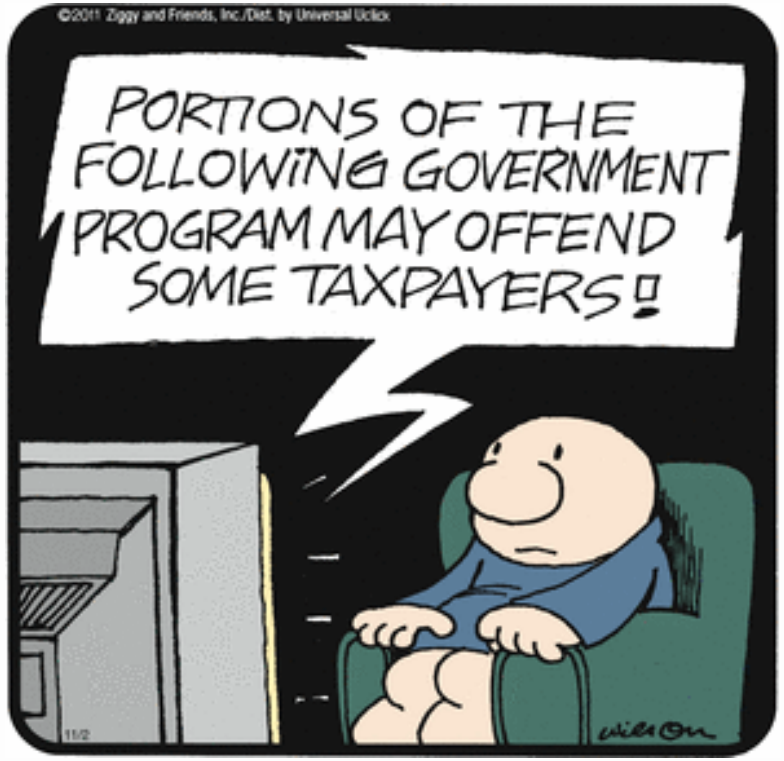
RTCR implementation update



Casey Lyon

Partner training

Bend 4/7/19

PUBLIC HEALTH DIVISION
Environmental Public Health

Oregon Health Authority

Overview of presentation

- Criteria to change coliform monitoring from quarterly to monthly
- Opportunity to collect make-up sample and stay on quarterly monitoring
- Criteria to move from monthly back to quarterly monitoring
- Review of Level 1 investigations
- Level 2 investigations: timeline, field visit, violations

Criteria to increase coliform monitoring to monthly if any of the following criteria are met, OAR 333-061-0036 (6)(b)(C)

- A level 2 coliform investigation is triggered
- Violation for exceeding the maximum contaminant level for *E. coli*
- Violation for not completing and reporting a coliform investigation by due date
- Violation for not correcting sanitary defects found during a coliform investigation by approved due date

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- Two violations for routine coliform monitoring (for not reporting a required sample on time)
- A level 1 coliform investigation is triggered and one violation for routine coliform monitoring

What type of system does this increased monitoring apply to?

- ✓Systems that are on quarterly coliform monitoring
  - ✓TNC or NTNC
  - ✓Groundwater
  - ✓Not seasonal

Process for the schedule change

- Query looks for who meets the criteria listed
- DMCE reviews list to verify accuracy
- Letter generated and made into a PDF
- Schedule changed in SDWIS
- Letter is printed and mailed to system
- PDF is emailed to regulating agency and technical services contact

Change to monthly monitoring letter

You must begin monitoring for coliform bacteria at your water system every month, beginning in November 2017 because the criteria for increased monitoring in OAR 333-061-0036(6)(b)(C) was met.

OAR 333-061-0036(6)(b)(C) specifies that monitoring must be increased if any of the following occur within a 1 year period:

- Violation for exceeding the maximum contaminant level for E. coli;
- Violation for not completing and reporting a coliform investigation by due date;
- Violation for not correcting sanitary defects found during a coliform investigation by approved due date;
- A level 2 coliform investigation is triggered;
- Two violations for routine coliform monitoring (for not collecting a required sample); or
- A level 1 coliform investigation is triggered and one violation for routine coliform monitoring.

The system may have an “opportunity” to stay on quarterly

- OAR 333-061-0036 (6)(b)(A):

“… the Authority may elect to not consider monitoring violations according to paragraph (6)(p)(A) of this rule if …”

  - This “opportunity” will only be an option for systems where the cause is two quarterly monitoring violations.
  - Can only do this (opportunity) one time in a 4 quarter period (rolling year – not calendar year).
  - Involves taking an extra sample, letter explains details.
  - An “opportunity letter” will be sent to the PWS notifying them of this, a copy of the letter will also go to the regulator.

What is the “opportunity” process to stay on quarterly monitoring?

- Violation will be issued on 1st workday after the 10th of each quarter. – it is the systems 2nd violation and starts the opportunity to stay on quarterly monitoring – letter is sent to system

- Take make–up sample by end of current month and report by 10th of next month to stay on quarterly monitoring

- Schedule will change to monthly if this “opportunity” is missed.

Opportunity letter example language

Your water system has missed reporting quarterly sample results twice within the last year. This will cause your coliform monitoring schedule to be increased to once every month unless you do the following:

- Collect the make-up sample before the end of this month and report it by the 10th of next month.
- Collect the normal quarterly sample by the end of the quarter and report it within 10 days of the end of the quarter.

*These samples must also be collected at least one week apart and marked as routine samples.

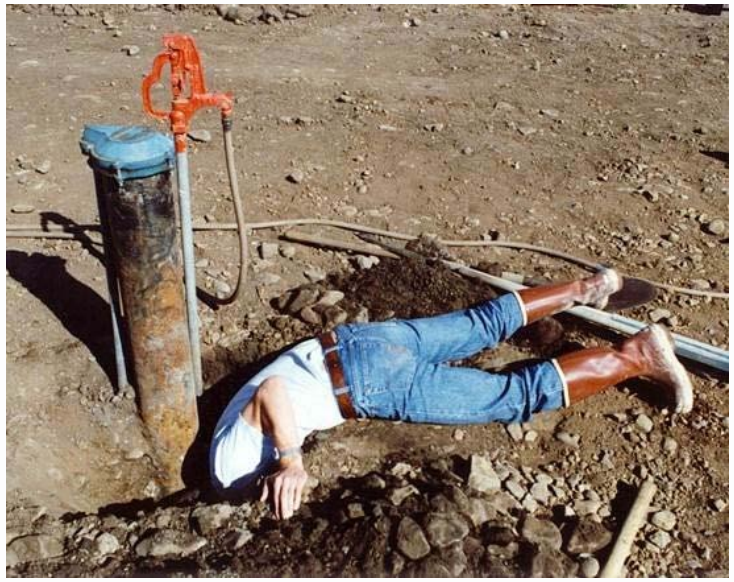
Failure to collect and report both of these samples on time or meeting any of the other criteria in OAR 333-061-0036(6)(b)(C) will result in coliform monitoring being increased to monthly at your water system.

Criteria to change back to quarterly monitoring

OAR 333-061-0036 (6)(b)(D)

In the previous 12 months:

- Site visit for either a Level 2 investigation or Sanitary Survey (or equivalent)
  - No sanitary defects and they have a protected water source
- All required samples collected and reported
- No E. coli MCL violations
- No coliform investigations required
- No coliform investigation violations



New procedure for returning to quarterly monitoring

A site visit could be substituted, at the regulators discretion, with a conversation with the operator and detailed photos of the water system infrastructure showing no sanitary defects.

Procedure describes what a “protected source” is.

Subject:	Coliform – return to quarterly monitoring	Orig Date:	8/8/18
Unit + init:	TS – ks/cl/aw	Revised date:	01/14/19
Purpose & Scope: For Transient systems that were triggered into monthly monitoring, OAR 333-061-0036 (6)(b)(D) specifies criteria to return to quarterly monitoring. This procedure outlines steps to take to allow a system to return to quarterly coliform monitoring.			

Procedure/Process:

1. System requests to return to quarterly.
    a. Or, regulator reviews schedule during survey and notices that they may qualify.
2. Need 12 consecutive months coliform sampling without any monitoring or reporting violations, or coliform investigation triggers.
    a. A TC+ with the correct number of repeats in the correct timeframe that are TC- is ok.
3. Need a site visit within the previous 12 months and the system was found to be free of sanitary defects. If defects were found, they must have been corrected and noted. A site visit could be substituted, at the regulator’s discretion, with a conversation with the operator and detailed photos of water system infrastructure showing no sanitary defects.
4. Protected source: verified through site visit or photos that there are no priority source-related significant deficiencies.
    a. Significant deficiencies that are priority source deficiencies could be a physical pathway to contamination. These are the deficiencies that require correction before granting the reduction back to quarterly. The priority source deficiencies are:
        i. Sanitary seal/casing not watertight
        ii. No screen on existing well vent
        iii. Wellhead not protected from flooding
    b. Non-priority source deficiencies are not considered critical for correction to change the sample schedule. The non-priority source deficiencies are:
        i. Well does not meet setback from hazards
        ii. No raw water sample tap
        iii. No treated sample tap
5. Complete schedule change request form and inform system when their next sample is due.

Level 1 & 2 investigations, are we finding sanitary defects?

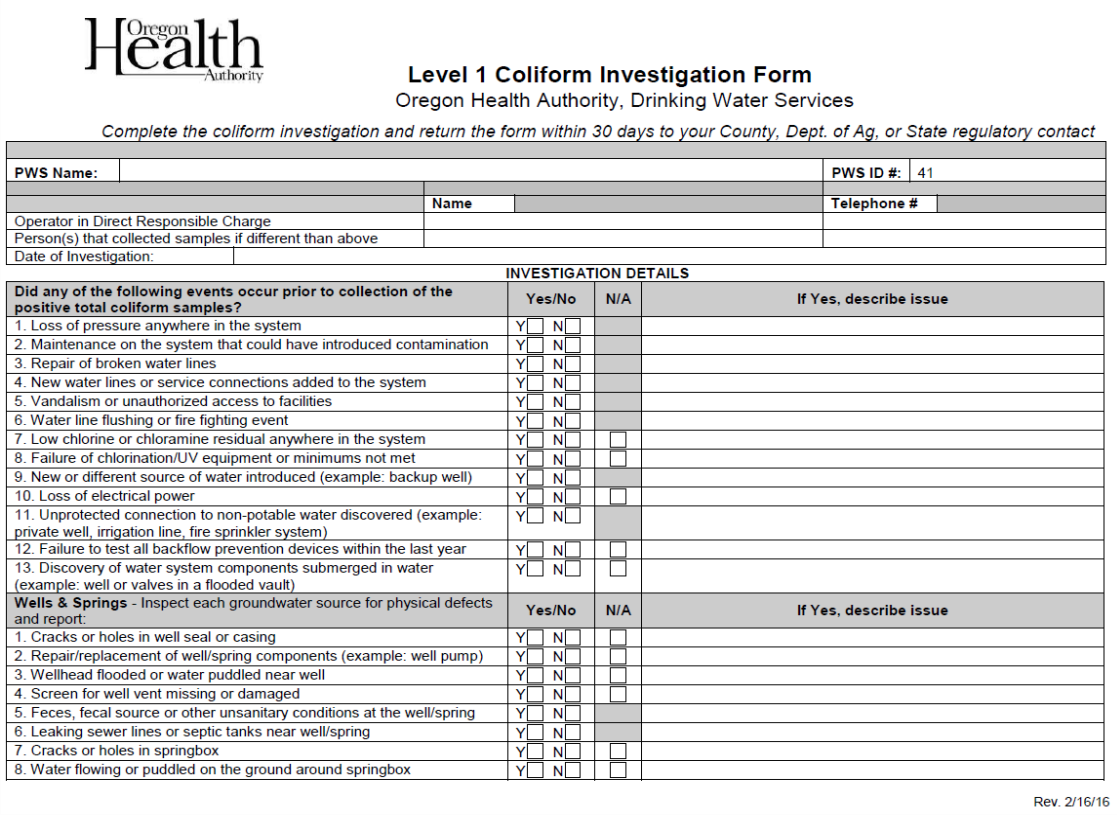
- Rodent access & droppings
- Missing / inadequate screens
- Well house broken into
- Broken distribution pipes
- Chlorinator out of Chlorine
- Broken feed pipe on chlorinator
- Don’t know last time storage tank was cleaned
- Resurrected use of 3 storage tanks

Level 1 Coliform Investigations

- Conducted by the water system staff
- Must be completed within 30 days
- Includes a basic examination of the source water, treatment, distribution system and relevant operational practices
- Covers likely cause, corrective action plan, and schedule for correction.
- Investigation form is available on our website
- Reports will be reviewed to ensure the investigation was adequate and complete
- **Partner agencies need to send in the level 1 investigation form to DWS in order for the PWS to get credit**

Level 1 Coliform Investigation Triggers

- Level 1 investigations are triggered by the following events:
  - More than 1 sample is total coliform positive at systems collecting fewer than 40 samples per month
  - More than 5% of samples are total coliform positive at systems collecting 40 or more samples per month
  - Failure to collect every required repeat sample



Oregon Health Authority

Level 1 Coliform Investigation Form

Oregon Health Authority, Drinking Water Services

Complete the coliform investigation and return the form within 30 days to your County, Dept. of Ag, or State regulatory contact

PWS Name:		**PWS ID #:**	41
	Name	**Telephone #**	
Operator in Direct Responsible Charge			
Person(s) that collected samples if different than above			
Date of Investigation:			

INVESTIGATION DETAILS

Did any of the following events occur prior to collection of the positive total coliform samples?	**Yes/No**	**N/A**	**If Yes, describe issue**
1. Loss of pressure anywhere in the system	Y☐ N☐		
2. Maintenance on the system that could have introduced contamination	Y☐ N☐		
3. Repair of broken water lines	Y☐ N☐		
4. New water lines or service connections added to the system	Y☐ N☐		
5. Vandalism or unauthorized access to facilities	Y☐ N☐		
6. Water line flushing or fire fighting event	Y☐ N☐		
7. Low chlorine or chloramine residual anywhere in the system	Y☐ N☐	☐	
8. Failure of chlorination/UV equipment or minimums not met	Y☐ N☐	☐	
9. New or different source of water introduced (example: backup well)	Y☐ N☐		
10. Loss of electrical power	Y☐ N☐	☐	
11. Unprotected connection to non-potable water discovered (example: private well, irrigation line, fire sprinkler system)	Y☐ N☐		
12. Failure to test all backflow prevention devices within the last year	Y☐ N☐	☐	
13. Discovery of water system components submerged in water (example: well or valves in a flooded vault)	Y☐ N☐	☐	
Wells & Springs - Inspect each groundwater source for physical defects and report:	**Yes/No**	**N/A**	**If Yes, describe issue**
1. Cracks or holes in well seal or casing	Y☐ N☐	☐	
2. Repair/replacement of well/spring components (example: well pump)	Y☐ N☐	☐	
3. Wellhead flooded or water puddled near well	Y☐ N☐	☐	
4. Screen for well vent missing or damaged	Y☐ N☐	☐	
5. Feces, fecal source or other unsanitary conditions at the well/spring	Y☐ N☐		
6. Leaking sewer lines or septic tanks near well/spring	Y☐ N☐		
7. Cracks or holes in springbox	Y☐ N☐	☐	
8. Water flowing or puddled on the ground around springbox	Y☐ N☐	☐	

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Level 2 Coliform Investigations

- Conducted by the water system's regulating agency (DWS, County, or Oregon Dept. of Agriculture)
- A more in-depth examination of the system and its monitoring and operational practices
- Must be completed in 30 days
- **Level 2 investigations are triggered by the following events:**
  - Violation of the MCL for *E. coli*
  - Two Level 1 triggers within a 12 month period

Level 2 coliform investigations

-Very important to fill out summary page accurately with corrective action due dates if applicable.

Level 2 Coliform Investigation Form
Oregon Health Authority, Drinking Water Services

PWS Name:		PWS ID #:	41
	Name	**Telephone #**	
Operator in Direct Responsible Charge (DRC)			
Person that collected samples if different than DRC			
Date of Investigation:	10/17/2016		

INVESTIGATION DETAILS

Groundwater Source Inspect each groundwater source for physical defects and report:	**Well/Spring Name** Source AA	**Well/Spring Name**	**Well/Spring Name**	**Well/Spring Name**	**N/A**	**If Yes, describe issue**
1. Cracks or holes in well seal or casing	Y☐ N☒	Y☐ N☐	Y☐ N☐	Y☐ N☐	☐	
2. Wellhead lacks a watertight seal	Y☐ N☒	Y☐ N☐	Y☐ N☐	Y☐ N☐	☐	
3. Screen for well vent missing or damaged	Y☐ N☒	Y☐ N☐	Y☐ N☐	Y☐ N☐	☐	
4. Wellhead subjected to flooding or standing water near well	Y☐ N☒	Y☐ N☐	Y☐ N☐	Y☐ N☐	☐	
5. Leaking sewer lines or septic tanks near well/spring	Y☐ N☒	Y☐ N☐	Y☐ N☐	Y☐ N☐		
6. Feces, fecal source observed near well/spring	Y☐ N☒	Y☐ N☐	Y☐ N☐	Y☐ N☐		
7. Unsanitary conditions at the well/spring	Y☐ N☒	Y☐ N☐	Y☐ N☐	Y☐ N☐		
8. Contamination during pump repair/replacement or other wellhead/spring repair	Y☐ N☒	Y☐ N☐	Y☐ N☐	Y☐ N☐	☐	
9. Use of an unapproved or untested source	Y☐ N☒	Y☐ N☐	Y☐ N☐	Y☐ N☐		
10. Indication of surface water entering springbox	Y☐ N☐	Y☐ N☐	Y☐ N☐	Y☐ N☐	☒	
11. Cracks or holes in springbox	Y☐ N☐	Y☐ N☐	Y☐ N☐	Y☐ N☐	☒	

Treatment and Disinfection Inspect each treatment plant for physical defects and report:	**Plant Name**	**Plant Name**	**Plant Name**	**Plant Name**	**N/A**	**If Yes, describe issue**
1. Inability to maintain residual throughout the distribution system	Y☐ N☐	Y☐ N☐	Y☐ N☐	Y☐ N☐	☒	
2. Failure of disinfection equipment	Y☐ N☐	Y☐ N☐	Y☐ N☐	Y☐ N☐	☒	
3. Failure to monitor and replace chlorine supply	Y☐ N☐	Y☐ N☐	Y☐ N☐	Y☐ N☐	☒	
4. Improper chlorine residual measurements (method or frequency)	Y☐ N☐	Y☐ N☐	Y☐ N☐	Y☐ N☐	☒	
5. Failure to meet required minimum chlorine residual at the entry point (GW only)	Y☐ N☐	Y☐ N☐	Y☐ N☐	Y☐ N☐	☒	

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Level 2 Coliform Investigation Form
Page 4 of 4

SUMMARY: **Based on the results of the investigation and any other available information, what is believed to be the cause(s) of the *E. coli* positive or multiple total coliform positive sample(s) from the public water system?**

The possible cause for the multiple total coliform positive samples from the public water system could be inadequate disinfection of the water system after the pipeline was reconfigured/repaired in the pumphouse.

CORRECTIVE ACTIONS: **What actions has the water system taken to correct the above mentioned issue(s)?** ***If additional time is needed to correct a deficiency, indicate the date that it will be corrected.***

The water system was provided documents outlining the procedures to shock chorinate their well and the distribution system. The water system did shock chlorinate the system this afternoon (10-17-2026) and would take a special sample to determine if the corrective action took effect.

COLIFORM INVESTIGATIONS: BY THE NUMBERS

	On time	Late	No report
Level 1	399	74	30
Level 2	263	4	28

As of 4/30/19

On time: 79%

Completed: 94%

Repeats turned in late (investigation triggered but no longer needed)	85

COLIFORM INVESTIGATIONS: BY THE NUMBERS

	On time	Late	No completed
Correct defects	9	7	3
Install disinfection	9	9	4

As of 4/30/19

Questions?

Casey Lyon (541) 726-2587 ext. 31
Casey.lyon@state.or.us

Chuck Michael (971) 673-0420
CHARLES.E.MICHAEL@dhsoha.state.or.us

RTCR