Start-Up Procedure for Seasonal Public Water Systems

The United States Environmental Protection Agency's Revised Total Coliform Rule (RTCR) requires seasonal public water suppliers to implement a "state-approved start-up procedure." Starting April 1, 2016, all seasonal systems must start up with a state-approved procedure form at the beginning of each operating season.

MDEQ must receive certification from the public water supplier that the state-approved start-up procedure form has been completed.

Start-up at a seasonal public water supply is the opportune time for a thorough examination of the water system's physical components. If repairs are needed, they can be accomplished prior to the start of the season without being an imposition on customers. Properly maintained systems are less likely to have water quality problems.

For systems that depressurized during the off season, the sanitary condition of distribution system piping and components observed at the time of start-up is a reflection of the condition in which the system was depressurized at the time of shutdown. While a "shut down plan" is not part of the seasonal start-up procedure, it is strongly encouraged to leave piping and components in as sanitary condition as possible when the system shuts down for the season.

The MDEQ approved procedure form consists of the following required elements:

1. A system inspection
2. A thorough system flushing
3. An integrity check
4. Bacteriological sample(s)
5. Certification

*A **seasonal system** is a noncommunity public water supply that:*

- does not operate on a year-round basis and,
- starts up and shuts down at the beginning and end of each season.

A state-approved start-up procedure:

- provides public health protection by offsetting an increased contamination risk in water systems where piping and other system components are depressurized.
- promotes proper maintenance and system self-inspection.

Public water suppliers that are seasonal systems must:

- **Implement** a state-approved start-up procedure, and,
- **Certify** to MDEQ compliance with the procedure form before serving water to the public.

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The following four steps are REQUIRED. The pages following pages contain an extensive checklist that you may use to help review your system and address any needed maintenance.

1. Self-Inspection

The first step to startup the drinking water system is a full visual inspection.

- Look for any damage or evidence of contamination that may have occurred during the off-season.
- Inspect the wellhead(s) and verify that the well casing is structurally sound, the well cap is tightly attached, vents are downturned with intact screens, and electrical conduit is securely in place.
- Examine water treatment equipment, storage tanks, and surface water intake (if applicable). It is recommended that non-pressurized storage tanks are disinfected.
- Perform a walk-through of the distribution and plumbing systems.
- Observe pipes, valves, and backflow prevention devices. Ensure that valves are exercised (turned off and on) and repair/replace as needed.

2. Flushing

Flushing is essential maintenance; it removes contaminants and debris from the system.

- Flush all wells and water mains.
- Flush this water to the ground surface rather than into a sewage treatment system. Be aware that adequate flow is necessary to effectively flush lines, therefore open sufficient taps to obtain maximum flow rate. If applicable, watch the water level in any non-pressurized storage tanks so they do not run dry.
- Prior to flushing, remove all faucet strainers to prevent sediment from clogging them.
- If possible, flushing should progress from taps closest to the well or storage tank and end at taps furthest from the well or storage tank to ensure that clean water is used during flushing.
- Flush all service lines and building plumbing for a minimum of five minutes and the water runs clear. Large distribution systems may need to be flushed in sections one at a time in order to achieve adequate flow rates for effective flushing.

3. Integrity Check

Leaks in the system, especially in buried piping, provide potential conduits for contaminants to enter when the system is drained or when system pressure is lost. To help gain a better understanding of leakage within the distribution system(s), conduct an integrity check once the system is re-pressurized.

- After the distribution system is filled and pressurized, turn off all taps and the power supply to the well and/or distribution system pump.
- Read the system's pressure gauge and document the initial system pressure.
- After one hour, read the pressure gauge again and document the system pressure. Pressure loss over this one-hour time span may indicate leaks in the distribution could be present.

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4. Bacteriological Sample(s)

It is required that all public water suppliers collect and test their drinking water prior to opening for the season. This will help identify any water quality problems before opening and serving the public. If the water system has been disinfected, ensure that all the chlorine is flushed from the system prior to collecting the sample to be analyzed.

5. Optional Step: Disinfection

Water system disinfection is strongly encouraged by MDEQ and is an optional step in the start-up procedure. Disinfection kills microorganisms that can be introduced during shut down or the off-season.

For more information on the seasonal start up procedures contact:

RTCR Rule Manager:

406-444-4400
DEQRTCRLEVEL12@MT.GOV

Your DEQ Regional Field Offices:

Helena Region: 406-444-4400
Kalispell Region: 406-755-8985
Billings Region: 406-247-4430

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Check list for Systems:

This form will help you to identify potential problems with your water system that may allow contamination to enter. Complete those sections that are applicable to your system. Any item marked "no" means an improvement should be made. If you are unsure what improvement to make, contact the DEQ field services section (phone numbers and contact information is at the end of the form)

PWS Name:_____	**Source Type (GW, SW, GWP *etc.*):**	**PWS #:**_____
Well Source and Pump house	**Check one or check here if N/A** ☐	**Comments**
Is the pump house locked and protected from trespassers?	☐ Yes ☐ No	
Is the well protected from tampering? (*Locked cap, inside building or security fence)*	☐ Yes ☐ No	
Are all chemicals more than 100 ft away from the well?	☐ Yes ☐ No	
Is the well cap free from openings that might allow an insect, rodent or dirt to enter the well?	☐ Yes ☐ No	
Does the well vent face downward and is the screen intact?	☐ Yes ☐ No	
Is the electrical conduit pipe tightly sealed top and bottom without breaks, cracks or gaps?	☐ Yes ☐ No	
Is there a raw water sample tap and is it working properly?	☐ Yes ☐ No	
Do you have a water meter for the well and is it working?	☐ Yes ☐ No	Meter Reading:
Did you measure and record the static water level in the well?	☐ Yes ☐ No	Static level reading:
Chlorination (complete this section if the PWS chlorinates full-time)	**Check one or check here if N/A** ☐	**Comments**
Have you replaced all of the chlorinator tubing within the last 12 months?	☐ Yes ☐ No	
Have you inspected the chemical injection point and cleaned it?	☐ Yes ☐ No	
Have you verified the chemical feed pump is working properly?	☐ Yes ☐ No	
Did you buy new chlorine solution (NSF approved sodium hypochlorite) and discard last year's supply appropriately?	☐ Yes ☐ No	
Do you have free residual chlorine testing equipment and current reagent packets?	☐ Yes ☐ No	
Do you have chlorine residual report forms? (due by 10th day of following month)	☐ Yes ☐ No	
Other Treatment	**Check one or check here if N/A** ☐	**Comments**
Have all cartridge filters been replaced?	☐ Yes ☐ No	
If ultraviolet (UV) disinfection have you inspected the unit, cleaned water chamber (quartz sleeve) & changed the bulb?	☐ Yes ☐ No	

Pressure Tanks:	**Check one or check here if N/A ☐**	**Comments**
Are pressure tanks in good condition? (*Check no if they are waterlogged)*	☐ Yes ☐ No	
Is the system maintaining a minimum pressure greater than 35 psi?	☐ Yes ☐ No	
Storage tanks (or cisterns): If cisterns, please mention in comments.	**Check one or check here if N/A ☐**	**Comments**
Have you cleaned the inside of the tank within the last 5 yrs.?	☐ Yes ☐ No	
Is the tank overflow pipe screened with fine screen that is intact?	☐ Yes ☐ No	
Is the access hatch locked and are the gaskets in good condition?	☐ Yes ☐ No	
Are insects, spiders and dirt being kept out of the hatch area, especially on the inside of the lid?	☐ Yes ☐ No	
Is there evidence of leaks?	☐ Yes ☐ No	
Distribution system:	**Check one**	**Comments**
Have you checked the system for leaks?	☐ Yes ☐ No	
Do all outdoor hose bibs have hose bib vacuum breakers installed?	☐ Yes ☐ No	
RV Dump Station:	**Check one or check here if N/A ☐**	**Comments**
Does your RV dump station have a backflow assembly and can you ensure the drinking water hose does not reach the sewer pad?	☐ Yes ☐ No	
Sampling	**Check one**	**Comments**
Do you have an updated bacteria sample site plan with distribution sample locations properly identified?	☐ Yes ☐ No	
Do you have all sample bottles on hand? (bacteria and nitrate)	☐ Yes ☐ No	
Optional Procedures:	**Check one**	**Comments**
Did you disinfect the well?	☐ Yes ☐ No	What chemical(s) did you use?
Did you disinfect the distribution system?	☐ Yes ☐ No	Date:
Did you thoroughly flush the well and distribution system after disinfecting?	☐ Yes ☐ No	Date:
Required Start-up Procedures:	**Check one**	**Comments**
Was any part of the PWS system depressurized (drained) during the closed season?	☐ Yes ☐ No	
Did you complete page 1 of this checklist (the DEQ start-up procedures for seasonal systems)?	☐ Yes ☐ No	
Did you thoroughly flush the well and distribution system?	☐ Yes ☐ No	Date:
Did you submit bacteria sample(s) from the distribution system after waiting at least 72 hours post flushing?	☐ Yes ☐ No	Date:
Were the samples total coliform absent?	☐ Yes ☐ No	

Completing the Seasonal Startup Process:

Now that you have inspected your system and completed these instructions, you are required to submit the RTCR Seasonal System Certification Form (next page). The Certification Form can be emailed or mailed to DEQ via the information on the form.

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Montana Public Water Supply System - Seasonal Start-Up Certification Form

Water System Information:

Water System Name: _____ PWSID: _____

Start Up Procedures Completed:

Each Activity below corresponds with a section from the Montana PWS Seasonal Start Up Requirements and Checklist. Mark "Yes" or "N/A" as applicable for each section of the checklist that was completed. Please complete each requirement before submitting this form to DEQ. Montana DEQ's Public Water Supply Bureau must receive this form on or before the public watersystem is open to the public.

Initial	Yes or N./A.	Actions	Comments
		Completed Self-Inspection	
		Flushed the well(s) and distribution system	
		Performed an integrity check on the whole system	
		Completed any repairs noted during startup	
		Collected total coliform start-up sample from distribution before serving water to the public-Required	
		Received safe / absent total coliform sample results from Lab?	
		Optional: Disinfected the well and distribution system	

Certification:

I hereby certify that I have completed the start-up procedures as outlined in the Montana DEQ Seasonal Start-Up Checklist and Certification Instructions, and that all items have been completed to the best of my knowledge.

Signature: _____ Name (print): _____ Date: _____

Phone: _____ Email: _____ Date open to the public: _____

Submitting to DEQ:

Complete this form and submit to DEQ PWS by email to DEQRTCRLEVEL12@mt.gov or mail to:

Attn: Paighton Vanzant
Montana DEQ
Public Water Supply Bureau
PO BOX 200901, Helena MT 59620

Questions? Please contact Paighton Vanzant at (406) 444 - 2691