACP		UNKNOWN	*UNKNOWN*	OWN
LC048	1005 W MOORE AVE	1985	1	SINGLE FAMILY	ACP		UNKNOWN		
LC049	402 S WILLIS ST	1983	1	SINGLE FAMILY	ACP		UNKNOWN		
LC050	921 S GREYSTONE ST	1990	1	SINGLE FAMILY	ACP		UNKNOWN		

City of Stillwater LCR Sample Sites

LCR Site #	Address	Build Date	Tier	Residence Type	Water Main Material	COS Service Line Material	Customer Service Line Material	Plumbing Material	Rent/Own
LC051	914 S GREYSTONE ST	1982	3	SINGLE FAMILY	ACP		UNKNOWN	*UNKNOWN*	OWN
LC053	923 N SUNNYBROOK CT	1982	3	SINGLE FAMILY	ACP		UNKNOWN	COPPER/PLASTIC	OWN
LC054	1508 N DENVER CT	1982	3	SINGLE FAMILY	PVC		UNKNOWN		
LC055	1420 N DENVER CT	1982	3	SINGLE FAMILY	PVC		UNKNOWN		
LC056	1707 N BRIARWOOD ST	1984	4/OTHER	SINGLE FAMILY	ACP		UNKNOWN	PLASTIC	OWN
LC057	1010 E KRAYLER AVE	1983	1	SINGLE FAMILY	ACP		UNKNOWN	COPPER/LEAD/PLASTIC	OWN
LC061	2109 E CRESTWOOD DR	1984	1	SINGLE FAMILY	UNKNOWN		UNKNOWN		
LC068	919 E MOORE AVE	1979	4/OTHER	SINGLE FAMILY	ACP		UNKNOWN	PLASTIC	RENT
LC069	1021 W MOORE AVE	1985	1	SINGLE FAMILY	ACP		UNKNOWN		
LC070	2800 W 32ND AVE	1983	1	SINGLE FAMILY	ACP		UNKNOWN	COPPER	OWN
LC078	1501 N DENVER CT	1984	1	SINGLE FAMILY	PVC		UNKNOWN		
LC080	1406 N DENVER CT			NO SUCH ADDRESS					

City of Stillwater LCR Sample Sites

LCR Site #	Address	Build Date	Tier	Replaced Plumbing/Fixtures	Customer Leaks	Red/Green Stains	Aerator/Strain needs regular cleaning	Water Softener/In-line filter
LC051	914 S GREYSTONE ST	1982	3	?	?	NO	NO	NO
LC053	923 N SUNNYBROOK CT	1982	3	YES (2020)	NO	NO	YES	NO
LC054	1508 N DENVER CT	1982	3					
LC055	1420 N DENVER CT	1982	3					
LC056	1707 N BRIARWOOD ST	1984	4/OTHER	NO	NO	YES (REDDISH)	NO	NO
LC057	1010 E KRAYLER AVE	1983	1	YES (JUNE 2019)	NO	NO	NO	YES
LC061	2109 E CRESTWOOD DR	1984	1					
LC068	919 E MOORE AVE	1979	4/OTHER	NOT SURE	NO	NO	NO	NO
LC069	1021 W MOORE AVE	1985	1					
LC070	2800 W 32ND AVE	1983	1	YES (FAUCETS/PLUMBING)	YES	YES (GREENISH/WHITE)	NO	YES (ICEMAKER)
LC078	1501 N DENVER CT	1984	1					
LC080	1406 N DENVER CT							

Appendix 5

EPA Laboratory Audit - June 6, 2024

Section I – INTRODUCTION

PURPOSE OF THE INSPECTION

EPA Inspector Mariela Reyna conducted a lab audit as part of the Safe Drinking Water Act (SDWA) inspection on June 6, 2024. The scope of this audit is to evaluate the compliance of the facility's laboratory and sampling requirements as prescribed in the SDWA. The opening conference was held in conjunction with the opening conference of the SDWA inspection.

FACILITY DESCRIPTION

The facility's laboratory is not accredited under national or private programs. There are eight (8) full time operators that perform laboratory analysis. The laboratory performs sample analyses of the following parameters: pH, Temperature, Free Chlorine, Total Chlorine, Free Ammonia, Total Ammonia, Turbidity, Hardness, Conductivity, Alkalinity, Fluoride, Ozone.

Section II – OBSERVATIONS

Reagents, standards, and equipment

1. Reagents were not labeled with the date they were opened (refer to Section V, Photographs 1-4).
2. One (1) bottle containing a clear reagent was not labeled with any identifying information (refer to Section V, Photograph 5).
3. Bottles used for chlorine blanks were not labeled with any identifying information (refer to Section V, Photograph 6).
4. Bottles that were refilled with reagents from original reagent bottles were not labeled with the expiration date of their contents (refer to Section V, Photograph 7).
5. The technician communicated that plastic sample bottles are re-used for sample collection. Samples are only labeled with the location for which they are to be collected. The date and time of collection is not labeled on the bottles nor is there any identification of technician that conducts the sampling. There is no written record of this information maintained (refer to Section V, Photograph 8).
6. The thermometer in the refrigerator was not NIST certified, and its initial date of operation was unknown.
7. The pH meter was last certified by the manufacture in 2020.
8. There is no written record of the frequency required for instrument calibrations.
9. Distilled water purchased from a grocery store or similar general store was used in place of reagent water and deionized water. There was no documentation available to demonstrate this water meets the requirements for reagent water nor that it is a substitute for deionized water (refer to Section V, Photograph 9).
10. Various types of oral medications were seen on the laboratory counter where procedures were being performed (refer to Section V, Photograph 10).

11. There was no hand soap present in the lab nor in close proximity to the laboratory sink. (refer to Section V, Photograph 11).

Standard operating procedures and supporting documentation

12. The SOPs provided by the facility were not properly maintained, as detailed below (refer to Section V, Photograph 12).
 - a. They did not reference an approved EPA method.
 - b. There was no creation or review date listed and the document itself does not appear to be a controlled document.
 - c. They did not include sample storage or holding time information, sample preservation requirements, calibration or quality control procedures, equipment maintenance, or retesting requirements or procedures.
 - d. The SOP did not include information for the making or preparation of reagents, nor does it say to use manufacturers reagents.
 - e. Unauthorized changes were made to documents.
13. There was no master list or table of content sheet that listed all available SOPs.
14. There were no SOPs for the collection and submission of samples tested by contractors.
15. The Alkalinity SOP describes the addition of reagents measured in drops and not milliliters (mL) as stated in the approved EPA method, *Standard Methods* 2320 B. Alkalinity (refer to Section V, Photograph 12).
16. The technician communicated that samples are collected in plastic bottles and then used for the various daily analysis. Laboratory records suggest the use of the approved EPA standard method, *Standard Method* 4500-CL G. Colorimetric for analyses of Total Chlorine. Per this method, the samples must be collected in pre-treated glass containers. The technician communicated that Alconox® is used to clean laboratory glassware. This is not an adequate chemical to pre-treat glassware for Total Chlorine testing per this method (refer to Section V, Photograph 13).
17. There is no written SOP for Conductivity.
18. There is no written record of employee SOP training.
19. There is no written description of the specific duties and required analysis to be conducted by laboratory technicians.

Bench Sheets and supporting documentation

20. The bench sheets reviewed at the facility were not properly maintained, as detailed below (refer to Section V, Photograph 14).
 - a. There are no references to approved EPA methods listed on the bench sheet.
 - b. The bench sheets did not have a proper description of the abbreviations for sampling locations used.
 - c. Units for the results of analyses were not used on any of the bench sheets reviewed.
 - d. The time of sampling collection was autogenerated. Neither the actual time of sample collection nor sample analysis are recorded.
 - e. There is no indication whether the same technician is both collecting the samples and performing the analysis.
 - f. The bench sheets and their data are not reviewed and approved.

- g. There is no designated location on the daily bench sheet to record the location of samples for Distribution Chlorine Residuals.
- 21. There is no record of quality control or assurance being conducted for Free and Total Chlorine.
- 22. The temperature of the refrigerator is not being properly monitored.
- 23. There are no bench sheets created or records for non-routine and repeat samples.
- 24. The Jar Test bench sheet does not include the necessary information, as detailed below (refer to Section V, Photograph 15).
 - a. The time of sampling.
 - b. The time analyses began and ended.
 - c. The technician that performed the sampling and analyses.

Section III – AREAS OF CONCERN

1. **Reagents, standards, and equipment:** Per the SDWA, all methods performed for the monitoring and analytical requirements for public water systems shall comply with EPA approved methods, listed in 40 CFR Part 141, or the alternative methods listed in appendix A to subpart C. Equipment used for measuring samples, reagents, reagent water, or standards must meet the minimum accuracy and precision levels per each EPA approved method; measurement grade glassware must be used for measuring liquids in lieu of glassware whose primary function is for storage or containment. All reagents, reagent water, standards, and equipment must meet the requirements per each EPA approved method. Reagents and standards must be clearly labeled with open and expiration dates, to ensure they are not used past expiration. Unless otherwise noted by the manufacturer, liquid reagents and standards have a shelf life of one (1) year after opening. Should the manufacturer expiration date occur before the one year, the manufacturer's expiration takes precedence. EPA approved methods may further specify the shelf life of reagents, standards, or solutions created in house for the purpose of analysis or calibration. Expired reagents and standards must not be used in analysis or calibration as they do not meet the quality assurance and quality control (QA/QC) requirements per the EPA approved methods. All reagents and standards used in analysis must be clearly labeled with contents and expiration date to ensure all QA/QC requirements are fulfilled. Personal safety risks can result from the ingestion and contamination of oral medications. Eating, taking medication, and storing medication in laboratories where hazardous materials are used is not a safe practice. In addition, these practices can contaminate reagents and affect the integrity of analyses being performed. Another concern is the absence of hand soap near the sink. It is vital that hands be properly washed before and after analyses to prevent contamination of the sample and reagents. It is also a concern since many of the reagents used are hazardous and can cause serious issues when there is prolonged skin contact.
2. **Standard operating procedures and supporting documentation:** Per the SDWA, all methods performed for the analysis of pollutants shall comply with EPA approved methods (40 CFR Part 141, Subpart C). Facilities must have written SOPs documenting the use of EPA approved methods and QA/QC measures to ensure compliance with the SDWA (40 CFR Part 141, Subpart C). To ensure compliance with these requirements, SOPs should be regularly reviewed, updated, and fully and correctly cite the EPA approved methods. The techniques and methods utilized in the laboratory for analysis must meet the method requirements as detailed in an EPA approved

method. SOPs and bench sheets must follow a referenced EPA approved method, any deviation may result in the subsequent data to be ruled invalid.

- a. Document control procedures set the framework for how controlled documents are approved updated, tracked, and distributed. A controlled document is a reference document which, through the course of its lifecycle, may be reviewed, modified, and distributed several times. The use of document control procedures and maintenance of controlled documents helps to ensure policies and procedures of the facility meet the requirements of applicable regulations, as set forth by a regulating entity.
 - b. Proper training and adequate documentation of training records ensures that proper EPA approved methods are being followed, without deviations, by all technicians in the laboratory.
3. **Bench sheets and supporting documentation:** Bench sheets must record the data and information as required per the EPA approved methods used for analysis and the SDWA. The SDWA and EPA approved methods require the time of both sample collection and sample analysis. The SDWA requires the identification of both the person who collected the sample and the person responsible for performing analysis (40 CFR 141.33). Additionally, the SDWA requires a reference to the EPA approved method used for analysis as well as the results of the analysis, including all information gathered during sample analysis (40 CFR 141.33).
 - a. The time for both sample collection and sample analysis are recorded to ensure analysis is performed within the hold time as required by the EPA approved method used for analysis.
 - b. The data recorded on bench sheets should clearly demonstrate the methods used and be representative of everything the technician performed during analysis.

Section IV – FOLLOW UP

The closing conference was held in conjunction with the closing conference of the SDWA inspection, after the on-site audit. Additional information regarding SOPs, laboratory instrumentation, and personal records was received by EPA on June 13, 2024, after exiting the facility on June 6, 2024.

Section V – Photograph Log

Section V contains 15 photos that were taken during the EPA laboratory audit that was conducted on June 6, 2024.



Photograph 1.

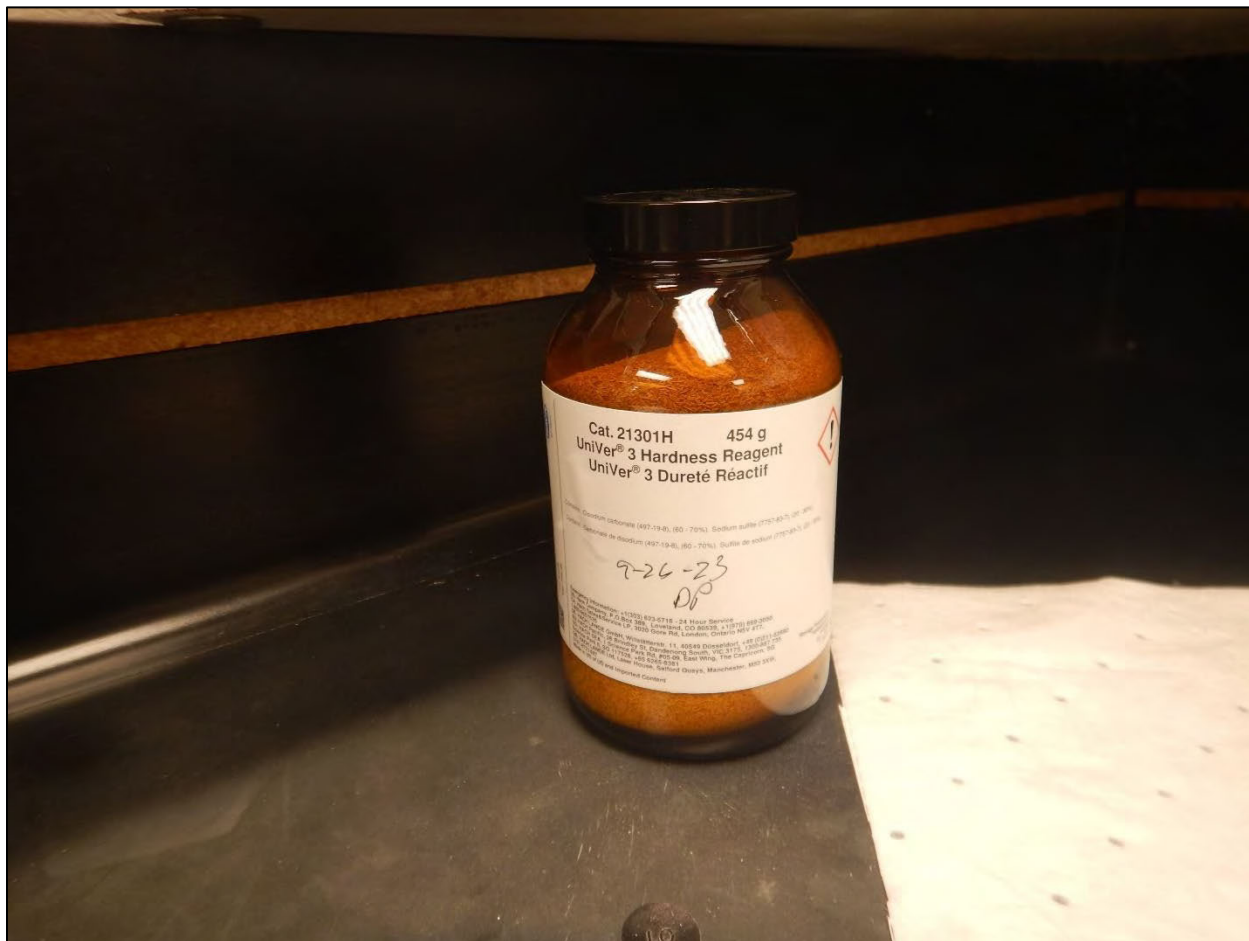
Photo File Name: DSCN5414.JPG

Date of Photo: 06/06/2024

Time of Photo: 9:49 AM

Photographer: Mariela Reyna

Description: Reagents in cabinet without date opened properly labeled.



Photograph 2.

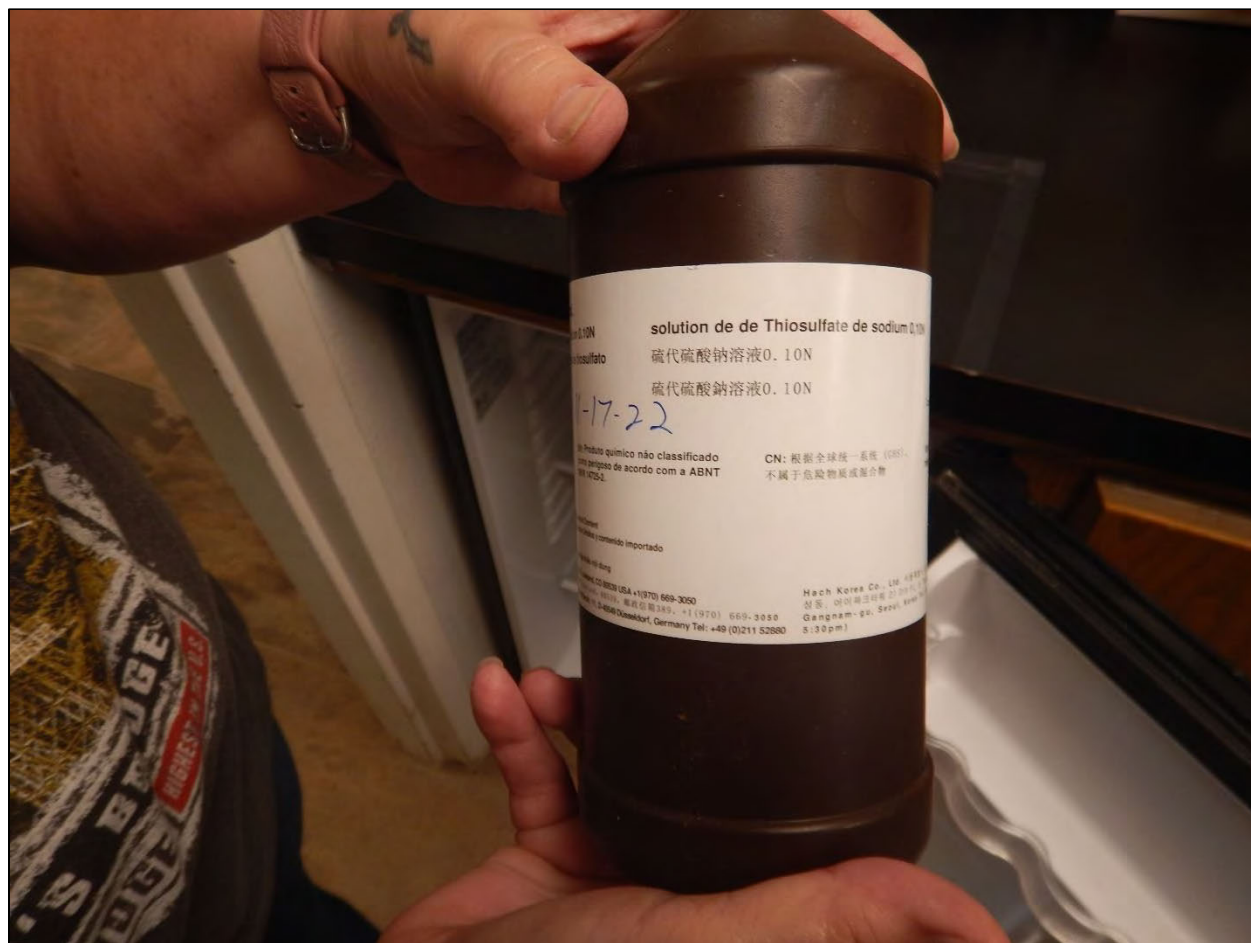
Photo File Name: DSCN5416.JPG

Date of Photo: 06/06/2024

Time of Photo: 9:49 AM

Photographer: Mariela Reyna

Description: Reagent on counter with only date received labeled and without date opened labeled.



Photograph 3.

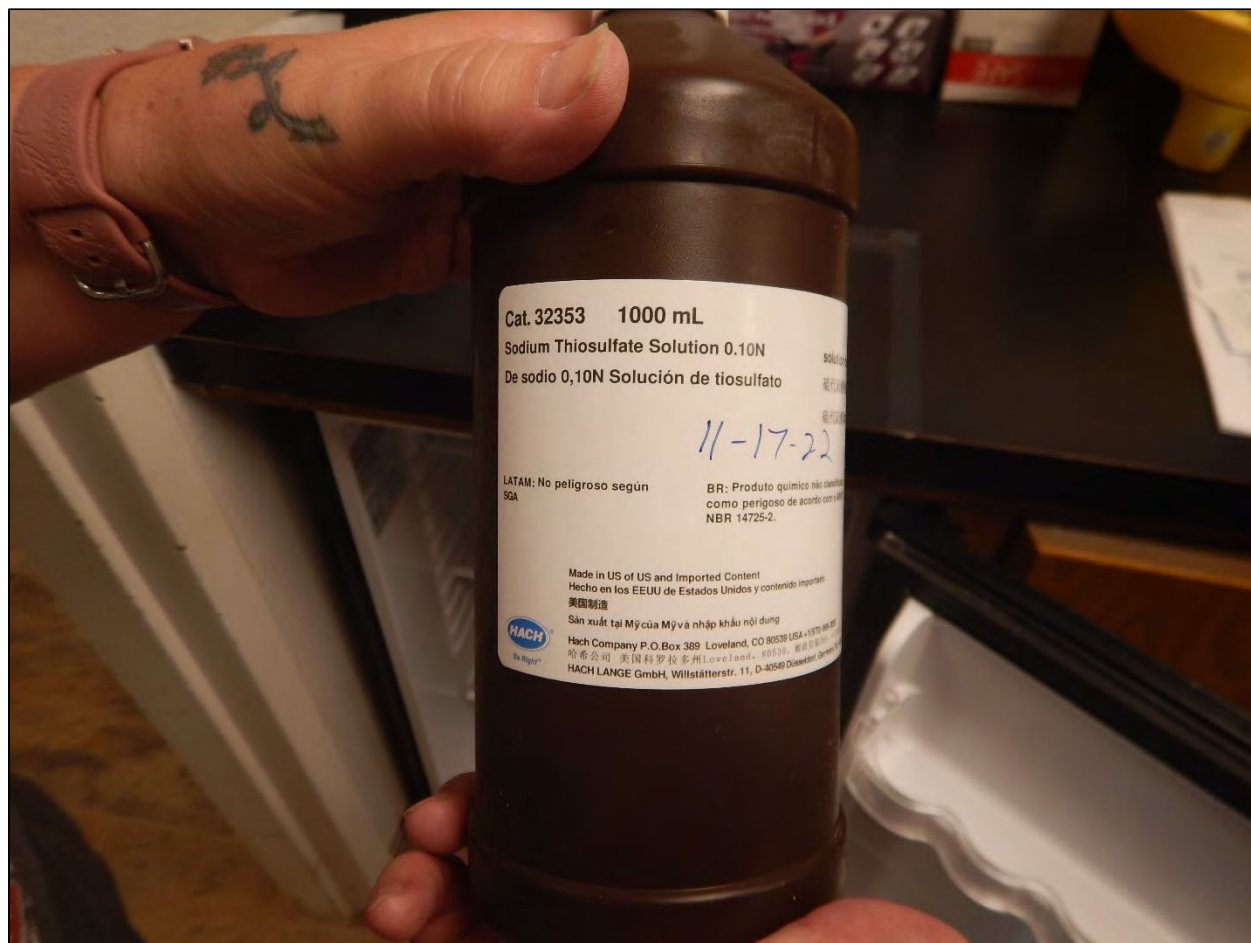
Photo File Name: DSCN5418.JPG

Date of Photo: 06/06/2024

Time of Photo: 9:50 AM

Photographer: Mariela Reyna

Description: Reagent in refrigerator with only date received labeled and without date opened labeled.



Photograph 4.

Photo File Name: DSCN5419.JPG

Date of Photo: 06/06/2024

Time of Photo: 9:50 AM

Photographer: Mariela Reyna

Description: Reagent in refrigerator with only date received labeled and without date opened labeled.



Photograph 5.

Photo File Name: DSCN5477.JPG

Date of Photo: 06/06/2024

Time of Photo: 10:03 AM

Photographer: Mariela Reyna

Description: Bottles on counter containing a clear reagent not labeled with any identifying information.



Photograph 6.

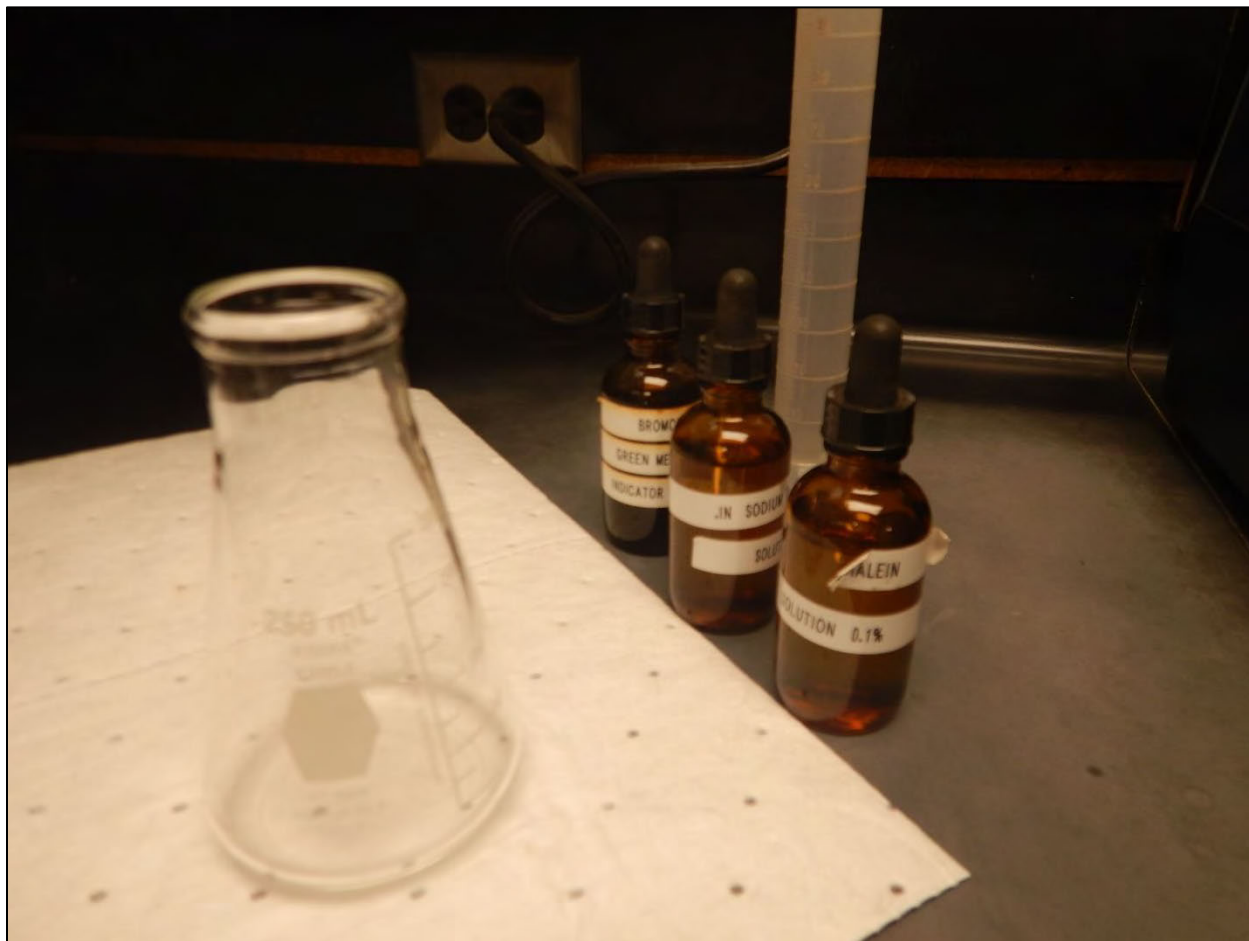
Photo File Name: DSCN5433.JPG

Date of Photo: 06/06/2024

Time of Photo: 9:55 AM

Photographer: Mariela Reyna

Description: Bottles on counter used for chlorine blanks and chlorine testing without identifying labels.



Photograph 7.

Photo File Name: DSCN5433.JPG

Date of Photo: 06/06/2024

Time of Photo: 9:55 AM

Photographer: Mariela Reyna

Description: Bottles on counter that were refilled with reagents from original reagent bottles not labeled with the expiration date of their contents.



Photograph 8.

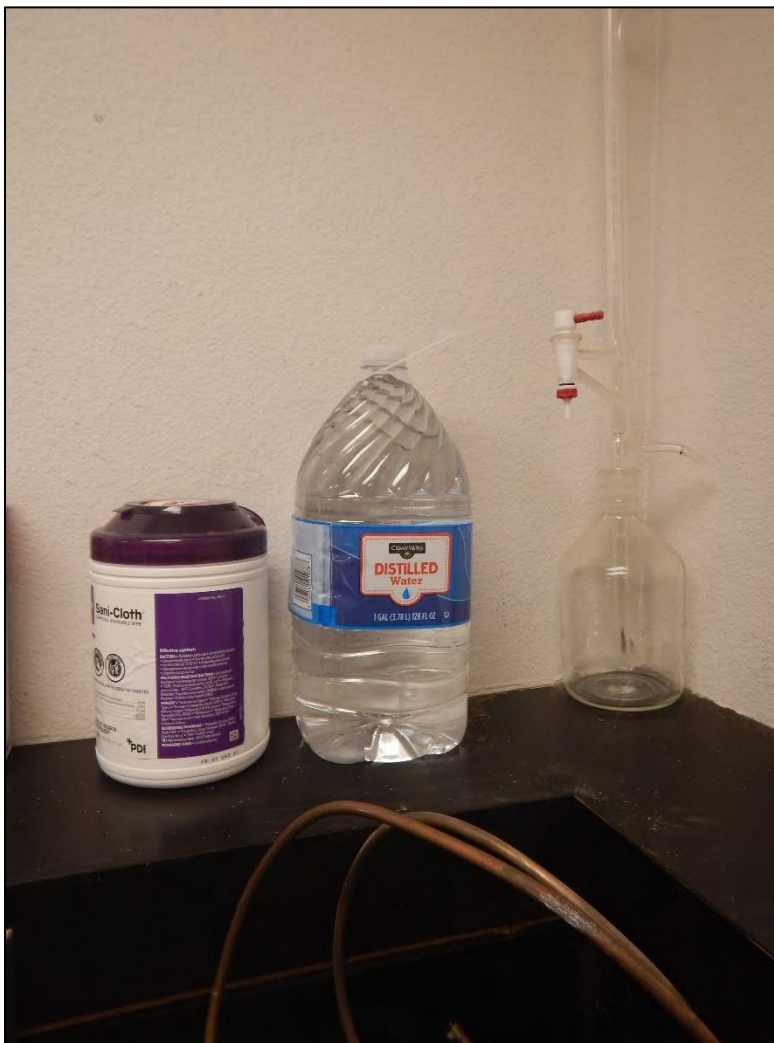
Photo File Name: DSCN5446.JPG

Date of Photo: 06/06/2024

Time of Photo: 9:57 AM

Photographer: Mariela Reyna

Description: Plastic bottles used for sample collection.



Photograph 9.

Photo File Name: DSCN5458.JPG

Date of Photo: 06/06/2024

Time of Photo: 9:59 AM

Photographer: Mariela Reyna

Description: Commercial distilled water purchased from a grocery store or similar general store on laboratory counter.



Photograph 10.

Photo File Name: DSCN5449.JPG

Date of Photo: 06/06/2024

Time of Photo: 9:58 AM

Photographer: Mariela Reyna

Description: Various types of oral medications on laboratory counter.



Photograph 11.

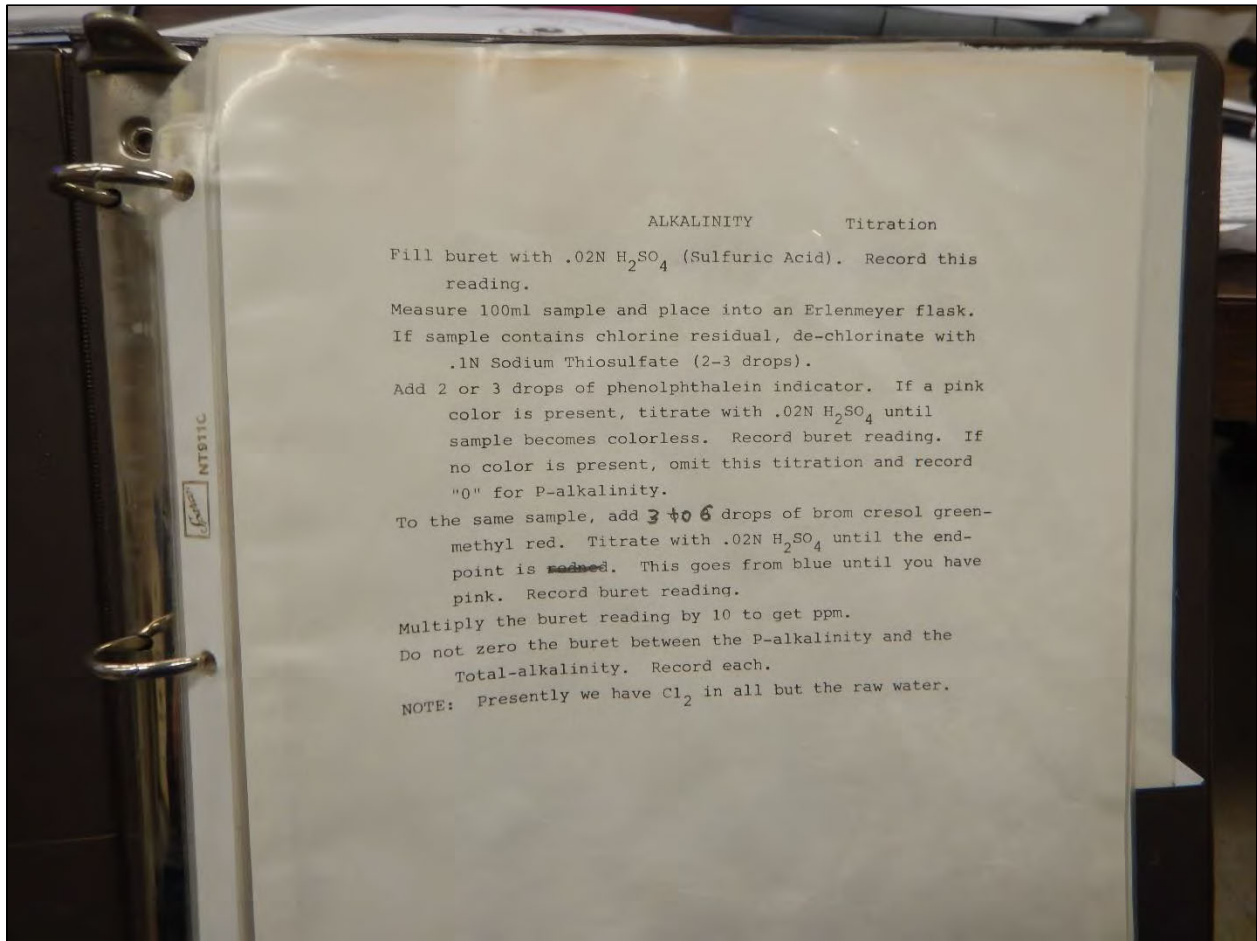
Photo File Name: DSCN5444.JPG

Date of Photo: 06/06/2024

Time of Photo: 9:57 AM

Photographer: Mariela Reyna

Description: Laboratory sink with no hand soap in immediate proximity.



Photograph 12.

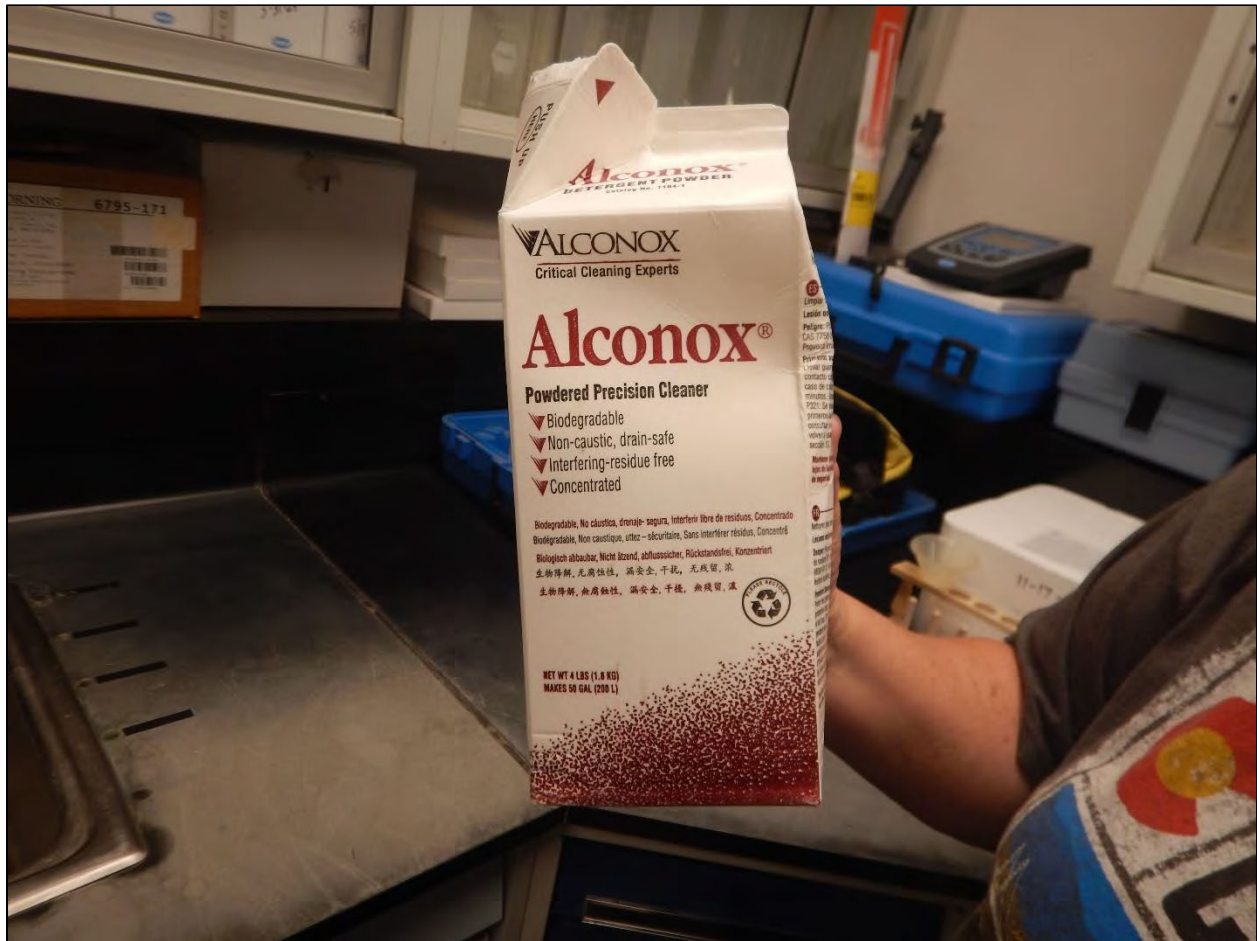
Photo File Name: DSCN5343.JPG

Date of Photo: 06/06/2024

Time of Photo: 8:44 AM

Photographer: Mariela Reyna

Description: Alkalinity SOP with unauthorized changes. Additional SOPs followed similar format.



Photograph 13.

Photo File Name: DSCN5468.JPG

Date of Photo: 06/06/2024

Time of Photo: 10:01 AM

Photographer: Mariela Reyna

Description: Alconox® used to clean laboratory glassware.

STILLWATER DAILY LAB ANALYSIS DATE 6-5-24 Day Wednesday AM Operator ERC PM Operator mvo AM Flow 6.5 MGD PM Flow 6.5 MGD

AM Shift

Chlorine Total and Free Chloramines									
S. SCU		M. SCU		N. SCU		Free		Total	
1:00	3.6	2.1	3.35	2.2	1.01				
3:00	3.5	1.9	3.28	1.6					
5:00	3.6	1.9	3.32	1.8					

Turbidity									
S. SCU		M. SCU		N. SCU		Free		Total	
1:00	25.3	36	30	46	07	08			
3:00	14.4	41	40	54	09	08			

pH & Temperature									
pH		Temp		pH		Temp		pH	
1:00	7.70	20.4	77.9	18	19.9	78.2	19.9	7.57	20.3
3:00	7.72	21.4	77.5	21.2	71.2	21.2	71.4	7.6	21.6

AM Shift

Calcium Stability Test									
pH		Temp		pH		Temp		pH	
1:00	7.59	8.2	7.78	8.0	+2				
3:00	7.59	8.2	7.78	8.0	+2				

Ozone									
PPD		Dose		N		S		%	
1:00	140	280	110	280	18	28			
3:00	140	280	110	280	18	28			

% Solids									
S. SCU		M. SCU		N. SCU		Free		Total	
1:00	22	24	21	24					
3:00	22	24	21	24					

Hardness									
pH		Temp		pH		Temp		pH	
1:00	190	113	180	153					
3:00	190	113	180	153					

P-Alkalinity									
pH		Temp		pH		Temp		pH	
1:00	12	10	186						
3:00	12	10	186						

T-Alkalinity									
pH		Temp		pH		Temp		pH	
1:00	12	10	186						
3:00	12	10	186						

PM Shift

Chlorine Total and Free Chloramines									
S. SCU		M. SCU		N. SCU		Free		Total	
13:00	3.7	2.0	3.12	1.5					
17:00	3.5	2.5	3.34	2.2	1.8				
21:00	3.6	1.2	3.51	1.7					

Turbidity									
S. SCU		M. SCU		N. SCU		Free		Total	
13:00	15.2	14.9	39	29	41	26	1.08		
17:00	14.9	36	33	42	26	1.07			
21:00	10.6	14.9	34	30	36	0.7	0.8		

pH & Temperature									
pH		Temp		pH		Temp		pH	
13:00	7.77	25.2	78.0	25.2	78.0	25.2	78.0	7.54	25.4
17:00	7.77	25.2	78.0	25.2	78.0	25.2	78.0	7.54	25.4
21:00	7.77	25.2	78.0	25.2	78.0	25.2	78.0	7.54	25.4

PM Shift

Ozone									
PPD		Dose		N		S		%	
13:00	151	280	111	280	18	28			
17:00	150	280	110	280	18	28			
21:00	150	280	110	280	18	28			

% Solids									
S. SCU		M. SCU		N. SCU		Free		Total	
13:00	23	73	20	73					
17:00	23	73	20	73					
21:00	23	73	20	73					

Hardness									
pH		Temp		pH		Temp		pH	
13:00	172	112	120	146					
17:00	172	112	120	146					
21:00	172	112	120	146					

P-Alkalinity									
pH		Temp		pH		Temp		pH	
13:00	12	10	127	128	109	73			
17:00	12	10	127	128	109	73			
21:00	12	10	127	128	109	73			

T-Alkalinity									
pH		Temp		pH		Temp		pH	
13:00	12	10	127	128	109	73			
17:00	12	10	127	128	109	73			
21:00	12	10	127	128	109	73			

Distribution Chlorine Residuals									
Total		Free		Total		Free		Total	
13:00	2.2	1.53	1.5	2.9	1.44	2.2			
17:00	2.2	1.53	1.5	2.9	1.44	2.2			
21:00	2.2	1.53	1.5	2.9	1.44	2.2			

Washington
Lakeview
Richmond - 51

Photograph 14.

Photo File Name: DSCN5407.JPG

Date of Photo: 06/06/2024

Time of Photo: 9:48 AM

Photographer: Mariela Reyna

Description: Daily bench sheet that recorded results from analyses performed in the laboratory.

JAR TEST WORKSHEET

MS
4-29-22 1 hr. Settling

JAR NUMBER			1	2	3	4	5	6						
RAPID MIX	RPM													
	DURATION, SEC.													
FLOCCULATION	RPM													
	DURATION, SEC.													
REAGENTS		mg/L	ml	mg/L	ml	mg/L	ml	mg/L	ml	mg/L	ml	mg/L	ml	
Type-														
Concentration-	Ferric	80	lime 15 ml	90	lime 19 ml	100	lime 21 ml	110	lime 21 ml	120	lime 21 ml	130	lime 21 ml	
Type-														
Concentration-	Poly													
Time of Settling mins.	Depth of Settling cm.	Settling Velocity cm/min	Turbidity	% Remain.	Turbidity	% Remain.	Turbidity	% Remain.	Turbidity	% Remain.	Turbidity	% Remain.	Turbidity	% Remain.
			1.44		.46		1.16		1.20		2.24		.38	
Floc size														
pH			10.54		10.97		11.4		10.96		11.07		11.08	
Color														
Raw Water		Turbidity -												
		Color -												
		pH -												

Photograph 15.

Photo File Name: DSCN5397.JPG

Date of Photo: 06/06/2024

Time of Photo: 9:02 AM

Photographer: Mariela Reyna

Description: Jar test bench sheet.