
Level 2 Investigation Review Silver Falls 2017

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Drinking Water Services
April 19, 2017



PUBLIC HEALTH DIVISION
Drinking Water Services

Overview of Presentation

1. Level 2 refresher (who, what, when, where, why & how)
2. Review of Level 2 form used
3. System examples
4. Questions/discussion

RTCR

Revised Total Coliform Rule – adopted 4/1/2016

(Enter) DEPARTMENT (ALL CAPS)
(Enter) Division or Office (Mixed Case)

Oregon
Health
Authority

Noun
Verb
Adjective

RTCR

Revised Total Coliform Rule – adopted 4/1/2016

(Enter) DEPARTMENT (ALL CAPS)
(Enter) Division or Office (Mixed Case)

Oregon
Health
Authority

Investigations and Corrective Action

- Because coliform indicates a potential pathway for contamination into the water system, an investigation is required after confirmed total coliform (or *E. coli*).
- Two levels of investigation: Level 1 (conducted by a water system operator) and Level 2 (conducted by a regulator)
- EPA refers to these as “Assessments”
- If sanitary defect(s) are found, they must be corrected to prevent future contamination.
- The cause of coliform may not always be found.

Investigation Scope

- Investigations seek to identify situations that could affect water quality in the distribution system, including:
 - Atypical events (backflow incident, line breaks, etc.)
 - Changes in distribution system maintenance or operation that could have affected water quality
 - Source water changes or changes/interruptions in treatment practices
 - Inadequacies in sample sites, sampling protocol, or sample processing
 - Damage to or inadequacies in system facilities

How do I know if a Level 2 has been triggered? (you are sent an email)

- The following criteria elevate a detection or detections to a Level 2 investigation:
 - E. coli MCL (confirmed with a routine EC+ and TC+ repeat/FC+ repeat or a TC+ routine and FC+ repeat)
 - More than one month of multiple TC+ samples (within a rolling 12 month period)
 - No repeat samples after a TC/FC+ routine sample and a Level 1 had already been done in the rolling 12 month period

(Enter) DEPARTMENT (All Cases)
(Enter) Division or Office (Mixed Case)

Is there any reason where a Level 2 is triggered but does not need to be performed?

- YES!!!!
- If triggered due to no repeat samples collected:
 - If repeat samples had been collected within the 11 days timeframe after the initial positive and turned in late – OR turned in within the 30 day timeframe to complete the Level 2. Then an onsite Level 2 is not needed.

Do all triggered investigations count towards a treatment requirement?

- Not all triggers count!
- The health based triggers (sample results) count, monitoring and reporting trigger (no repeat samples/late) do not get factored in.
- HOWEVER, if you feel differently, please consult with your DWS contact.

(Enter) DEPARTMENT (ALL CAPS)
(Enter) Division or Office (Mixed Case)

What does it look like online?

Compliance and Enforcement Schedules

Schedule Type	Schedule Status	<input type="button" value="Show Schedules"/>
All Schedules <input type="button" value="v"/>	<input checked="" type="checkbox"/> Open <input checked="" type="checkbox"/> Closed	

Type of Action	Date Issued	Due Date	Closed Date
Coliform Investigation	Jan 10, 2017		Jan 24, 2017
LEVEL 2 INVESTIGATION - NO REPEATS		Feb 11, 2017	Jan 24, 2017
Coliform Investigation	Sep 30, 2016		Nov 02, 2016
LEVEL 1 INVESTIGATION - NO REPEATS		Oct 30, 2016	Nov 02, 2016 - Late

For all compliance errors please phone Brad Daniels, DWS Compliance Specialist, at 971-673-0405.

For further information on this public water system, click on the area of interest below:

[System Info](#) :: [Report for Lenders](#) :: [Alerts](#) :: [Violations](#) :: [Compliance & Enforcement](#) :: [Contacts](#) :: [Site Visits](#) :: [Public Notice](#) :: [Plan Review](#)

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.

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

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 – the real question...

- Do I have to do a site visit EVERY time for a system that has had multiple assessments triggered.....
- No you do not.... But let's discuss

(Enter) DEPARTMENT (ALL CAPS)
(Enter) Division or Office (Mixed Case)

On-site discussion points:

- When was the last time you made a site visit?
- Did you thoroughly look at the system?
- How comfortable are you with the water system's operator?

Ultimately the decision is yours – you are the ones that know the water system the best.

How do I document a Level 2 investigation?

- All investigations require follow up. A follow up is documented with the completion of the investigation forms. The forms are then sent in to the compliance email.
- If a Level 2 is decided, by the regulator, to be done over the phone, a Level 2 form still needs to be filled out and submitted. This will then close out the schedule.

(Enter) DEPARTMENT (ALL CAPS)
(Enter) Division or Office (Mixed Case)



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 <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
2. Maintenance on the system that could have introduced contamination	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
3. Repair of broken water lines	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
4. New water lines or service connections added to the system	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
5. Vandalism or unauthorized access to facilities	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
6. Water line flushing or fire fighting event	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
7. Low chlorine or chloramine residual anywhere in the system	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
8. Failure of chlorination/UV equipment or minimums not met	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
9. New or different source of water introduced (example: backup well)	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
10. Loss of electrical power	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
11. Unprotected connection to non-potable water discovered (example: private well, irrigation line, fire sprinkler system)	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
12. Failure to test all backflow prevention devices within the last year	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
13. Discovery of water system components submerged in water (example: well or valves in a flooded vault)	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
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 <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
2. Repair/replacement of well/spring components (example: well pump)	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
3. Wellhead flooded or water puddled near well	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
4. Screen for well vent missing or damaged	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
5. Feces, fecal source or other unsanitary conditions at the well/spring	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
6. Leaking sewer lines or septic tanks near well/spring	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
7. Cracks or holes in springbox	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
8. Water flowing or puddled on the ground around springbox	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	

Rev. 2/16/16



Level 1 Coliform Investigation Form

Page 2 of 2

Storage Tanks - Inspect each storage tank for physical defects and report:	Yes/No	N/A	If Yes, describe issue
1. Vent screens missing or damaged	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
2. Roof access hatch or other openings poorly or not sealed	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
3. Screen or flap valve on overflow pipe outlet missing or damaged	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
4. Tank in poor condition	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
5. Tank has not been cleaned in recent memory	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
6. Presence of contamination in tank (example: dead animals, insects)	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
7. Recent maintenance or work done on the tank	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
Sampling Protocol - Review and report:	Yes/No	N/A	If Yes, describe issue
1. Tap flushed for less than 3 minutes	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
2. Aerator, screen, hose, or other attachment present during sampling	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
3. Leaky or swivel faucet used	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
4. Samples not kept cool during storage/transportation	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
5. Inside of bottle/lid touched or lid set down	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
6. Heavy rainfall or wind at time of sampling	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
7. Sampled at site not on sampling plan or at a previously unused site	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
8. Other sampling problems	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
Other	Yes/No	N/A	If Yes, describe issue
Any other issues/problems/sources of contamination that may have caused the positive coliform result	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	

SUMMARY: Based on the results of your investigation and any other available information, what do you believe to be the cause(s) of the positive total coliform sample(s) from your water system? (Do not leave blank)

CORRECTIVE ACTIONS: What actions have you 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. (Do not leave blank)

CERTIFICATION: I certify that the information submitted in response to the questions above is accurate to the best of my knowledge.

NAME: _____ **TITLE:** _____ **DATE:** _____

Additional comments:

For Agency Use Only: Reviewed by _____ Date Reviewed: _____ ☐ Complete ☐ Needs Revision

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	Well/Spring Name	Well/Spring Name	Well/Spring Name	N/A	If Yes, describe issue
	Source AA					
1. Cracks or holes in well seal or casing	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
2. Wellhead lacks a watertight seal	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
3. Screen for well vent missing or damaged	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
4. Wellhead subjected to flooding or standing water near well	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
5. Leaking sewer lines or septic tanks near well/spring	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>		
6. Feces, fecal source observed near well/spring	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>		
7. Unsanitary conditions at the well/spring	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>		
8. Contamination during pump repair/replacement or other wellhead/spring repair	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	
9. Use of an unapproved or untested source	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>		
10. Indication of surface water entering springbox	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	
11. Cracks or holes in springbox	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	

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 <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Failure of disinfection equipment	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Failure to monitor and replace chlorine supply	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	
4. Improper chlorine residual measurements (method or frequency)	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	
5. Failure to meet required minimum chlorine residual at the entry point (GW only)	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	

Rev. 2/16/16

Level 2 Coliform Investigation Form

Page 2 of 4

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
6. Failure to meet CTs at all times (SW only)	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	
7. Failure to meet turbidity standards (SW only)	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	
8. Failure to meet filtration requirements (SW only)	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	

Storage Tanks Inspect each storage tank for physical defects and report:	Tank Name	Tank Name	Tank Name	Tank Name	N/A	If Yes, describe issue
1. Holes in tank that could allow entry of insects or small animal	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	
2. Roof access hatch or other openings inadequately sealed	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Vent screens missing or damaged	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	
4. Screen or flap valve on overflow pipe outlet missing or damaged	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	
5. Presence of contamination in tank (example: dead animals, insects)	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	
6. Recent maintenance or work done on the tank	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	
7. Improperly cleaned or maintained storage tank	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	
8. Leaks in tank that could be harboring growth	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	
9. Inadequate tank controls resulting in poor turnover	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	
10. Bladder pressure tank waterlogged	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	

Distribution System Inspect the distribution system for physical defects and report:	Yes/No	N/A	If Yes, describe issue
1. Failure to maintain adequate pressure or low pressure event (example: pump failure leading to low pressure)	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
2. Recent main break or repair of broken water lines	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
3. New water lines or service connections added to the system	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
4. Improper construction of new, replaced, or renovated lines or service connections	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
5. Known leaks in the distribution system	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
6. Supervisory control and data acquisition (SCADA) and control issues	Y <input type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	

Cross Connection and Backflow Inspect the system for cross connections and report:	Yes/No	N/A	If Yes, describe issue
1. Unauthorized connections to water mains	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
2. Known recent unprotected backflow incident	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
3. Unprotected cross connection(s) discovered (ex. unprotected connection	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		

Level 2 Coliform Investigation Form

Page 3 of 4

Cross Connection and Backflow Inspect the system for cross connections and report:	Yes/No	N/A	If Yes, describe issue
with a private well)			
4. Failure of installed backflow prevention devices (example: continuous discharge from the relief port on a device)	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	
5. Any water system components submerged in an underground vault	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	
6. Failure to test all backflow prevention devices within the last year	Y <input type="checkbox"/> N <input type="checkbox"/>	<input checked="" type="checkbox"/>	

Sampling Protocol Report any defects in sampling protocol:	Yes/No	N/A	If Yes, describe issue
1. Tap flushed for less than 3 minutes	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		Sample taps not flushed >3 minutes
2. Aerator, screen, hose, or other attachment present during sampling	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	<input type="checkbox"/>	
3. Leaky or swivel faucet used	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
4. Samples not kept cool during storage/transportation	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
5. Inside of bottle/lid touched or lid set down	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		Sampler set lid down
6. Heavy rainfall or wind at time of sampling	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
7. Sampled at site not on coliform sampling plan or previously unused site	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>		No coliform sampling plan
8. Other sampling problems	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		

General Operations Report any defects in general operation of the system:	Yes/No	N/A	If Yes, describe issue
1. Power outages that affected water system facilities during the 30 days prior to the TC+ or EC + findings	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
2. Water line flushing or fire fighting event	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		
3. Inadequate disinfection during and after repairs or new construction (example: pipe repair, well repair, new tank)	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	<input type="checkbox"/>	New pipeline installed and possible inadequate disinfection after repairs
4. Any other issues/problems/sources of contamination that may have caused the positive coliform result (e.g. vandalism; unauthorized access...)	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>		

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/repared 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 chlorinate 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.

Corrective Action Requirements

- Sanitary defects must be described on the investigation form.
- Sanitary defects found during an investigation must be **corrected** and corrective actions described on the investigation form.
- The water system must submit the investigation form to their regulator within **30 days** of the investigation trigger.
- The form must indicate a timetable for any corrective actions not already completed.

System investigation case studies

(Enter) DEPARTMENT (ALL CAPS)
(Enter) Division or Office (Mixed Case)

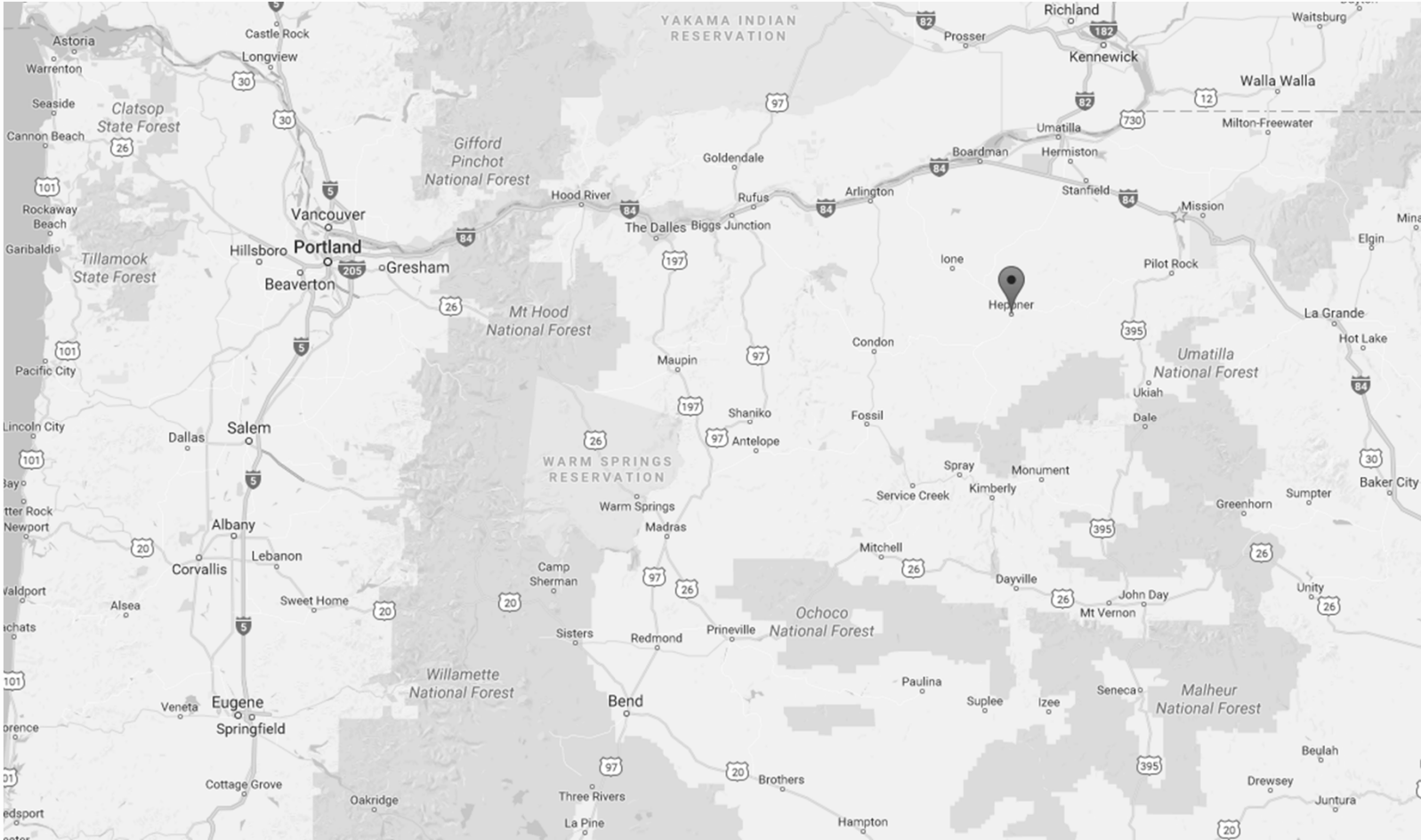
UPS-Hermiston

1 well, 1 PT, one connection

(Enter) DEPARTMENT (ALL CAPS)
(Enter) Division or Office (Mixed Case)

- Distinction of being the first system in the state to trigger a mandatory treatment install.
- System was having a little total coliform issue
 - 2013 - 1 MCL vio
 - 2015 – 5 MCL vio
 - 2016 – 1 MCL and investigations
- Source – single GW well and all triggered samples were total coliform positive.
- Concern had been raised late 2015 due to knowledge of a neighboring well with confirmed contamination and the system will need to start planning.
- UV unit* was approved and installed January 2017

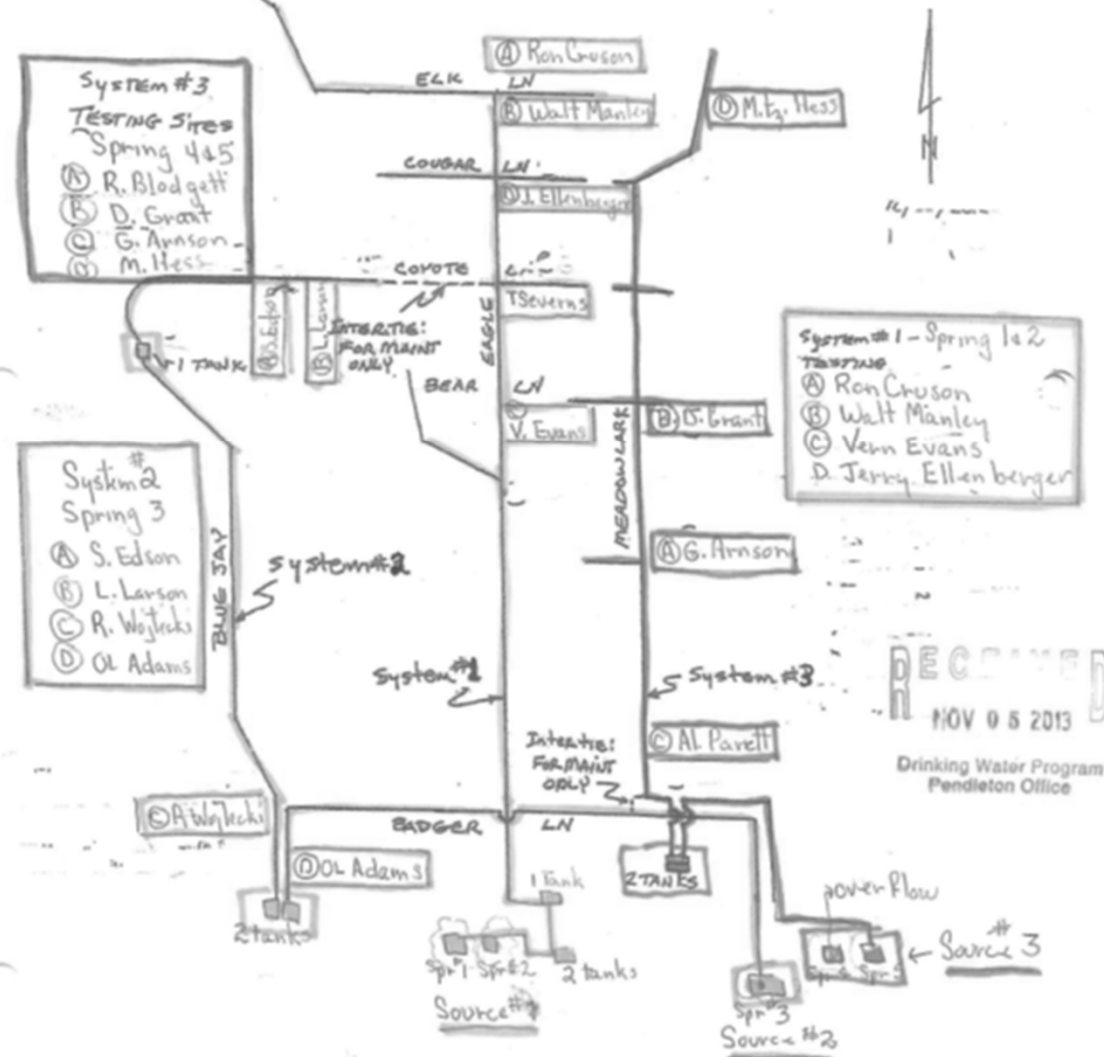
(Enter) DEPARTMENT (ALL CAPS)
(Enter) Division or Office (Mixed Case)



(Enter) DEPARTMENT (ALL CAPS)
(Enter) Division or Office (Mixed Case)

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Spring 1&2 - BLACK MOUNTAIN WATER DISTRICT
 Spring 3 - WATER SOURCE AND DISTRIBUTION
 Spring 4&5 - SYSTEM SCHEMATIC



(Enter) DEPART
 (Enter) Division or Office (Mixed Case)

Current Coliform Summary History

Samples Required

3

Sample Type

RT

Sampling Period Type

MONTH

[Spreadsheet](#)

Number of Samples Reported

Period End Date	Routines Reported	Routine TC+	Routine FC+	Repeats Reported	Repeat TC+	Repeat FC+
Mar 31, 2017	3	0	0	0	0	0
Feb 28, 2017	3	2	0	6	1	0
Jan 31, 2017	3	0	0	0	0	0
Dec 31, 2016	3	0	0	0	0	0
Nov 30, 2016	3	0	0	0	0	0
Oct 31, 2016	3	2	0	6	3	0
Sep 30, 2016	3	0	0	0	0	0
Aug 31, 2016	3	0	0	0	0	0
Jul 31, 2016	3	0	0	0	0	0
Jun 30, 2016	3	0	0	0	0	0
May 31, 2016	3	1	0	3	3	0
Apr 30, 2016	3	0	0	0	0	0
Mar 31, 2016	3	0	0	0	0	0
Feb 29, 2016	3	0	0	0	0	0
Jan 31, 2016	5	0	0	0	0	0
Dec 31, 2015	0	0	0	0	0	0
Dec 31, 2015	5	1	0	3	0	0
Nov 30, 2015	3	1	0	3	0	0
Oct 31, 2015	5	0	0	0	0	0
Sep 30, 2015	3	1	0	3	0	0
Aug 31, 2015	5	1	0	3	0	0
Jul 31, 2015	3	2	1	3	0	0
Jun 30, 2015	3	0	0	0	0	0
May 31, 2015	3	0	0	0	0	0
Apr 30, 2015	3	0	0	0	0	0
Mar 31, 2015	5	0	0	0	0	0
Feb 28, 2015	3	2	0	6	0	0
Jan 31, 2015	5	0	0	0	0	0
Dec 31, 2014	3	1	1	13	6	0
Nov 30, 2014	5	0	0	0	0	0
Oct 31, 2014	5	1	0	3	0	0
Sep 30, 2014	3	1	0	3	0	0
Aug 31, 2014	4	0	0	0	0	0

(Enter) DEPARTMEN
(Enter) Division or Office (Mixed Case)



(Enter) DEPARTMENT (ALL CAPS)
(Enter) Division or Office (Mixed Case)



(Enter) DEPARTMENT (ALL CAPS)
(Enter) Division or Office (Mixed Case)

PWS ID: 00370 ---- BLACK MOUNTAIN WATER DISTRICT

Compliance and Enforcement Schedules

Schedule Type <input type="text" value="All Schedules"/>	Schedule Status <input checked="" type="checkbox"/> Open <input checked="" type="checkbox"/> Closed	<input type="button" value="Show Schedules"/>
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Type of Action	Date Issued	Due Date	Closed Date
Coliform Investigation	Feb 17, 2017		Open
COMPLETE LEVEL 2 INVESTIGATION		Mar 30, 2017	Overdue
INSTALL DISINFECTION		Aug 22, 2017	
Coliform Investigation	Oct 24, 2016		Nov 10, 2016
COMPLETE LEVEL 2 INVESTIGATION		Dec 03, 2016	Nov 10, 2016
Coliform Investigation	May 31, 2016		Jun 03, 2016
COMPLETE LEVEL 1 INVESTIGATION		Jun 30, 2016	Jun 03, 2016

(Enter) DEPARTMENT (ALL CAPS)
 (Enter) Division or Office (Mixed Case)

So – what is next for them?

The circuit rider will be making a site visit today (4/19/17). Will await their report and have to see how we all can proceed.

It is a complicated scenario and am hoping one day to be able to have a success story follow up to show. But for now, it's a wait and see.



Questions?



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Oregon
Health
Authority

