

Drinking Water System Operation and Maintenance Plan

Instructions to System

This template is provided by the NMED-DWB as a guide for water systems developing their operation and maintenance plan (OMP). Contents correspond to the associated checklist (included) that the DWB uses when providing technical assistance and when reviewing these plans for system compliance or funding requests. Please note that all items may not apply to your water systems, some items may be included as standard operating procedures (SOPs), as appendices or in multiple chapters (provide once and reference back to original location).

The template is organized with a title page, a table of contents, sections 1-12 comprising the OMP body and appendices A-P. Section 11 may not apply to your system depending on system age. In the early 2000's NMED-DWB staff or 3rd party contractors developed Source Water Protection Plans for all active systems in New Mexico; hard copies were provided to most systems. You may be able to obtain an electronic version from your system Compliance Officer. Use Section 11 to provide the DWB an update of your system's plan status.

Similarly, all appendices may not apply. For those that don't apply you can either delete all reference to them in the table of contents and in the body of the OMP and reorder the remaining ones, or you can designate "N/A" next to any appendices titles in the table of contents that don't apply, leave the references in the body of the plan as they are and include all appendix title pages. Those that are "N/A" will serve as place-holders.

Each section has been formatted with some fundamental structure to enable you to add the required information. You are welcome to change the formatting for your purposes, but keep in mind that your plan will be evaluated based on the minimum information outlined in the checklist and requested in each section. Where appropriate some sections repeat the checklist outline criteria, include examples appropriate for that section or provide specific instructions. These are highlighted in **yellow**. Replace that information with system-specific information that meets the checklist criteria; again, formatting is at your discretion.

Keep in mind the overall objectives of the OMP which are to help the system (including, but not limited to):

- define your organizational structure
- formalize general and detailed description of system components and treatment units
- schedule standard operating, maintenance and sampling procedures (SOPs, SMPs and SSPs)
- define specifications for new installations and repairs
- identify chemical, appurtenance and equipment suppliers and contractors
- schedule activities and reports, such as:
 - meter reading and water balance calculations
 - conservation fee payments to NMTRD
 - monthly water use to NMOSE
 - applicable sampling to NMED-DWB (such as total coliform, lead & copper, disinfection by-products)
 - quarterly chlorine residuals to NMED-DWB
 - annual consumer confidence report to NMED-DWB and your customers

Drinking Water System Operation and Maintenance Plan Minimum Essential Criteria Review Checklist

The following checklist is provided by the NMED-DWB as a guide for water systems developing their operation and maintenance plan (OMP). The DWB will also use the checklist when providing technical assistance and when reviewing these plans for compliance. Please note that all items may not apply to all water systems, some items may be included as standard operating procedures (SOPs), as appendices or in multiple chapters (provide once and reference back to original location).

This plan is required by the DWB so that systems can convey to the Bureau that they are aware of every component of their system, how each one works individually and together to provide multi-barrier protection against contamination, and that the system has the capacity to operate their system. Missing or inadequate OMPs will be noted as a significant deficiency during a sanitary survey and the DWB Compliance Officer will require the water system to address this deficiency within a prescribed timeframe. Similarly, systems applying for certain public funds for water system improvements will be assessed by their capacity to operate their system; the OMP is one of those technical capacity criteria.

Checklist Items

- Title page with water system name, PWS #, contact info, preparer's name & date prepared, revisions tracking
- Table of Contents
- Section 1 - System Ownership and Designations
 - Ownership name(s) & contact info
 - System type based on federal definitions
 - System source(s) based on federal definitions
 - Contact list; governing board, admin, operations/maintenance
- Section 2 - Introduction and Overview
 - Purpose of O&M Plan
 - System mission
 - Plan contents overview
 - Review frequency and updates
 - Use as training tool for new hires
- Section 3 – System Organizational Structure and Contacts, including ownership, governance & operations
 - Personnel list with job title and summary of duties & responsibilities
 - Training/continuing education requirements
 - Reference Appendix A for job descriptions
 - Reference Appendix B for all operator and other certificates/licenses
 - Include contract operator contract(s) in Appendix B if operator not an employee of system
- Section 4 - Regulatory Agency(s) and Regulations
 - Identify water system NMED-DWB Compliance Officer with contact info
 - Reference Appendix C for NMED SDWA regulations
- Section 5 - General System Description
 - System background
 - Location, population served, number of connections
 - Flow demands
 - Types of services, rate structure
 - Water source(s)
 - Water rights
 - Typical raw water analysis (reflecting annual/seasonal fluctuations)
 - How it is conveyed
 - Treatment
 - Disinfection
 - Storage
 - Distribution features

- Reference Appendix D for site map showing facilities and service area
- Same description can be used for sample siting plan and emergency response plan
- Section 6 - System Operation and Control
 - Table or outline of Start-up, Operation and Control, Troubleshooting, Shutdown and Emergency procedures for each system feature
 - Organize tasks daily, weekly, monthly, quarterly, semi-annual, annual, on-going (or other frequencies, as needed)
 - Include diagrams and/or photographs
 - Use tasks to create tracking documents to log operator activities
 - Reference Appendix E for operator log documents
 - Well, surface and/or GUWDI source(s)
 - Active and inactive
 - SWL, PWL, DD, production, electrical data
 - Water balance calculations
 - Reference Appendix F for well permit(s)/log(s)/water rights from OSE
 - Transmission
 - Treatment
 - Disinfection
 - Storage
 - Water age determination SOP
 - Corrosion control
 - Inspection, cleaning & repair protocols/SOPs
 - Pressure tanks
 - Pump stations
 - Distribution system – pipe, valves, hydrants, meters
 - Standard plans and specifications for new installations, expansions
 - New service connection SOP
 - Specialty valves such as PRV, altitude
 - Flushing
 - Valve exercise program
 - Cross-connection control
 - Customers with private wells
 - Fire protection
 - Backflow/back siphonage protection
 - SCADA
 - Back-up power
 - Description of any water purchase or sales agreements
 - Reference Appendix G for contracts
 - Reference Appendix H for equipment technical data, specifications, as-builts, other drawings
 - Reference Appendix I for manufacturer's O&M manuals
- Section 7 – Testing, Recordkeeping and Reporting
 - Reference Appendix J for **REQUIRED** DWB-approved Sample Siting Plan (separate document)
 - Meter testing and calibration (master, service, others)
 - Calibration of field/lab instrumentation
 - Disinfectant residual monitoring and reporting
 - Special samples identification and protocol
 - New installations or repair
 - Secondary contaminants
 - Process control samples
 - Recordkeeping SOPs for types of records and duration
 - Monthly Operating Reports (MORs) for SW/GWUDI only
 - Monthly OSE water production reporting
 - Water conservation fee payments
 - Public notification procedures
 - Annual CCRs

- Reference Appendix K for testing/calibration/maintenance tracking forms, 3rd party equipment testing/calibration/maintenance contracts, disinfectant residual monitoring & reporting forms, MOR templates and monthly OSE report template
- Section 8 – Maintenance
 - Reference manufacturer's maintenance procedures from O&M manuals in Appendix I
 - Preventive maintenance (PM) task table or outline for each system feature based on manufacturer's recommendations and system's operational experience
 - Organize tasks daily, weekly, monthly, quarterly, semi-annual, annual, on-going (or other frequencies, as needed)
 - Use tasks to create tracking documents to log PM activities
 - Develop breakdown maintenance tracking documents to maintain repair history
 - Table or outline of all contractors approved to service/repair system equipment
 - Repair/service protocol, NSF-60/61 specifications and SOPs
 - Internal
 - 3rd party call-out
 - Reference Appendix L for PM and breakdown maintenance tracking documents
- Section 9 – Spare Parts, Supplies, and Chemicals
 - Table or outline of spare parts, supplies (i.e., safety) and chemicals for each system feature based on manufacturer's O&M manuals, system experience, maintenance and repair history
 - NSF-60/61 specifications and status
 - Include part name & #/mfg. ID, description, minimum quantity needed, quantity in inventory, cost, priority ranking (i.e., critical, high, moderate, low), order lead time
 - Reference Appendix M for list of sources for all equipment, parts, supplies and chemicals
 - Include account rep, account number, open PO #s, equipment/parts/supplies/chemicals available, NSF status, delivery/pick up requirements
- Section 10 – Safety
 - Table or outline of personal protective equipment (PPE) required for all operator tasks (reference tasks in Section 6)
 - Safety SOPs, such as
 - Accident investigation
 - Operating motor vehicles
 - Forklift
 - Backhoe
 - First aid/CPR
 - Fire protection
 - Chemical safety/hazard communication/SDS
 - chlorine
 - Trenching/shoring
 - Lock-out/tag-out
 - Confined space
 - Reference Appendix N for all relevant OSHA regulations
- Section 11 – Emergency Preparedness and Response
 - Table or outline of all emergency contacts
 - Internal contacts within system
 - Primary/secondary/tertiary/etc persons responsible for initiating response
 - May be different for different events
 - External contacts
 - NMED-DWB (other bureaus depending on issue)
 - NM State Police
 - County Sheriff
 - Fire department
 - Medical 1st responder(s)
 - Analytical lab(s)

- Utilities – electric, gas
 - Contractors for repair, service
- Emergency notification procedure(s) protocol/SOP
 - Is system a NM WARN member
- Reference Appendix O for DWB-approved Emergency Response Plan (separate document)
 - Requirement based on system size
 - May also be required for funding readiness
- Section 12 – Source Water/Wellhead Protection Plan
 - Could also include water conservation and/or drought contingency plans
 - Reference Appendix P for DWB-approved SW/WHP Plan (separate document)
- Appendices
- Appendix A: Job Duties and Responsibilities by Job Title
- Appendix B: Operator Information
 - Certificates/Other Certificates/Licenses
 - Contract Operator contract
- Appendix C: NMED Drinking Water Regulations (current, effective date)
- Appendix D: Site Map
- Appendix E: System Operation and Control Logs
- Appendix F: OSE Well Documents
- Appendix G: Water Purchase or Sales Agreements/Contracts
- Appendix H: Equipment Technical Data, Specs and Drawings
- Appendix I: Manufacturer's O&M Manuals
- Appendix J: DWB-approved Sample Siting Plan
- Appendix K: Testing, Recordkeeping and Reporting Forms and Templates
- Appendix L: Preventive and Breakdown Maintenance Tracking Documents
- Appendix M: List of Equipment Manufacturers & Reps, Spare Parts & Supplies and Chemical Suppliers
- Appendix N: Safety
- Appendix O: Emergency Response Plan
- Appendix P: Source Water/Wellhead Protection Plan

Additional Resources:

- NMED-DWB home page can be found at <https://www.env.nm.gov/dwb/index.htm>
- NMED-DWB Drinking Water Watch for specific system details, general sample schedule and sample results, CCR data generator can be found at <https://dww.water.net.env.nm.gov/DWW/>
- The US EPA maintains a CCR development tool systems can use to input and save annual water quality report data; tool requires account for log-on credentials and can be accessed at www.ccwriter.com/
- The US EPA published a best practices guide that lists distribution system operation and maintenance tasks and suggested frequencies for completing those tasks; the tasks listed in the guide have been rearranged by frequency for operational guidance; the guide can be downloaded at http://www.epa.gov/ogwdw000/smallsystems/pdfs/guide_smallsystems_dist_system_08-25-06.pdf.
- Completion of the tasks can be documented using the log cards that are part of the EPA Preventative Maintenance Card File for Small Public Water Systems Using Ground Water, EPA 816-B-04-002 December 2004 (EPA Log Cards); download available from http://www.epa.gov/safewater/smallsystems/pdfs/logcards_smallsystems_preventivemaintainance.pdf
- EPA also prepared a guide booklet which explains how the cards should be used to document maintenance activities; the booklet is available at http://www.epa.gov/safewater/smallsystems/pdfs/booket_smallsystems_preventmaint.pdf

The template begins on the next page.

TITLE PAGE

OPERATION AND MAINTENANCE PLAN FOR:

Water System Name_____

PWS # NM35-XXX-XX

O&M PLAN REVISION TRACKING

Water System Name _____

PWS # NM35-XXXX-XX

Original Plan Prepared By
Date Prepared

1st Revision By
1st Revision Date
Date Submitted to NMED

2nd Revision By
2nd Revision Date
Date Submitted to NMED

O&M PLAN TABLE OF CONTENTS FOR <SYSTEM NAME>

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Appendix N Safety	
Appendix O Emergency Response Plan	
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Section 1 System Ownership and Designations

Ownership

System Name and PWS #:

System Owner (if private):

State of NM ID #, PRC # (or similar):

System Type (if MDWCA or similar):

Physical Address:

City & Zip:

Mailing Address:

City & Zip:

Phone:

FAX:

Email:

Designations

Federal Type*: Community Non-transient Non-Community Transient Non-Community (Circle One)

*Definitions:

Public water systems have at least 15 connections or serve at least 25 people 60 days per year.

Community systems regularly serve at least 25 people year-round

Non-transient non-community systems serve at least 25 of the same people at least 6 months per year

Transient non-community systems serve a constantly changing population of at least 25 people at least 6 months per year

Additional details can be found at <http://water.epa.gov/infrastructure/drinkingwater/pws/factoids.cfm>.

Federal Source**:	Groundwater	Groundwater Purchase
(circle one)	Surface Water	Surface Water Purchase
	Groundwater/GWUDI	Groundwater/GWUDI Purchase

**Definitions:

Groundwater

- subsurface water occupying the zone of saturation, from which springs and wells are fed
- a ground water source includes all water obtained from drilled wells or springs
- groundwater is from an approved sand and gravel aquifer

Groundwater Under Direct Influence of Surface Water (GWUDI)

- any water beneath the surface of the ground with significant occurrence of insects or other microorganisms, algae, or large-diameter pathogens such as *Giardia lamblia* or *Cryptosporidium*, or
- significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH which closely correlate to climatological or surface water conditions
- direct influence must be determined for individual sources in accordance with criteria established by the State and may be based on site-specific measurements of water quality and/or documentation of well construction characteristics and geology with field evaluation

Surface Water

- all water which is open to the atmosphere, subject to surface runoff and characterized by extreme variability in quantity and quality

Section 2 Introduction And Overview

The overall goal of our water system is to provide safe, potable drinking water that meets or exceeds all State and Federal regulations. We also strive to maintain our water system with adequate capacities and pressures to meet the needs of our customers as well as maintain our facilities in a manner which allows them to run as safely as possible for many years.

This Operation & Maintenance (O&M) Manual is used as a working reference for the overall operation

and maintenance of our water system and as a training tool for new hires. The manual contains system contact information, a description of system features along with their operation and maintenance, work sheets, record keeping forms, safety and emergency procedures, and a sampling plan for monitoring the quality of our drinking water.

Our training and continuing education policy is as follows:

This manual will be updated within 1 month of any changes to any aspect of the water system such as equipment, treatment, personnel or procedures. Those revisions will be tracked on the plan's revision tracking page and an updated version will be sent to our NMED-DWB Compliance Office within 1 month of the plan revision(s).

Section 3 System Organizational Structure and Contacts

Organization

Our water system is organized as a municipality / MDWCA / Water Co-Op / WSD / WUA / other.

The following individuals are members of the public water system's governance, operational and managerial staff. Each person has key responsibilities which contribute to the water system's goal of providing clean, potable drinking water to customers. The governing body is responsible for <add brief description of governing body's responsibilities>.

Contacts

The following is a list of all system contacts (including volunteers) that have decision-making responsibilities for our system:

EXAMPLES – identify name, title/position/staff role and contact info

Mary White, Mayor

All Managerial and Financial decisions are made by the Mayor.

Sue Black, City Clerk

Responsible for meter reading, billing and collecting, issuing CCR. Reports to the Mayor.

Ken Brown, Chief Operator

Responsible for operation and maintenance of the system; ordering spare parts, chemicals, and supplies; generating the annual Operating and Maintenance Budgets, and generating the monthly report to OPH. Reports to the Mayor.

Bob Blue, Operator

Responsible for recording all readings and performing all tests. Reports to the Chief Operator.

Job titles along with the detailed duties and responsibilities can be found in Appendix A. Operator certificates are included in Appendix B. In general, the following staff (or volunteers) have decision-making responsibilities for the water system:

Section 4 Regulatory Agency and Regulations

New Mexico Environment Department (NMED) is an executive agency of the State of New Mexico. NMED through its Drinking Water Bureau (DWB) was delegated Safe Drinking Water Act (SDWA) primacy in 1978 from the US EPA. This delegation gives the NMED the authority to regulate the state drinking water regulations and National Primary Drinking Water Regulations (NPDWR) at Public Water Systems.

Our NMED-DWB Compliance Officer is:

Name:

Title:

Organization: NMED-DWB; <http://www.env.nm.gov>

Office/Cell #s:

Toll-Free Phone #:

Fax #:

Email Address:

Mailing Address:

Resources

Drinking Water Bureau - <http://www.nmenv.state.nm.us/dwb/Index.htm>

Drinking Water Watch - <https://eidea.nmenv.state.nm.us/DWW/>

NM Drinking Water Regulations - the regulations which govern the operation and maintenance of a Public Water System within the State of New Mexico are 20.7.10 NMAC which incorporate 40 CFR 141 and 40 CFR 143 of the National Primary Drinking Water Regulations. Copies of the regulations are included in Appendix C and can be found at:

New Mexico Drinking Water Regulations, <http://164.64.110.239/nmac/parts/title20/20.007.0010.pdf>,

National Primary Drinking Water Regulations, <http://www.gpo.gov/fdsys/pkg/CFR-2014-title40-vol23/pdf/CFR-2014-title40-vol23-part141.pdf>, and

National Secondary Drinking Water Regulations, <http://www.gpo.gov/fdsys/pkg/CFR-2014-title40-vol23/pdf/CFR-2014-title40-vol23-part143.pdf>.

Section 5 General System Description

Include:

- System background
 - Location, population served, number of connections
 - Flow demands
 - Types of services, rate structure
- Water source(s)
 - Water rights
 - Typical raw water analysis (reflecting annual/seasonal fluctuations)
- How it is conveyed
- Treatment
- Disinfection
- Storage
- Distribution features
- Reference Appendix D for site map showing facilities and service area
- Same description can be used for sample siting plan and emergency response plan

EXAMPLE:

The <water system> is owned and operated by <xxx> and serves X connections through Y meters. All meters are for residential service. We have a population of Z based on the most recent census data. Average daily flow is # gpm; peak flow is ## gpm.

Water is supplied to the system by three (3) 300 GPM @ 65 PSI well pumps pumping from 6 inch casings 600 feet deep with 20 feet long 6 inch screens. The pumps are automatically started and stopped by level control on an elevated 150,000 gallons storage tank. The elevation of the tank maintains 42 to 50 PSI on the distribution system. The well water is disinfected with gaseous chlorine prior to leaving each well site. The distribution system consists of 6, 4, 3, and 2 inch PVC pipe and fittings; sampling, isolation, back flow prevention, and flush valves; and fire hydrants. There are five entry points and provisions for line isolation and flushing have been installed. In the event of an electrical power outage, a 50 HP diesel driven generator at each well site will provide the power necessary to keep the total system running. We can supply water to the <adjacent water system name> via a 6 inch tie-in. The tie-in valve is normally closed and a check valve prevents backflow into our system. Fire protection for the city is also provided.

Appendix D includes a site map showing system facilities and our service area.

Section 6 System Operation and Control

Include:

- Table or outline of Start-up, Operation and Control, Troubleshooting, Shutdown and Emergency procedures for each system feature
 - Organize tasks daily, weekly, monthly, quarterly, semi-annual, annual, on-going (or other frequencies, as needed)
 - Include diagrams and/or photographs
 - Use tasks to create tracking documents to log operator activities
 - Reference Appendix E for system operation and control logs
- Well, surface and/or GUWDI source(s)
 - Active and inactive
 - Static water level (SWL), pumping water level (PWL), drawdown (DD), production, electrical data
 - Water balance calculations

- Reference Appendix F for well permit(s)/log(s)/water rights from OSE
- Transmission
- Treatment
- Disinfection
- Storage
 - Water age determination SOP
 - Corrosion control
 - Inspection, cleaning & repair protocols/SOPs
- Pressure tanks
- Pump stations
- Distribution system – pipe, valves, hydrants, meters
 - Standard plans and specifications for new installations, expansions
 - New service connection SOP
 - Specialty valves such as PRV, altitude
 - Flushing
 - Valve exercise program
 - Cross-connection control
 - Customers with private wells
- Fire protection
 - Backflow/back siphonage protection
- SCADA
- Back-up power
- Description of any water purchase or sales agreements
 - Reference Appendix G for contracts
- Reference Appendix H for equipment technical data, specifications, as-builts, other drawings
- Reference Appendix I for manufacturer’s O&M manuals

EXAMPLE:

Operation of the <water system> is provided by <name(s)> who is/are currently licensed by the NMED-UOCP as <levels>.

<operator name(s)> operational responsibilities and procedures are as follows:

Table 1 Distribution System Routine Operational Tasks (Adapted from EPA 816-F-06-038, September 2006)		
Frequency	Task	Benefits
Continuously	Maintain the operating pressure range of distribution system	<ul style="list-style-type: none"> ❖ Reduces the risk of backflow contamination. ❖ Helps your system provide better service to customers. ❖ Reduces damage to infrastructure due to excess pressure. ❖ Provides adequate fire flow.
Daily	Track unaccounted for water	<ul style="list-style-type: none"> ❖ Can reduce pumping and treatment costs. ❖ Helps identify leaks, breaks, stolen water, and inaccurate meters.
Daily	Inspect storage tanks	<ul style="list-style-type: none"> ❖ Detects vandalism. ❖ Ensures that access hatches are locked.
Monthly	Test for presence of excess biofilms	<ul style="list-style-type: none"> ❖ Indicates a presence of inadequate chlorine residual, possible high disinfection byproduct levels, and water stagnation.
Monthly	Monitor water quality (e.g., pH, temperature)	<ul style="list-style-type: none"> ❖ Provides information on potential contamination of raw and finished water. ❖ Helps determine effectiveness of treatment. ❖ Helps assure the compatibility of the water with the materials.
Annually	Inspect valves Exercise valves	<ul style="list-style-type: none"> ❖ Improves reliability. ❖ Familiarizes crews with valve location. ❖ Identifies inoperable valves. ❖ Locates obstructed valve boxes. ❖ Ensures isolation of distribution system sections when necessary.

Table 1 Distribution System Routine Operational Tasks (Adapted from EPA 816-F-06-038, September 2006)		
Frequency	Task	Benefits
Annually	Inspect storage tanks	<ul style="list-style-type: none"> ❖ Identifies defects. ❖ Ensures that vents, overflows, and drains are screened.
Annually	Flush pipelines Inspect flush hydrants	<ul style="list-style-type: none"> ❖ Removes aged water from the pipeline. ❖ Reduces buildup of biofilms and sediments. ❖ Restores disinfectant residual. ❖ Ensures that hydrants and valves are operable and that no water losses occur. ❖ Ensures that hydrants and valves are not susceptible to tampering.
Annually	Monitor for corrosion	<ul style="list-style-type: none"> ❖ Identifies the need to modify treatment or conduct flushing.
Annually	Update distribution system maps	<ul style="list-style-type: none"> ❖ Provides an accurate record of the location of facilities to expedite actions required during an emergency response
Triennially	Clean storage tanks	<ul style="list-style-type: none"> ❖ Improves protection against sources of contamination.
When indicated	Rehabilitate storage tanks	<ul style="list-style-type: none"> ❖ Extends the useful life of the equipment.
Manufacturer's recommendation	Check for normal wear	<ul style="list-style-type: none"> ❖ Can extend the useful life of infrastructure components. ❖ Helps avoid unnecessary replacement or operational costs.
When repairs are made	Log water line repairs	<ul style="list-style-type: none"> ❖ Identify areas where failure may occur

Appendix E contains system operation and control logs; Appendix F OSE well permits, well logs and water rights permits; Appendix G water sales/purchase contracts. Appendix H includes equipment technical data, specifications, as-builts and other drawings; Appendix I manufacturer's O&M manuals.

Section 7 Testing, Recordkeeping and Reporting

Routine samples from our distribution system are collected and analyzed according to the required NMED-approved Sample Siting Plan included in Appendix J.

Other testing, recordkeeping and reporting activities are conducted as follows:

Include:

- Meter testing and calibration (master, service, others)
- Calibration of field/lab instrumentation
- Disinfectant residual monitoring and reporting
- Special samples identification and protocol
 - New installations or repair
 - Secondary contaminants
 - Process control samples
- Recordkeeping SOPs for types of records and duration
- Monthly Operating Reports (MORs) for SW/GWUDI only
- Monthly OSE water production reporting
- Water conservation fee payments
- Public notification procedures
- Annual CCRs

Following is a list of records and reports that we keep on file for regulatory and operational purposes. Items 1 through 4 are required by the NMED-DWB; minimum time is in parentheses.

1. Monthly total coliform sample results (5 years)
2. Chemical sample results; sampling frequency may vary based on DWB requirements (10 years)
3. Lead and copper sample Results (12 years)
4. Variances (5 years after the expiration of the variance)

5. MORs, Monthly Operating Reports (5 years)
6. Quarterly chlorine residual reports (5 years)
7. Operations & control, maintenance and repair logs (3 years)
8. Copies of sanitary surveys (10 years)
9. CCRs, Consumer Confidence Reports (10 years)
10. Operator Certifications
11. All correspondence with New Mexico Environment Department Drinking Water Bureau (10 years)

Reference Appendix K for testing/calibration/maintenance tracking forms, 3rd party equipment testing/calibration/maintenance contracts, disinfectant residual monitoring & reporting forms, MOR templates and monthly OSE report template.

Section 8 Maintenance

Include:

- Preventive maintenance (PM) task table or outline for each system feature based on manufacturer's recommendations and system's operational experience
 - Organize tasks daily, weekly, monthly, quarterly, semi-annual, annual (or other frequencies, as needed)
 - Use tasks to create tracking documents to log PM activities
 - Develop breakdown maintenance tracking documents to maintain repair history
- Table or outline of all contractors approved to service/repair system equipment
- Repair/service protocol, NSF-60/61 specifications and SOPs
 - Internal
 - 3rd party call-out

Appendix L contains our preventive and breakdown maintenance tracking documents.

Section 9 Spare Parts, Supplies and Chemicals

Include:

- Table or outline of spare parts, supplies (i.e., safety) and chemicals for each system feature based on manufacturer's O&M manuals, system experience, maintenance and repair history
 - NSF-60/61 specifications and status
 - Include part name & #/mfg. ID, description, minimum quantity needed, quantity in inventory, cost, priority ranking (i.e., critical, high, moderate, low), order lead time
- Reference Appendix M for list of sources for all equipment, parts, supplies and chemicals
 - Include account rep, account number, open PO #s, equipment/parts/supplies/chemicals available, NSF status, delivery/pick up requirements

EXAMPLE:

Equipment

A. Water Well Pump

Impeller
Shaft
Seal
Coupling

B. Distribution Piping

6 – 2" Water Meters
2 – 2" Plug Valves
2 – 2" Check Valves
100' – 2" PVC Pipe
100' – 3" PVC Pipe
100' – 4" PVC Pipe
100' – 6" PVC Pipe
100' – 8" PVC Pipe
2 – 4" Fire Hydrants
Various 2, 3 and 4 inch pipe fittings

C. Chlorination System

Chlorinator
Tubing

Tubing Fittings
Tubing Valves

Supplies
Chlorine Residual Test Tablets

Chemicals
Chlorine Gas

See Appendix M for list of sources for all NSF-60/61 and non-NSF equipment, parts, supplies and chemicals.

Section 10 Safety

Safety is our number one priority for all employees. All employees are required to follow safe work practices coming to, during and leaving work.

In general, we expect our employees to wear proper Personal Protective Equipment (PPE) for the job they are assigned, follow all system and manufacturer safety procedures when working with chemicals and equipment, and follow all OSHA requirements. Specifically, our practices and procedures include:

Include:

- Table or outline of personal protective equipment (PPE) required for all operator tasks (reference tasks in Section 6)
- Safety SOPs, such as
 - Accident investigation
 - Operating motor vehicles
 - Forklift
 - Backhoe
 - First aid/CPR
 - Fire protection
 - Chemical safety/hazard communication/SDS
 - chlorine
 - Trenching/shoring
 - Lock-out/tag-out
 - Confined space

Reference Appendix N for all relevant OSHA regulations.

Section 11 Emergency Preparedness and Response

Emergency Response Plan Requirements

The NMED Drinking Water Bureau (DWB) requires that all community public water systems develop and submit an ERP for DWB approval in order to ensure that systems have the ability to manage water outage or shortage situations without delays in providing safe, potable water to customers. Further, we recognize the need for a systematic response to both routine operating emergencies such as line breaks, pump malfunctions, power outages, water loss and pathogen contamination, and more serious non-routine emergencies such as chemical spills (internal or external), drought/windstorms/ fires/flooding/other natural disasters and acts of sabotage. Each of these events can have unique effects on different system components and may threaten our system's ability to deliver safe and reliable drinking water.

A copy of our Emergency Response Plan is included in Appendix O and is incorporated as an integral component of this OMP. It is reviewed and updated on an <annual> basis.

NM WARN Membership Status

We are not members of NM WARN.

OR

We are members of NM WARN, and as members we have the following benefits and responsibilities:

- Benefits

- **Responsibilities**

We have developed the following emergency notification procedure(s) protocol/SOP for all anticipated routine and non-routine emergency events:

Include:

- Internal contacts within system
 - Primary, secondary, tertiary, etc persons responsible for initiating response
 - May be different for different events
- External contacts
 - NMED-DWB (other bureaus depending on issue)
 - NM State Police
 - County Sheriff
 - Fire department
 - Medical 1st responder(s)
 - Analytical lab(s)
 - Utilities – electric, gas
 - Contractors for repair, service
- Response protocols/SOPs
 - Routine operating events such as
 - line breaks
 - pump malfunctions
 - power outages
 - water loss
 - pathogen contamination
 - non-routine events such as
 - chemical spills (internal or external)
 - drought
 - windstorms
 - fires
 - flooding
 - other natural disasters
 - acts of sabotage

Section 12 Source Water/Wellhead Protection Plan

We have an active Source Water/Wellhead Protection Plan. It is reviewed and updated on an <annual> basis. A copy is included in Appendix P and is incorporated as an integral component of this OMP.

OR

We have an older Source Water/Wellhead Protection Plan that was developed by <x> in <date>. It has not been reviewed or updated since <date>. A copy is included in Appendix P.

OR

We do not have a Source Water/Wellhead Protection Plan.

APPENDIX A

JOB DUTIES AND RESPONSIBILITIES

APPENDIX B

OPERATOR CERTIFICATES

OPERATOR CONTRACT

APPENDIX C

NMED DRINKING WATER REGULATIONS

APPENDIX D

SITE MAPS

APPENDIX E

SYSTEM OPERATION & CONTROL LOGS

EXAMPLES:

Maintain the operating pressure range of distribution system (Continuous Task)

Check water levels at storage tanks and pressure at pressure tanks and booster pumps to determine whether system pressure is within the operating range for your distribution system. Table E.1 can be used to record water level and pressure readings for storage tanks and pressure tanks.

Table E.1 Daily Water Pressure Evaluation (Adapted from 816-B-04-002 December 2004)						Month/Year	
Date	Water level at tank (units)	Time of Reading	Pressure at tank (units)	Time of Reading	Pressure at booster pump	Time of Reading	Action Taken
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							
Normal operating range: Water Level () Pressure () Booster ()							

Track unaccounted for water (Daily)

Use Table E.2 to record meter readings and to calculate production. Unusually high flows may indicate leaks or unauthorized use. The dates are in reverse order to make calculations easier.

Table E.2 Daily Water Production Log Card (Adapted from 816-B-04-002 December 2004)			Month/Year
Date	Meter Reading	Amount of Water Used	Notes or Comments
31			
30			
29			
28			
27			
26			
25			
24			
23			
22			
21			
20			
19			
18			
17			
16			
15			
14			
13			
12			
11			
10			
9			
8			
7			
6			
5			
4			
3			
2			
1			

Test for presence of excess biofilms (Monthly)

Total coliform detections, loss of chlorine residual, taste & odor complaints, color, and particulates may all be indicators of the presence of biofilms in the water. Record any of these conditions.

Table E.3 Biofilm Indicator						
Year –		Insert the symbol “●”when a biofilm indicator is observed.				
Month	TC	Cl ₂	Taste/Odor	Color	Particulate	Action
Jan						
Feb						
Mar						
Apr						
May						
Jun						
Jul						
Aug						
Sep						
Oct						
Nov						
Dec						

Monitor water quality – e.g. pH, temperature (Monthly)

Water quality parameters such as pH, temperature and total dissolved solids should be monitored regularly to establish baseline levels. Baseline levels can be compared to levels observed after a system breach to indicate the likelihood of a public health threat. Also, if your water system provides treatment you may add other water quality parameters such as orthophosphate concentration used for corrosion control to reduce lead and copper concentrations.

Table E.4 Record of Water Quality Monitoring						
Year –		List normal ranges for water quality parameters below.				
Month	pH	Temp °F	TDS ppm	Other units	Other units	Other units
Jan						
Feb						
Mar						
Apr						
May						
Jun						
Jul						
Aug						
Sep						
Oct						
Nov						
Dec						

Inspect and exercise valves (Annually)

Table E.5 Valve Log Card (Adapted from EPA 816-B-04-002 December 2004)							
Date	Time	Valve Number	Location	Type: • Gate • Plug • Etc.	Position: • Open • Closed • Partial	#Turns & Direction to Close	Comments: • OK • Repairs needed • Doesn't seat • Etc.

Inspect storage tanks (Annually)

Table E.6 can be used to record the annual tank inspection. The tank is to be inspected for sanitary deficiencies and defects.

Table E.6 Storage Tank Annual Inspection		
Protective Measure Intact?	<input type="checkbox"/> Yes	<input type="checkbox"/> If “No” list action scheduled
Vent screen	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Overflow screen	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Overflow flapper	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Exterior coating	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Foundation	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Disinfection	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Operating Level	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Log water line repairs (When repairs are made)

Inspect for normal wear and at intervals recommended by the manufacturer, complete maintenance actions. Customize the manufacturer's instructions by including valve numbers and locations or other equipment designations, e.g., Pump #3 in Booster Station #2

A direct quote from the EPA Preventative Maintenance Card File for Small Public Water Systems Using Ground Water Guide Booklet states *"Water distribution line repairs should be documented, especially when there are repairs/clamps, etc., placed on the line. These types of repairs are not normally intended for long-term/permanent repairs, but are often performed with that intent. A thorough record of line replacements may help identify areas of the distribution line that are more prone to failure due to age, vibration, or other causes."*

Table E.7 can be used to document water line repairs.

Table E.7 Waterline Repairs Log (Adapted from EPA 816-B-04-002 December 2004)				
Date	Location	Size	Replaced/Repaired	Comments

APPENDIX F

OSE WELL DOCUMENTS

APPENDIX G

WATER PURCHASE/SALES AGREEMENTS

APPENDIX H

EQUIPMENT TECHNICAL DATA & SPECIFICATIONS

EQUIPMENT DRAWINGS

APPENDIX I

MANUFACTURER'S O&M MANUALS

APPENDIX J

NMED DWB-APPROVED SAMPLE SITING PLAN

APPENDIX K

TESTING, RECORDKEEPING & REPORTING FORMS & TEMPLATES

APPENDIX L

PREVENTIVE & BREAKDOWN MAINTENANCE TRACKING FORMS

APPENDIX M

LIST OF EQUIPMENT MANUFACTURERS & REPS, SPARE PARTS & SUPPLIES AND CHEMICAL SUPPLIERS

EXAMPLE OF ENTRIES FOR APPENDIX M:

List of Manufacturers and Suppliers

Water Well Pump
Bayne Pump, Inc.
1111 Elm Blvd.
Anytown, La 70001
Phone: (225) 987-1111
FAX: (225) 987-1112

Emergency Generator
Adams Electrical
9999 Elm Blvd.
Anytown, La 70001
Phone: (225) 987-2221
FAX: (225) 987-2223

Chlorinator, Chlorine Cylinders, & Chlorine Test Kits

AB Chemicals, Inc.
4444 Elm Blvd.
Anytown, LA
Phone: (225) 987-4444
FAX: (225) 987-4445

All Forms, Reports, Etc.

Acme Printing, Inc.
5555 Elm Blvd.
Anytown, LA 70001
Phone: (225) 987-5555
FAX: (225) 987-5556

APPENDIX N

SAFETY/OSHA REGULATIONS

APPENDIX O

NMED DWB-APPROVED EMERGENCY RESPONSE PLAN

APPENDIX P

SOURCE WATER/WELLHEAD PROTECTION PLAN