pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF SAFE DRINKING WATER

OPERATION AND MAINTENANCE PLAN FOR

Public Water System Name: _____

Public Water System I.D. No.: | | | | | | | |

Address: _____

_____

_____

Telephone No.: _____

Municipality: _____

County: _____

System Type: ☐ Community ☐ Nontransient Noncommunity
(Please Check)

Population Served: _____

Person Preparing Plan: _____

Date Completed: _____ **Date Updated:** _____

Section 1: Description of Facilities

Ownership:

Owner: _____

Responsible Officials:

	Name	Address
1.	_____	_____
	Phone No.: _____	Title: _____
2.	_____	_____
	Phone No.: _____	Title: _____
3.	_____	_____
	Phone No.: _____	Title: _____

Service Area Map:

Location of Map: _____

Permit Information:

Permit No.	Date Issued	Purpose	Location of Documents

Source:

Well (Complete for each well): Not Applicable: ☐

Name or Identification: _____

Permit No.: _____ Date of Permit: _____

Location: _____

Latitude: _____ Longitude: _____

Well Log Attached: ☐ Yes ☐ No

Date Drilled: _____ Well Driller: _____

Diameter: _____ in. Total Well Depth: _____ ft.

Casing Diameter: _____ in. Casing Length: _____ ft.

Casing Grouted: ☐ Yes ☐ No

Depth of Grout: _____ ft. Pumping Capacity: _____ gpm

Static Water Level: _____ ft. Pumping Water Level: _____ ft.

Depth Gauge: ☐ Yes ☐ No

Well Pump:

Type of Pump: _____

Manufacturer: _____ Model Number: _____

Pump Specs Attached: ☐ Yes ☐ No

Number of Stages: _____ Capacity: _____ gpm

Horsepower: _____ hp Pump Setting (depth): _____ ft.

Controls (Man., Auto., …): _____

_____

Spring (Complete for each spring): Not Applicable: ☐

Name: _____

Permit No.: _____ Date of Permit: _____

Location: _____

Latitude: _____ Longitude: _____

Capacity: _____ gpm

Collection Basin Construction: _____

Purchased Water (Complete for each interconnection): Not Applicable: ☐

Name of Supplier: _____

Address: _____

_____

Contact Person: _____ Phone No.: _____

Agreement Date: _____ Max. Capacity: _____ gpd

Pressure: _____ psi Metered: ☐ Yes ☐ No

Meter Size: _____ in. Recorder: ☐ Yes ☐ No

Average Day: _____ gpd

Backflow Preventer: ☐ Yes ☐ No

Additional Treatment Provided: ☐ Yes ☐ No

Treatment Includes: _____

_____

High Service or Booster Pumps (Complete for each): Not Applicable: ☐

Name /Location: _____

Size (Size of Suction Piping x Size of Discharge Piping): _____ in.

Capacity: _____ gpm Head: _____ ft.

Manufacturer: _____ Model No.: _____

Pump Specs Attached: ☐ Yes ☐ No

Impeller Diameter: _____ in. Pump Curve: _____

Suction Pressure: _____ psi Discharge Pressure: _____ psi

Metered: ☐ Yes ☐ No

Motor Mfg.: _____ Motor Serial No.: _____

Horsepower: _____ RPM: _____

Volts: _____ Amps: _____

Phase: _____ Motor Frame No.: _____

Controls (Man., Auto., …): _____

_____

Master Meter Records:

Location	Size	Type	gpm or cfm	Chart Y/N Y	Chart Y/N N	Last Calibration/ Frequency
				☐	☐	
				☐	☐	
				☐	☐	
				☐	☐	

Treatment:

Disinfection: Not Applicable: ☐

Chemical Used: _____

Strength: _____ % Size Container: _____ gal/lb

Chemical Supplier: _____

Address: _____

_____

Phone No.: _____

Type of Chemical Feeder: _____

Equipment No.: _____

Mfg.: _____ Model No.: _____

Pump Specs Attached: ☐ Yes ☐ No

Capacity: _____ gpd Pressure: _____ psi

Feeder is Equipped With (Check those that apply):

- ☐ Pressure Relief Valve
- ☐ De-gassing Valve
- ☐ Calibration Chamber
- ☐ Backpressure Valve
- ☐ Anti-siphon Valve
- ☐ Foot Valve

Chlorine Contact Time: _____ min At Flow Rate: _____ gpm

Contact Tank or Clearwell Volume: _____ gal.

Transmission Pipe: Diam.: _____ in. Length: _____ ft.

Controls (Man., Auto., …): _____

_____

Other Treatment (Complete for each treatment scheme): Not Applicable: ☐

Purpose: _____

Chemical Used: _____

Strength: _____ % Size Container: _____ gal/lb

Chemical Supplier: _____

Phone No.: _____

Type of Chemical Feeder: _____

Equipment No.: _____

Mfg.: _____ Model No.: _____

Feeder Specs Attached: ☐ Yes ☐ No

Capacity: _____ gpd Pressure: _____ psi

Feeder is Equipped With (Check those that apply):

☐ Pressure Relief Valve ☐ De-gassing Valve

☐ Calibration Chamber ☐ Backpressure Valve

☐ Anti-siphon Valve ☐ Foot Valve

Method Used for Process Control: _____

Distribution System:

Location of Dist. Map: _____

Dist. Map Indicates (check those that apply):

- ☐ Pipe Material
- ☐ Pipe Length
- ☐ Pipe Diam.
- ☐ Valves
- ☐ Fire Hydrants
- ☐ Dead Ends

Valves Open (Indicate): ☐ Left ☐ Right

Fire Hydrants Open (Indicate): ☐ Left ☐ Right

Pressure Regulating Valve:

Location: _____

Mfg.: _____ Size: _____ in.

Do you maintain records of residential meters? ☐ Yes ☐ No

Where are they located? _____

Do you maintain an inventory of distribution materials? (e.g. pipes, valves) ☐ Yes ☐ No

Where is it located? _____

Finished Water Storage

(Complete for each storage facility): Not Applicable: ☐

Type: _____

Location: _____ Capacity: _____ Gal.

Size:

If Elevated Tank: Height: _____ ft. Diam.: _____ ft.

If Reservoir: Length: _____ ft. Width: _____ ft. Depth: _____ ft.

Elevations: Base: _____ ft. Overflow: _____ ft.

Pipe Size: Inlet: _____ in. Outlet: _____ in.

Year Constructed: _____

Type Foundation: _____

Tank Mfg.: _____

Address: _____

_____

Phone No.: _____

Type of Construction: _____

Type of Paint System: _____

Storage Facility is Equipped With (Check those that apply):

- ☐ Fence
- ☐ Drain Pipe
- ☐ Interior Ladder
- ☐ Float Gauge
- ☐ Pump Controls
- ☐ Overflow Pipe
- ☐ Exterior Ladder
- ☐ Altitude Valve
- ☐ Water Level Recorder

Pressure Tanks:

Location: _____

Spec Sheet Attached: ☐ Yes ☐ No

Mfg.: _____

Address: _____

_____

Phone No.: _____

Size: Diameter: _____ ft. Height: _____ ft.

Percent Air: _____ ft.

Pressure Range: _____ psi to _____ psi

Raw Water Storage

(Complete for each storage facility): Not Applicable: ☐

Type: _____

Location: _____ Capacity: _____ Gal

Size:

If Elevated Tank: Height: _____ ft. Diameter: _____ ft.

If Reservoir: Length: _____ ft. Width: _____ ft. Depth: _____ ft.

Elevations: Base: _____ ft. Overflow: _____ ft.

Pipe Size: Inlet: _____ in. Outlet: _____ in.

Year Constructed: _____

Type Foundation: _____

Tank Mfg.: _____

Address: _____

_____

Phone No.: _____

Type of Construction: _____

Type of Paint System: _____

Storage Facility is Equipped With (Check those that apply):

- ☐ Fence
- ☐ Drain Pipe
- ☐ Interior Ladder
- ☐ Float Gauge
- ☐ Pump Controls
- ☐ Overflow Pipe
- ☐ Exterior Ladder
- ☐ Altitude Valve
- ☐ Water Level Recorder

Pressure Tanks:

Location: _____

Spec Sheet Attached: ☐ Yes ☐ No

Mfg.: _____

Address: _____

_____

Phone No.: _____

Size: Diameter: _____ ft. Height: _____ ft.

Percent Air: _____ ft.

Pressure Range: _____ psi to _____ psi

Treatment System Schematic:

Treatment System Schematic Attached: ☐ Yes ☐ No

Schematic Indicates (check those that apply):

- ☐ Sources of Supply
- ☐ Chemical Treatment Injection Points
- ☐ Raw Water Taps
- ☐ Finished Water Taps
- ☐ Master Meters
- ☐ Valves
- ☐ Contact Tanks
- ☐ Entry Points

Treatment System Schematic:

Name of Facility: _____

Section 2: Start-up and Operations

Overall Controls:

- **What controls the start-up of your water source?**

  (Automatic? Manual? If automatic, what activates the pump? Pressure switch? Level controls?)

- **What controls the shut-down of your water source?**

  (Automatic? Manual? Pressure drop? At what pressure does the pump shut off?

- **What controls water levels in the tank or reservoir? (e.g. Altitude valve, float, pressure?)**

- **Other controls:**

Disinfection:

- What controls the start-up of the chlorinator?

- What controls the shut-down of the chlorinator?

- What controls the chlorine dosage? (e.g. automatic, analyzer)

- How often are the pumps & controls checked for proper operation?

- What chemical is fed?

- If liquid, what is the product strength (as delivered)? _____ lbs/gal
- Is the solution diluted in a day tank? ☐ Yes ☐ No
- What is the procedure?

  _____ gallons of liquid chlorine is mixed with _____ gallons of water.
- What is the product strength of the solution fed? _____ lbs/gal
- What is the residual normally retained? _____ mg/L
- How do you measure the residual? (How often? Where? When?)

Start-up:

Checklist:

☐ Well pump is operational.

☐ Disinfection solution tank is full. @ Product Strength _____ lbs/gal

OR

☐ Chlorine cylinder is not empty.

☐ Chlorinator feed pump setting Speed _____ Stroke _____ %

- Physical inspection (e.g. feed pump, tubing, poppits, injection assembly)

  Observations:

- Mechanical inspection (e.g. valve positions, piping, motors)

  Observations:

- The following valves are <u>open</u>

- The following valves are <u>closed</u>

- Electrical inspection (e.g. wiring, fuses, interlocks)

- Other:

Start-up Procedure:

Step 1:	
Procedure:	

Step 2:	
Procedure:	

Step 3:	
Procedure:	

Step 4:	
Procedure:	

Step 5:	
Procedure:	

Step 6:	
Procedure:	

Normal Operating Conditions:

- Normal quantity of water produced per day: Average _____ Maximum _____
- Normal quantity of water produced (gpm): Average _____ Maximum _____
- Normal total hours of operating per day: Average _____ Maximum _____
- Plant pressures: Maximum _____ (psi) Minimum _____ (psi)
- What is the normal chlorine residual (concentration) at the following locations?
  Entry Point: Maximum _____ ppm Minimum _____ ppm
- Distribution system chlorine residuals:

Location:	Maximum – free/total			Minimum – free/total		
_____	_____ / _____	ppm		_____ / _____	ppm	
_____	_____ / _____	ppm		_____ / _____	ppm	
_____	_____ / _____	ppm		_____ / _____	ppm	
_____	_____ / _____	ppm		_____ / _____	ppm	

- Distribution System pressures:

Location:	Maximum (psi)	Minimum (psi)
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Standard Operating Procedure: Disinfection

Step 1:	
Procedure:	

Step 2:	
Procedure:	

Step 3:	
Procedure:	

Step 4:	
Procedure:	

Step 5:	
Procedure:	

Step 6:	
Procedure:	

Operational Status Sheet:

- What is the maximum flow that can leave the plant and still maintain 20 minutes chlorine contact time?

  _____ gpm

- What is the minimum free chlorine residual necessary to maintain 0.2 ppm at the furthest point on the distribution system?

  _____ ppm

- What is the minimum pressure at the plant necessary to maintain 20 psi at the highest service connection?

  _____ psi

Emergency Operating Conditions:

An emergency exists when:

- The flow leaving the plant exceeds: _____ gpm
- The entry point chlorine residual is less than: _____ ppm
- The water pressure falls below: _____ psi
  - Other (specify):

Emergency Operating Procedure:

Step 1:	
Procedure:	

Step 2:	
Procedure:	

Step 3:	
Procedure:	

Step 4:	
Procedure:	

Step 5:	
Procedure:	

Step 6:	
Procedure:	

Troubleshooting Guide:

Step 1:	
Procedure:	

Step 2:	
Procedure:	

Step 3:	
Procedure:	

Step 4:	
Procedure:	

Step 5:	
Procedure:	

Step 6:	
Procedure:	

Section 3: Procedures for Repairing and Replacing Water Mains

Procedures for 1-Hour DEP Notification

Pa. DEP Contact:

Name: _____

Address: _____

_____

_____ Phone No.: _____

24-Hour Emergency Phone No.: _____

1-Hour Notification Checklist: Provide 1-hour notification to Pa. DEP when any of these conditions exist:

☐ Loss of positive pressure within the distribution system is caused by a situation other than a main break, such as a power outage, pump failure, source outage, or depletion of storage.

☐ Loss of positive pressure within the distribution system is caused by a main break, repair or replacement **AND**:

- ☐ There is evidence of contamination

OR

- ☐ A high risk of contamination

- ☐ Repairs cannot meet requirements under Standard C-651-05 and PA DEP's policy for issuing Tier 1 Public Notification relating to loss of pressure in the distribution system (Document #383-2129-004).

☐ Special bacteriological samples are positive for fecal coliform or *E. coli*.

Table 3-1: Examples of evidence of contamination
Changes to the physical characteristics, such as unusual discoloration, taste or odor.
Changes to the water chemistry as evidenced by field test results.

Table 3-2: Examples of situations with a high risk of contamination
A flooded trench that cannot be properly dewatered or remedied by best management practices where the water level is at or above the level of the pipe being repaired.
Leaking sewer lines near the site of the main break or repair.
Evidence of contamination caused by nearby failing on-lot septic systems entering the area of the main break.
Evidence of contamination caused by back flow or cross connection entering the area of the main break.
High system unaccounted for water loss (> 20%) due to leaks in the distribution system near the site of the main break or repair.
Low system water storage which results in loss of service to customers.
Evidence of contamination caused by a stream or river crossing near the site of the main break or repair.
Any condition that allows contaminated water to enter the distribution system.

Water Main Repair/Replacement Procedures

For more information, refer to DEP's Policy for Determining When Loss of Positive Pressure Situations in the Distribution System Require One-Hour Reporting to the Department and Issuing Tier 1 Public Notification (#383-2129-004).

To access this policy, go to the PN Website:

- Go to www.depweb.state.pa.us
- On the left side, click “DEP Programs A-Z”
- Under “P”, click on Public Notification

Repair Log

Date Discovered	Time Discovered	Location	Population Affected	Date Repair Completed	Disinfection Method	Date Residual Detected	Coliform Sampling Waived
							☐

Description of Repair	Coliform Sampling Date	Coliform Results Date	Coliform Results	*E. coli* Results

Date Discovered	Time Discovered	Location	Population Affected	Date Repair Completed	Disinfection Method	Date Residual Detected	Coliform Sampling Waived
							☐

Description of Repair	Coliform Sampling Date	Coliform Results Date	Coliform Results	*E. coli* Results

Date Discovered	Time Discovered	Location	Population Affected	Date Repair Completed	Disinfection Method	Date Residual Detected	Coliform Sampling Waived
							☐

Description of Repair	Coliform Sampling Date	Coliform Results Date	Coliform Results	*E. coli* Results

Date Discovered	Time Discovered	Location	Population Affected	Date Repair Completed	Disinfection Method	Date Residual Detected	Coliform Sampling Waived
							☐

Description of Repair	Coliform Sampling Date	Coliform Results Date	Coliform Results	*E. coli* Results

Section 4: Maintenance

Equipment List:

Equipment Number	Equipment Description	Equipment Location

Equipment Record Cards:

Equipment Registration

Equipment Name:	Number:
Location:	
Manufacturer:	Telephone:
Address:	
Sales Representative:	Telephone:
Manufacturer's Manual Number:	
Name Plate Data:	Motor Data:

Spare Parts	Manufacturer	Part #	Phone	# In Stock

Contracted Labor	Address	Phone

Maintenance Required	Maintenance Type	Frequency
Drawing No.:		

Preventive Maintenance Checklist:

Plant Location:

Month/Week:

Equipment #	Equipment Name	Procedure	Initials	Date

Maintenance Procedure Form:

Maintenance Procedure Title:	
Equipment Name:	Equipment #:
Location:	
Maintenance Description:	
Safety Precautions:	
Tools, Parts, Materials, Test Equipment	

Procedure:

Corrective Maintenance Work Order:

Date of Work	Date Due	Priority	Plant Area
Equipment #	Equipment Name		Location:

Nature of Problem:	Requested By:
	Phone No.
	Est. Mh.

Job Started _____ Mon. _____ Day _____ Time Job Completed _____ Mon. _____ Day _____ Time

Materials					**Labor Equipment**				
Stock No.	Item	Qty.	Unit Price	Cost	Name	Reg. Hours	O.T. Hours	Rate	Labor Cost (hrs x rate)
	Total Cost				Totals				

Outside Contractor Required: ☐ Yes ☐ No

Contractor Cost:

What was found wrong?

How was It fixed?

Apparent cause of problem -

Remarks -

Work Completed By:	Date
Work Accepted By:	Date

Section 5: Records and Reporting

Records Location:

Record Type	Location

Monthly Operations:

Name _____ Location _____

Operator _____ Month of _____

Day	Operations					Chemicals				Quality				
						Chlorine								
	Pump Hours	Water Flow GPM	Water Storage MG	Change ± MG	System Demand MGD	lbs/gal	mg/L	lbs/gal	mg/L	Cl_2	pH	Alk	Hardness	Water Temp
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														
26														
27														
28														
29														
30														
31														
Total														

Bacteriological Testing-Compliance Record:

Month/Year _____ Total Monthly _____ Samples Required _____

Sample Number	Date	Time	Sample Collection Point (Address or Location)	Sample collected by (Initials)	Free Cl_2 Residual	Type Sample	Test Results

Gas Chlorinator Description:

Type _____

Number of Tanks _____ **Size of Tanks** _____

Vacuum Regulators:

Number of Vacuum Regulators	
Manufacturer's Name	
Model Number	
Manufacturer's Address	
Manufacturer's Phone	
Plant ID Number	

Flow Meter:

Number of Vacuum Meters	
Manufacturer's Name	
Model Number	
Manufacturer's Address	
Manufacturer's Phone	
Plant ID Number	

Automatic Switch-Over Device:

Manufacturer's Name	
Model Number	
Manufacturer's Address	
Manufacturer's Phone	
Plant ID Number	

Vacuum Tubing:

Inside Diameter	
Outside Diameter	
Length	

Liquid Chlorination Description:

Pump Description:

Manufacturer's Name _____

Model Number _____ Serial Number _____

Rated Capacity _____ gpd _____ gph _____ mL/min

Plant ID Number _____

Tank:

Manufacturer's Name _____

Model Number _____

Serial Number _____

Height _____ Diameter _____ Volume _____

Suction Line:

Diameter _____

Length _____

Strainer Available _____

Discharge Line:

Diameter _____ Length _____

Four-Way Valve Description:

Monthly Water Treatment Plant Operational Report:

Permit Name _____ _____

For month of Year

Permit Address _____

Street City, State Zip Code

Permit Phone No. - Home _____ Business _____

Location of Plant - Municipality _____ County _____

Plant Operator's Name	Phone Number	Certification Number, Type, and Class

Name of Each Source of Water Supply Used

( ) _____ ( ) _____

( ) _____ ( ) _____

( ) _____ ( ) _____

( ) _____ ( ) _____

Maintenance performed during the month (e.g. flushing, cleaning storage equipment and pumps, repairs, etc.):

Explanations of any operational water supply problems (e.g. complaints, boil water notices, lightning-created failures, problems causing unusually high water usage, pressure problems, etc.):

Monthly Water Treatment Plant Operational Report (Continued):

Instructions for completing this Report:

In the table below, source is to be indicated by the number opposite the source of water supply shown on the previous page of this report. If more than seven sources of supply are used or if different sources are used to serve separate parts of the system, additional reporting forms can be completed to show concentrations and chemicals added.

Signature of Person Completing Form

Date	Water Pumped (1,000 gal) + Source							Source of Supply + Conc. In Distribution System		Other Chemicals Added (lbs)				
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														
26														
27														
28														
29														
30														
31														

Statistical Report:

For month of _____ Year _____

Unaccounted-for Water		Current	12 Mos. To Date
1	Total water produced or purchased		
2	Total plant uses		
3	Total water to distribution system		
4	Water used in distribution system		
5	Water available for metered sales		
6	Water billed		
7	Adjustments made		
8	Net water sold		
9	Unaccounted for		
10	% unaccounted for		

Customer Statistics:

Type	No. Water Customers		Net Water Sold (this month)	
	Metered	Unmetered	Metered	Unmetered
Residential				
Commercial				
Industrial				
Fire Protection				
Other				
Total				

Customer Communications:

Category	Month		Year To Date	
	Complaint	Inquiry	Complaint	Inquiry
Pressure				
Water Quality				
Leaks				
Billing				
Meter Reading				
Service Requests				
Construction				

Precipitation:

Year	Amount (in.)		Rain Days	
	Mo.	YTD	Mo.	YTD
Current				
Previous				
Normal				

Production:

Max. Day		TGD	
Min. Day		TGD	

Electrical Power Use Summary:

Water Supplier _____

Month		Location				
Jan	kwh					
	Kwh/MG					
Feb	kwh					
	Kwh/MG					
Mar	kwh					
	Kwh/MG					
Apr	kwh					
	Kwh/MG					
May	kwh					
	Kwh/MG					
June	kwh					
	Kwh/MG					
Jul	kwh					
	Kwh/MG					
Aug	kwh					
	Kwh/MG					
Sep	kwh					
	Kwh/MG					
Oct	kwh					
	Kwh/MG					
Nov	kwh					
	Kwh/MG					
Dec	kwh					
	Kwh/MG					
Total	kwh					
	Kwh/MG					

Master Meter Record:

Water Supplier _____

Date Prepared _____ Completed By: _____

Meter Name/Number					
Location of Meter					
Raw or Finished Water					
Flow Range (gpm)					
Mfg.					
Type/Size					
Serial No.					
Date Installed					
Date Tested/ Calibrated/By Whom					
Date Tested/ Calibrated/By Whom					
Date Tested/ Calibrated/By Whom					

Valve Record:

Water Supplier _____

Location _____ No. _____

Make _____ Size _____ No. Turns (New) _____ Direction to Open (R/L) _____

Date Installed _____ Installed By: _____

Date Inspected	Condition	Turns to Open	Turns to Close	Maintenance and Remarks	Done By:

Fire Hydrant Record:

Water Supplier _____

Location _____ No. _____

Make _____ No. of Outlets _____ Hose _____ Streamer _____

Hydrant Size _____ Size Valve Opening _____ Lateral Size _____

Lateral Valve Size _____ Direction to Open (R/L) _____ Date Installed _____

Date Inspected	Condition	Turns to Open	Turns to Close	Maintenance and Remarks	Done By:

Record Maintenance:

Record	Minimum Retention Time	Send to DEP
Bacteriological analyses	5 years	Within 10 days of the end of the monitoring period
Chemical analyses	12 years	Within 10 days of the end of the monitoring period
Use of acrylamide and epichlorohydrin (if applicable) including dose rates	12 years	
Performance monitoring required under § 109.301	3 years	Within 10 days of the end of the monitoring period
Documentation of actions taken to correct violations of MCLs and treatment technique requirements	3 years from date of correction	
Permit information (drawings, equipment, flow rates, detention times, specifications, engineers report)	Life of facility	
Sanitary Survey information	12 years	
Distributions system map and updates	Life of facility	Yearly as updates are made
Emergency response plan and updates	Life of facility	Yearly as updates are made
Operation and maintenance plan	Life of facility	Yearly as updates are made
Cross-connection control plan	Life of facility	Yearly as updates are made
Monthly operational reports	2 years	Only as required by the Department
Variance or exemption records	5 years from date of expiration	
Customer complaints	3 years	Upon request

Note: These are suggested retention times; however, you may be required by other agencies (e.g. PUC) to maintain records longer.

Section 6: Laboratory Sampling and Compliance Monitoring

Sample Collection:

All samples are collected according to this plan.

Sampling and Handling Requirements

Parameter	Container	Minimum Sample Size, mL	Preservation	Holding Time
Microbiological				
Coliform Bacteria	P, G	>100	Refrigerate, Sodium Thiosulfate	30 hours
Radiological				
Natural				
Gross Alpha	P, G	1,000	HNO_3 or HCl to pH<2	6 months
Combined Radium (226 & 228)	P, G	1,000	HNO_3 or HCl to pH<2	6 months
Man-made				
Gross Beta	P, G	1,000	HNO_3 or HCl to pH<2	6 months
Tritium	G	1,000	None	6 months
Strontium 90	P, G	1,000	HNO_3 or HCl to pH<2	6 months
Inorganic Chemicals (IOCs)				
Asbestos	P, G	1,000	Refrigerate	48 hours
Metals	P, G	500	HNO_3 to pH<2	6 months
Antimony				
Arsenic				
Barium				
Beryllium				
Cadmium				
Chromium				
Nickel				
Selenium				
Thallium				
Cyanide (free)	P, G	1,000	Refrigerate, NaOH to pH>12, Ascorbic Acid	14 days
Fluoride	P	300	None	28 days
Mercury	P, G	500	HNO_3 to pH<2, Refrigerate	28 days
Nitrate (as N)				
(chlorinated)	P, G	100	Refrigerate	28 days
(non-chlorinated)	P, G	100	Refrigerate, H_2SO_4 to pH<2	48 hours
Nitrite (as N)	P, G	100	Refrigerate	48 hours
Synthetic Organic Chemicals (SOCs)	*	*	*	*
Volatile Organic Chemicals (VOCs)	Glass Vial	40	* Refrigerate, HCl to pH<2, Sodium Thiosulfate	14 days
Total Trihalomethanes (TTHMs)	Glass Vial	40	Refrigerate	14 days
Secondary Contaminants				
Chloride	P, G	100	None	28 days
Color	P, G	500	Refrigerate	48 hours
Corrosivity	P, G		Refrigerate	
Foaming Agents	P, G		Refrigerate	48 hours
Odor	G	500	Refrigerate	24 hours
pH	P, G	100	None	Immediately
Metals	P, G	500	HNO_3 to pH<2	6 months
Aluminum				
Iron				
Manganese				
Silver				
Zinc				
Sulfate	P, G	100	Refrigerate	28 days
Total Dissolved Solids (TDS)	P, G	200	Refrigerate	7 days

Key: P = Plastic; G = Glass; * Check with lab for details (protocol is specific to method used).

Sample Collection Procedures:

Bacteriological Sample Procedure (Coliform):

Other (specify):

Other (specify):

Sample Collection Log: ☐ Yes ☐ No

Location: _____

Chain of Custody: ☐ Yes ☐ No

Location: _____

Sampling Schedule:

DEP monitoring calendar: Attached: ☐ Yes ☐ No

Sample Site/ Location:

TCR Sample Site Plan: Attached: ☐ Yes ☐ No Revision Date: _____

LCR Sample Site Plan: Attached: ☐ Yes ☐ No Revision Date: _____

Sample Analysis:

In-house Testing:

In-house testing is performed by:

Name: _____

Title: _____ Phone No.: _____

In-house testing is conducted for (Check those that apply):

☐ Disinfectant Residual
☐ pH
☐ Alkalinity
☐ Orthophosphate
☐ Nitrate as N
☐ Iron
☐ Manganese
☐ Other (specify): _____

In-house Laboratory Procedures: Attached: ☐ Yes ☐ No

If no, identify location: _____

In-house Quality Assurance/Quality Control (QA/QC):

Our QA/QC program includes (check those that apply):

☐ Calibration
☐ Duplicates
☐ Spikes
☐ Blanks
☐ PE Samples
☐ Recordkeeping

Inventory of Lab Equipment: Attached**:** ☐ Yes ☐ No

If no, identify location: _____

Lab Equipment Supplier:

Name: _____

Address: _____

_____

Contact: _____ Phone No.: _____

Account No.: _____

Outside Services:

Our certified laboratory, as per the regulations, performs the following:

1. Submits to the Department the results of test measurements within either the first **10 days** following the month in which the result is determined or the first 10 days following the end of the required monitoring period, whichever is shorter.
2. Whenever an MCL or a treatment technique performance requirement is violated, or a sample result requires the collection of check samples:
   - Notifies the public water supplier by telephone **within 1 hour** of the laboratory's determination. If the supplier cannot be reached within that time, notify the Department by telephone within 2 hours of the determination. If the Department cannot be reached due to an occurrence during weekend, holiday or evening hours, notify the Department by phone within 2 hours of the beginning of the next business day.
   - Notifies the Department in writing **within 24 hours** of the determination.
3. Notifies the Department within 48 hours of termination of the laboratory certification from the EPA or another agency.
4. Notifies the public water supplier served by the laboratory within 48 hours of the following:
   - Failure to renew existing certification for a category of certification.
   - Revocation of certification by the Department.

Outside services are provided by:

Lab Name: _____

Address: _____

_____

Contact: _____ Phone No.: _____

Certified Lab No.: _____

The duties of the outside lab include (Check those that apply):

☐ Sample Collection
☐ Sample Analyses
☐ Reporting to System
☐ Reporting to DEP
☐ Other (specify):

_____

_____

Outside laboratory analyses include (Check those that apply):

☐ Coliform Bacteria
☐ IOCs
☐ VOCs
☐ TTHMs
☐ SOCs
☐ Radiological
☐ Other (specify):

_____

_____

_____

Interpretation of Results/Compliance:

Maximum Contaminant Levels:

All results are interpreted using the tables found in the "Safe Drinking Water Program Summary of Key Requirements for Community Water Systems." This document is located in the appendix to this plan.

In addition to the information in the appendix, we use the following table to determine compliance.

Determining Compliance with an MCL:

<table>
<tr><th rowspan="2">Contaminant</th><th colspan="2">MCL Violation</th></tr>
<tr><th>Acute MCL</th><th>Monthly MCL</th></tr>
<tr><td>Total Coliform

Systems that collect 1 to 39 samples per month.

Systems that collect 40 or more samples per month.</td><td>Any sample determined to be fecal coliform or
E. coli positive
AND
at least one of the associated routine or check samples is coliform-positive.</td><td>If 2 or more samples (including check samples) are coliform-positive.

If more than 5.0% of all samples collected (including check samples) are coliform-positive.</td></tr>
<tr><td>Inorganic (excluding Nitrate/Nitrite)

Synthetic Organic

Volatile Organic</td><td colspan="2">If average of routine and check sample exceeds MCL for annual or less frequent IOC, VOC or SOC monitoring.

If running annual average exceeds MCL for more frequent than annual IOC, VOC or SOC monitoring.</td></tr>
<tr><td>Nitrate/Nitrite</td><td colspan="2">If average of routine and check sample exceeds MCL.</td></tr>
</table>

Special Permit Conditions: Not Applicable: ☐

Special Conditions Include:

Process Control Ranges: Not Applicable: ☐

Process Control Ranges Include:

Notification:

We use the sample notices and mandatory health affects language found in Section 6 of this plan.

Chain of Command for notification of violations to our staff include:

Name	Phone No.	Title

Chain of Command for notification of violations to **DEP** include:

Name	Phone No.	Title

Recordkeeping

All original forms for laboratory sampling and compliance monitoring are found in Section 5 of this plan.

Criteria for maintaining records is also located in Section 5.

Section 7: Public Notification

Public Notification Quick Reference Guide:

Response Steps:

1. **Determine the tier of your violation or situation.**
2. **Report to DEP within 1 hour (Tier 1 or 2).**
3. **Consult with DEP within 24 hours (Tier 1).**
4. **Review the requirements for public notices.**
5. **Determine appropriate methods of delivery.**
6. **Develop a notice, modifying the templates to fit your situation.**
7. **Provide multilingual information.**
8. **Issue the notice to persons served as soon as practical within the allowed time frame.**
9. **Provide a "Problem Corrected" Notice within 24 hours of correcting the situation and receiving permission from DEP to issue the "Problem Corrected" notice (Tier 1).**
10. **Send a copy of each notice issued (including repeat notices) to DEP within ten days of distributing the notices, along with a statement certifying that all public notice requirements have been met (PN Certification Form).**

Tier Classification	Violations or situations…
Tier 1	…with the most serious adverse health effects as a result of short-term exposure.
Tier 2	…with the potential to cause chronic health effects.
Tier 3	…that cause no known health effects.

Requirements for Issuing Public Notice		
Tier	**Deadline for Notice**	**Delivery Methods to Use***
1	24 hours**	Until May 10, 2010, use, at a minimum, one or more of the following shall be used: Broadcast media (radio or television), posting or hand delivery. Beginning on May 10, 2010: • provide direct delivery of public notice to each **service connection** using one or more of the following methods: hand delivery, electronic mail, or automatic telephone dialing systems. • provide public notice to transient and nontransient service connections (if applicable) by using appropriate broadcast media (radio or television.)
2	30 days	Mail or other direct delivery, and any other method as needed to reach others.
3	1 year***	Mail or other direct delivery, and any other method as needed to reach others.

Notes:
***** DEP may approve other methods.
****** For Tier 1, systems must also initiate consultation with DEP within 24 hours.
******* DEP recommends consolidating all Tier 3 violations/situations occurring within a given year into an annual notice.

Mandatory Content Elements for Public Notices
1. A description of the violation or situation, including the contaminant of concern, and (as applicable) the contaminant level; 2. When the violation or situation occurred; 3. Any potential adverse health effects from drinking the water, using mandatory health effects; 4. The population at risk, including subpopulations particularly vulnerable if exposed to the contaminant in their drinking water; 5. Whether alternative water supplies should be used; 6. What actions consumers should take, including when they should seek medical help, if known; 7. What you are doing to correct the violation or situation; 8. When you expect to return to compliance or resolve the situation; 9. Your name, business address, and phone number or those of a designee of the public water system as a source of additional information concerning the notice; and 10. A statement encouraging notice recipients to distribute the notice to others, where applicable, using the standard language found late in this section.

Requirements for Tier 1 Notice Abbreviated Messages* (Automatic Telephone Dialing System, TV Scrollers, and Verbal Announcements)	
Minimum Content Elements	1. Description of the violation or situation 2. Alternative water supply information 3. What actions consumers should take 4. Telephone number or Web address where consumers can obtain the entire Tier 1 Public Notice.
Acceptable Methods of Providing the Full Notice	1. Posted on a website. 2. Recorded on a dedicated telephone line. 3. Other method approved in writing by the Department.

*Recorded messages must be clear and concise. Keep the abbreviated message short enough (50 to 60 seconds) so that it does not get cut off in customers' answering machines.

Delivery Methods:

Water System Spokesperson:

Name: _____

Address: _____

_____

Phone No.: _____

Announcements

☐ Announcements through Televised Media: See Public Notification Contacts

☐ Announcements through Radio Media: See Public Notification Contacts

☐ Announcements through Website: _____

☐ Mobile Loudspeaker: _____

_____

☐ Automated Telephone Dialing Service: _____

_____

_____

_____

_____

☐ Email: _____

User Name: _____ *Password:* _____

_____

☐ Other: _____

Paper Delivery

☐

Mailing:	Address List:
	# of Copies:
	Method of Generating Copies:

☐

Hand Delivery:	Designated Delivery Person(s):	

☐

Public Posting:	Predetermined Posting Locations:

Public Notification Contacts:

Pa. DEP Contact:

Name: _____

Address: _____

_____

_____ Phone No.: _____

24-Hour Emergency Phone No.: _____

Automatic Telephone Dialing Service:

Company _____

Name: _____

Address: _____

_____

_____ Phone No.: _____

Sensitive Subpopulations:

Name: _____

Address: _____

_____

Contact: _____ Phone No.: _____

Name: _____

Address: _____

_____

Contact: _____ Phone No.: _____

Name: _____

Address: _____

_____

Contact: _____ Phone No.: _____

Radio:

Name: _____

Address: _____

_____

Contact: _____ Phone No.: _____

Name: _____

Address: _____

_____

Contact: _____ Phone No.: _____

Television Station:

Name: _____

Address: _____

_____

Contact: _____ Phone No.: _____

Newspaper:

Name: _____

Address: _____

_____ Deadline: _____

Contact: _____ Phone No.: _____

Name: _____

Address: _____

_____ Deadline: _____

Contact: _____ Phone No.: _____

Fire Department:

Name: _____

Address: _____

_____

Contact: _____ Phone No.: _____

Local Police Department:

Name: _____

Address: _____

_____

Contact: _____ Phone No.: _____

Explanation of Procedures for Issuing Tier 1 Public Notice:

Explanation of Procedures for Issuing Tier 2 and Tier 3 Public Notices

☐ Mailing: _____

☐ Email: _____

☐ Other: _____

Other Notes and Special Instructions:

Lead Public Education Materials:

Has your 90th percentile value for lead ever exceeded the action level of 0.015 mg/L?

☐ Yes ☐ No

If yes, insert a copy of your public education materials here.

Consumer Confidence Report:

Insert a copy of your most recent Consumer Confidence Report (CCR) here or indicate the location where it can be found.

Location of CCR: _____

Public Notice Templates

Insert copies of your public notice templates here or indicate the location where they can be found. Include Tier 1, Tier 2, and Tier 3 situations.

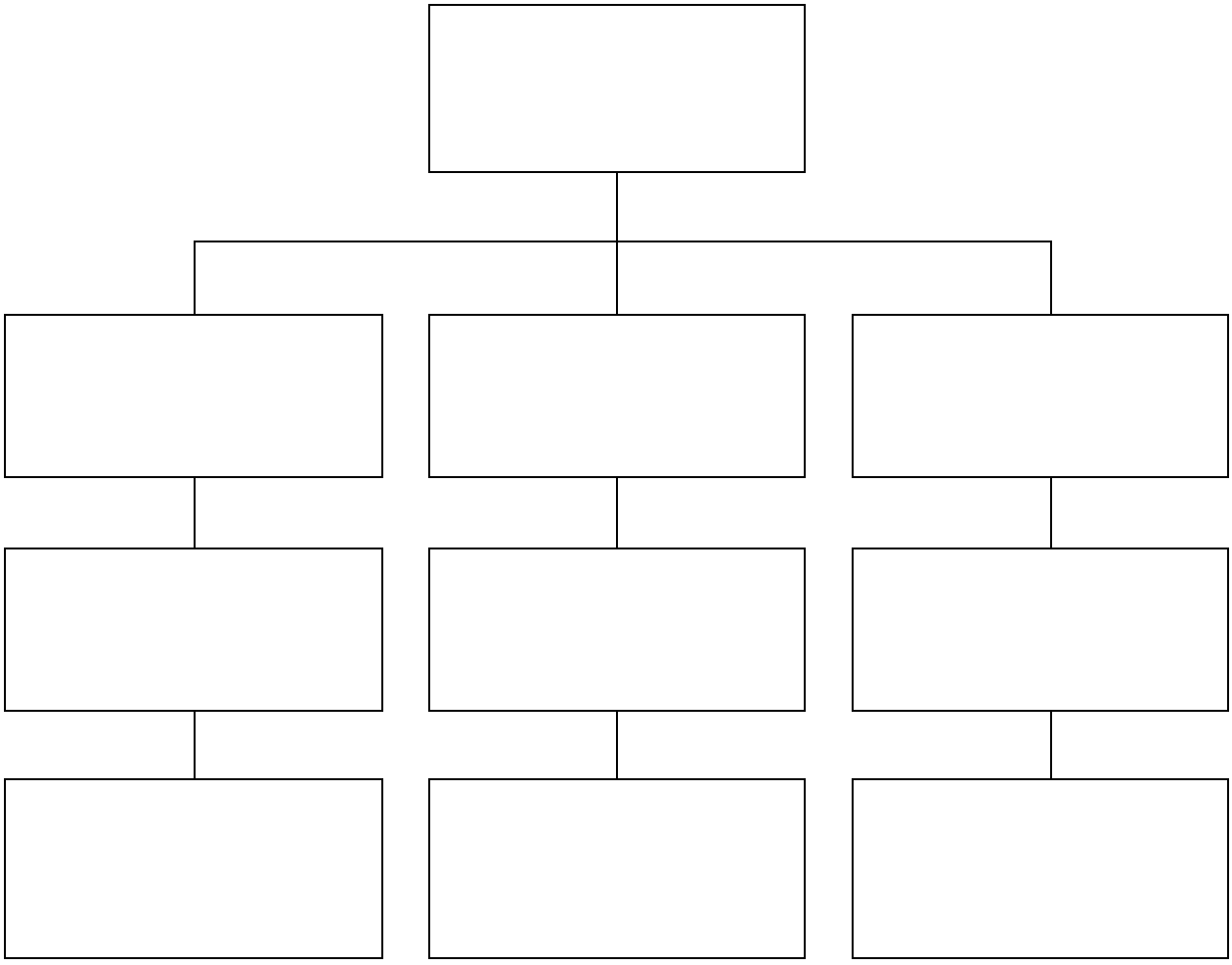
Location of Public Notice Templates: _____

DEP public notice templates are available here (NOTE: These should be downloaded and partially completed before an incident requiring public notice):

- Go to www.depweb.state.pa.us
- On the left side, click on “DEP Programs A-Z”
- Under “P”, click on Public Notification

Section 8: Staffing and Training

Organizational Chart:



Staffing:

Job Description for:

Name: _____ Certification: _____

Position: _____ Years Experience: _____

Reports to: _____

Job Description: Describe the work assigned to this position, listing the critical duties and responsibilities first. Explain work in familiar terms and include machines and/or equipment used. Use additional sheets, if needed.

Training:

Annual Training Plan:

Name	Training Course	Cost	Provider	# Contact Hours	Date

Pa. DEP-Approved Training Information

For the DEP-approved course catalog, training calendar, and operator transcript go to:

www.earthwise.dep.state.pa.us/edu/

For training specific questions, call DEP Training at 717-787-0122 or email: DEPWSTechTrain@pa.gov.

Section 9: Sanitary Survey

Sanitary Survey Checklist Instructions:

The most important point to remember when conducting a sanitary survey is to remember to stay focused on your goal which is merely to evaluate the general physical condition of your system. You will ***not*** be editing your *standard operating procedures* or your *start-up procedures*. You will not be performing maintenance during a sanitary survey.

The checklist is broken down into two major sections:

1.) Source protection - **pages 9-2 and 9-3**

2.) Status of Water System Components - **pages 9-4 to 9-15.**

Source Protection:

- This section deals with your source's susceptibility to contamination due to actual or potential sources of contamination. **(Note the example in the table on page 9-2.** You should record any changes in SOC usage using the table on page 9-2. List the *name of the contaminant*, the *distance* of the contaminant from the source, a *map locator* (pick any number or letter for this to identify the contamination on the map), and *usage* (what the chemical is used for).
- This section also ensures that a systems basic watershed is identified and any known sources of contamination are recorded on the appropriate topographical map.

Status of Water System Components:

The second major part of the checklist is laid out in a standard format that is repeated throughout. This is the section where you will evaluate the physical condition of the system. When evaluating system components, you will be using the following three **Inspectional Factors**:

1.) Equipment Performance - Focus on evaluating a piece of equipment for performing its *basic* function. That's all. Don't worry about optimizing performance at this point. For example, if a chemical metering pump is pumping close to its target feed rate, you would circle **S** for satisfactory on the checklist; however, you would not worry about checking calibration at this point. That would come after the survey.

2.) Equipment Condition - Focus on corrosion, leaks, cracks, and any form of equipment degradation. For example, if that same chemical pump used in the example above had an excessive amount of scale buildup on its wet end components you would mark a **U** for unsatisfactory.

3.) Equipment Protection - Ensure that buildings and other protective structures are well maintained and properly ventilated. For example, if the chemical pump is getting wet from a leaking roof, mark **U** for unsatisfactory on the checklist.

Sources of Information to Use When Performing Sanitary Surveys:

- **Copies of sample results** - new source sampling, copies of SDWA forms, records listing daily operational sample results
- **Monthly operational reports** - **All community water supplies** are required to keep some type of monthly report. If these reports are accurate, they can be useful to help operators remember what was done in the past and what problems might have been encountered before.
- **DEP** - As many of you are aware the Department conducts routine inspections that are similar to sanitary surveys. A full inspection typically conducted by the Department contains more administrative issues than a sanitary survey does. The Department once referred to the full inspection as a sanitary survey. Here are some other records that the Department keeps on file for public access to assist you:
- Inventories - similar to the **description of facilities** section of an O&M plan
- Well logs - Contact your well driller if you don't have them.
- Complaint records

- Permits
- Distribution system maps, blueprints, and equipment specification sheets
- **Your friendly local sanitarian will be glad to help answer questions.**
- **United States Geological Survey (USGS)** - You can obtain maps and other geographical and geological information.
- **PA Bureau of Topographic and Geologic Survey** - You can obtain surface geology, topographic, and watershed maps and other information from this Bureau of the Department of Conservation and Natural Resources. You may contact them at **(717)-702-2017.**
- **County Courthouse** - If you go to the *county tax assessment office,* you can obtain a tax map which outlines property ownership boundaries to help you define land use around your public water system.
- **Local well drillers and other consultants** - Well drillers often keep well log information and have an excellent understanding of the geology in their service areas.

Status of Sanitary Survey:

Do you have a written sanitary survey that has been completed in the past year?

☐ Yes ☐ No

If yes, please insert on the following page.

If no, please use the checklist below to complete a sanitary survey.

Sanitary Survey Checklist:

Introduction: Use these worksheets as a guide or a checklist for performing sanitary surveys. Record observations you make regarding source protection and water system equipment performance, condition, and protection. Use sources of information like the DEP, USGS, and old Sanitary Surveys.

Source Protection:

1. Identify System Watershed - _____
2. List potential sources of contamination within a ½ mile radius around each source (wells, springs) and around any surface water intake, if applicable. **(Use your SOC waiver application and old sanitary surveys as a starting point.)**

Contaminant Ex. Atrazine	Distance 250’	Map Locator A1	Use Corn
1.			
2.			
3.			
4.			
5.			

6.			
7.			
8.			
9.			
10.			

DISTANCE = DISTANCE OF CONTAMINANT FROM WELL.

MAP LOCATOR = INDICATES WHERE THE CONTAMINANT IS LOCATED ON MAP.

3. Has an SOC waiver application been completed for this facility? ☐ Yes ☐ No

4. If an SOC waiver application has been completed for this facility, and one or more waivers have been issued, has it been updated within the past 3 years? ☐ Yes ☐ No

   If so, who completed the update? _____

   Has SOC usage changed within the ½ mile buffer zone (radius around the well) or the delineated recharge area? ☐ Yes ☐ No

   If yes, has DEP been notified? ☐ Yes ☐ No

   Which SOCs have been affected by SOC waiver adjustments, if any?

Contaminant	Distance	Map Locator	Use
1.			
2.			
3.			
4.			
5.			

5. Have all possible sources of contamination been marked on a recent topographic map within the past year? ☐ Yes ☐ No

6. Is there currently a DEP-approved wellhead protection plan or other source protection plan in effect for this facility? ☐ Yes ☐ No

7. List the date of the last source water protection activity (e.g. watershed survey, SOC waiver survey update, etc.). _____

8. Where are all relevant topographic maps, tax maps, and SOC waiver application materials located? _____

Status of Water System Components:

Introduction: Use this checklist, in conjunction with the appendix, along with the other sections of your O&M plan, to help you complete a survey for your system. Each major piece of equipment should be evaluated using three major criteria: **performance, condition, and protection.** Indicate whether each area is ***satisfactory, unsatisfactory, or not applicable*** by checking **S, U**, or **N/A** on the checklist. Lines have been provided when additional description is necessary.

Source Equipment:

Wells:

1. Well Cap(s):

(Please check)

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Protection (Is the cap protected from tampering?) ☐ **S** ☐ **U** ☐ **N/A**

Describe:

2. Other visible well components (screens, vents, etc.):

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Protection ☐ **S** ☐ **U** ☐ **N/A**

Describe:

Springs, Infiltration Galleries, and Collectors:

1. Collection Chambers and other collection devices:

☐ Performance ☐ S ☐ U ☐ N/A

Describe:

☐ Condition ☐ S ☐ U ☐ N/A

Describe:

☐ Protection (Is surface runoff diverted away from collection area?) ☐ S ☐ U ☐ N/A

Describe:

2. Protective covers and screens:

☐ Performance ☐ S ☐ U ☐ N/A

Describe:

☐ Condition ☐ S ☐ U ☐ N/A

Describe:

☐ Protection ☐ S ☐ U ☐ N/A

Describe:

3. Vents and other ventilation components:

☐ Performance ☐ S ☐ U ☐ N/A

Describe:

☐ Condition ☐ S ☐ U ☐ N/A

Describe:

☐ Protection ☐ S ☐ U ☐ N/A

Describe:

4. Overflows and diversion ditches:

☐ Performance ☐ S ☐ U ☐ N/A

Describe:

☐ Condition ☐ S ☐ U ☐ N/A

Describe:

☐ Protection ☐ S ☐ U ☐ N/A

Describe:

Pumps and Pump Controls:

1. Pumps (all types):

☐ Performance ☐ S ☐ U ☐ N/A

Describe:

☐ Condition ☐ S ☐ U ☐ N/A

Describe:

☐ Protection ☐ S ☐ U ☐ N/A

Describe:

2. Pump Controls (pressure switches, circuit breakers, relays):

☐ Performance ☐ S ☐ U ☐ N/A

Describe:

☐ Condition ☐ S ☐ U ☐ N/A

Describe:

☐ Protection ☐ S ☐ U ☐ N/A

Describe:

Treatment:

The purpose of this section is not to evaluate if equipment performance is optimal. When looking at equipment performance you are just checking to insure that every piece of equipment is working in the general sense. If something is not operating properly, refer to Sections 2 and 3 which cover operation maintenance respectively. **Remember at this stage you are just evaluating; you are not going to be correcting every problem that you find with your equipment during the survey.**

Disinfection:

Liquid Feed:

1. Liquid chemical metering pumps (All types):

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Protection ☐ **S** ☐ **U** ☐ **N/A**

Describe:

2. Liquid injection fittings, feed lines, and valves (include foot valves):

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Protection ☐ **S** ☐ **U** ☐ **N/A**

Describe:

3. Hypochlorinator Day Tank:

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ S ☐ U ☐ N/A

Describe:

☐ Protection ☐ S ☐ U ☐ N/A

Describe:

4. Chlorine Contact Detention Tank:

☐ Performance ☐ S ☐ U ☐ N/A

Describe:

☐ Condition ☐ S ☐ U ☐ N/A

Describe:

☐ Protection ☐ S ☐ U ☐ N/A

Describe:

Pellet Feed Chlorinator (Calcium hypochlorite):

1. Pellet feeding device:

☐ Performance ☐ S ☐ U ☐ N/A

Describe:

☐ Condition ☐ S ☐ U ☐ N/A

Describe:

☐ Protection ☐ S ☐ U ☐ N/A

Describe:

Gas Chlorination:

**** See Section 10 of this plan for safety information about gas chlorination.***

1. Gas feed system control valves and associated control equipment:

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Protection ☐ **S** ☐ **U** ☐ **N/A**

Describe:

2. Gas chlorine injection fitting and diffuser:

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Protection ☐ **S** ☐ **U** ☐ **N/A**

Describe:

3. Cylinder scales:

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Protection ☐ **S** ☐ **U** ☐ **N/A**

Describe:

4. Chlorine feed lines:

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Protection ☐ **S** ☐ **U** ☐ **N/A**

Describe:

Pressure Filtration (including softeners)**:**

1. Filter Canister:

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Protection ☐ **S** ☐ **U** ☐ **N/A**

Describe:

2. Filter valves and valve controls (including filter heads):

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Protection ☐ **S** ☐ **U** ☐ **N/A**

Describe:

3. Filter backwash controls and other backwash facilities:

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Protection ☐ **S** ☐ **U** ☐ **N/A**

Describe:

Storage:

1. Raw water storage tanks and reservoirs:

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Protection ☐ **S** ☐ **U** ☐ **N/A**

Describe:

2. Finished water storage:

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Protection ☐ **S** ☐ **U** ☐ **N/A**

Describe:

3. Backwash water storage facility:

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Protection ☐ **S** ☐ **U** ☐ **N/A**

Describe:

4. Storage meters and remote level control devices:

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Protection ☐ **S** ☐ **U** ☐ **N/A**

Describe:

Distribution System:

Because of the complexity and time-consuming nature of distribution system inspections, this checklist will only be a starting point for a complete distribution system inspection. You may want to expand on the following topics by developing separate programs for hydrant inspection, leak detection, and valve inspection. *Information of actual operation and maintenance procedures can be found in Sections 2 and 3 of the operation and maintenance plan.*

1. Distribution system plumbing:

Does this system possess appropriate leak detection equipment? ☐ Yes ☐ No

If so, when was the equipment last calibrated? _____

How many leaks were detected within the past 12 months? _____

List dates and locations of the leaks repaired in the last 12 months.

#	Date	Location
1.		
2.		
3.		
4.		
5.		

Based on the above questions, assess the overall condition of distribution system piping.

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Protection ☐ **S** ☐ **U** ☐ **N/A**

Describe:

2. Distribution system valves (including air relief valves):

Is there a program to exercise valves in place? ☐ Yes ☐ No

Does the distribution system map indicate valve locations and types? ☐ Yes ☐ No

Using the following table, indicate the location and type of valves which have been replaced or have had major maintenance performed on them during the past 12 months.

#	Replaced	Type	Location

Indicate the general status of the distribution system valves.

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Protection ☐ **S** ☐ **U** ☐ **N/A**

Describe:

Is a Department-approved cross connection control plan in effect? ☐ Yes ☐ No

Are cross connection control devices inspected on a routine basis? ☐ Yes ☐ No

3. Distribution system meters:

Are distribution system meters inspected, calibrated, and replaced as necessary? ☐ Yes ☐ No

What is the average age of service meters in the distribution system? _____

Indicate the general status of distribution system meters.

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Protection ☐ **S** ☐ **U** ☐ **N/A**

Describe:

General distribution system:

Has the distribution system map been updated during this survey? ☐ Yes ☐ No

Where is the distribution map located? _____

How often is the distribution system flushed? _____

What is the average duration of each flushing? _____

List flushing locations and dates flushed within the past year.

#	Date	Location

System Buildings and Other Protective Structures:

(This does not include structures designed to protect finished water, such as reservoir covers. This information would go under water storage.)

*** Protecting equipment from moisture and vandalism should be the primary focus when looking at protective structures.**

☐ Performance ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Condition ☐ **S** ☐ **U** ☐ **N/A**

Describe:

☐ Protection ☐ **S** ☐ **U** ☐ **N/A**

Describe:

Note: Remember this form is relatively detailed; however, it does not cover many topics associated with surface water treatment. It also may not cover other types of treatment and other items. You can customize this form to fit your own system.

Be sure to attach a copy of the completed survey to your operation and maintenance plan.

All responsible parties that assisted on the survey should sign and date this form.

NAME DATE

NAME DATE

NAME DATE

Section 10: Safety

Safety Program:

Safety Policy Statement:

Safety Officer:

Name	Position	Phone/extension

Safety Committee:

Name of Committee: _____

Committee Head: _____

Committee Members: _____

_____

_____

_____

Name of Committee: _____

Committee Head: _____

Committee Members: _____

_____

_____

_____

Safety Records:

Record Name	Location	Phone Number

Identification and Description of Hazards:

Hazard	Location	Risk	Procedure

Safety Equipment:

Safety Equipment (Personal Protective):

Type	Job Activity/Required	Equipment Location	Procedure

Safety Equipment (General):

Eyewash Station	Location	Maintenance	Procedure

Fire Extinguisher	Location	Maintenance	Procedure

Ventilation Equipment/Switches	Location	Maintenance	Procedure

Chemical Handling:

Chemical	Storing	Handling	Spill Response	First Aid

Accident / Injury Reporting and Response:

Injury Description	Report To	Guidance Procedures

Important Phone Numbers:

Safety Officer	
Supervisors	
Fire Department	
Ambulance	
Hospital	
Poison Center	
Other	

Training Available:

Training Available	Location / Time	Required

Training Needed:

Section 11: Emergency Response Plan

Emergency Response Plan:

Do you have a written Emergency Response Plan?

☐ Yes ☐ No

If yes, please insert your Emergency Response Plan here.