

Subject:	Coliform Investigations	Original Date:	3/1/2016
Unit + initials:	DMCE, TS (GCB, BKD, CEM, JN, KS, MB)	Revised date:	3/7/19
Purpose & Scope: Identify Drinking Water Services' (DWS) process for triggering and tracking coliform investigations and ensuring the correction of sanitary defects.			

Procedure/Process:

Triggers

An alert is generated every time a sample is reported with total coliform or *E. coli* present. The alert creates a record in SDWIS and notifies personnel in the data management unit (DMCE) and regulators about the sample results by email. For every alert, DMCE personnel will review the last 12 months of sampling results reported for the water system and determine if any of the triggers identified below were exceeded:

Level 1 investigation triggers:

- Having two or more total coliform-positive samples in the same month at water systems where fewer than 40 samples per month are collected; or
- Exceeding 5.0% total coliform-positive samples for the month at water systems where 40 or more samples per month are collected; or
- Failing to collect every required repeat sample after any single total coliform-positive sample.

Level 2 investigation triggers:

- Exceeding the MCL for *E. coli*; or
- A second Level 1 trigger within a rolling 12-month period (unless the Authority has determined a likely cause for the total coliform-positive samples that triggered the first Level 1 investigation and established that the water supplier corrected the problem, see process below).

Triggers to install residual maintenance disinfection:

- Having three or more coliform investigations within a rolling 12 month period or four or more coliform investigations with a rolling two year (24 month) period.
- Only coliform investigations triggered by confirmed total coliform-positive or confirmed *E. coli*-positive samples will be considered for this requirement.

If trigger was exceeded, the DMCE personnel will validate:

- 1) A candidate schedule for the investigation, and
- 2) A letter addressed to the water system contact.

Letters for L1 Investigations will include a copy of the investigation form.

Level 1 Process

1. Call the water system contact as soon as possible and tell them about the requirement to conduct a L1 investigation. It can be conducted by the water supplier or representative thereof. Inform the water system contact that they will be receiving the investigation form in the mail, but if they want a copy of the form prior to receiving it in the mail, refer them to the DWS website. Document the discussion with the water system in a contact report (can be the same contact report as the repeat TC+ alert contact report).

2. Inform the water system contact that they have 30 days from the date the investigation was triggered (the day the sample results were reported) to complete the investigation, correct any sanitary defects found, and send the form back to the regulatory agency. For sanitary defects found and NOT fixed with the 30 days, the operator must be on an approved schedule correction. **Highlight that the completed form MUST be returned to the regulatory agency within 30 days.**
3. When the Level 1 form is received, the regulatory agency will review it for the following:
 - **Completeness:** Did the water system contact fill out the form completely? If not, contact them and request the missing information.
 - **Summary Box (required):** The water system contact must indicate what they think the problem is that caused the coliform positive(s). The questions on the form are designed so that checking “yes” is “bad”. Presumably, if they checked something “yes” somewhere on the checklist, they will implicate it as the possible cause in the “Summary” box. They need to write something in the summary box. If everything on the checklist is checked “no”, it is acceptable to indicate that in the “Summary” box (example: “We did not find any sanitary defects. We do not know what they possible cause is”).
 - **Corrective Actions box (required, if applicable):** If they checked “yes” and implicated something as the possible cause in the “Summary” box, they should indicate how they fixed it in the “Corrective Actions” box. Alternatively, they can indicate a future date that it will be fixed (beyond the 30 days they have to complete the Level 1 investigation and turn in the form). The regulatory agency should then determine if the timeframe for correction is reasonable. If not, contact the water system contact to negotiate a mutually agreed upon date for correction.
4. Submit the completed form to DMCE as soon as possible by emailing it to compliance.dw@state.or.us . If all defects have been corrected, DMCE will enter a completion date into SDWIS. If any defects have NOT been corrected, a due date for correction will be entered.
5. DMCE will send a reminder email to regulators one week prior to the due date for a sanitary defect that was not corrected at the time of the investigation or prior to the date of the reminder email. Another email will be sent one month after the due date for any sanitary defects that remain uncorrected, reminding the regulator that the defect was not corrected.
6. When corrections are made after the form has been submitted, inform DMCE by sending email to compliance.dw@state.or.us to let them know. They will then close the schedule.
7. Inform DMCE at compliance.dw@state.or.us and submit a contact report if defects identified during the investigation were not corrected according to the approved timeline.

Level 2 Process:

1. Call the water system contact as soon as possible and tell them about the requirement for a Level 2 investigation. Level 2s must be conducted by the regulatory agency (State, County, or Dept. of Ag.). You will need to set up an appointment to meet on-site. If the presence of coliforms have a known cause with future date of correction or a recent site visit has been conducted, the investigation may be done over the phone with operator. Regardless of where the investigation was conducted, the Level 2 investigation form must be completed within 30 days from the date the investigation was triggered, so arrange the site visit as soon as possible. Document the discussion with the water system contact in a contact report (can be combined with the alert follow up).
2. Fill out the Level 2 form and note any sanitary defects observed by checking them “yes” and describing the situation or issue in the space provided.
3. For any items checked “yes”, summarize what you think the cause might be in the “Summary” box. It is acceptable to indicate that a cause is not known if everything is checked “no” on the form.

4. For those sanitary defects checked “yes” that need to be corrected, indicate how and when it was corrected or how and when it will be corrected (if it will take more than 30 days) in the “Corrective Actions” box.
5. Leave a copy of the form with the water supplier if possible, otherwise send them copy when you return to the office. **Make sure the water supplier understands the date by which any the sanitary defects must be corrected.**
6. Submit the completed form to DMCE as soon as possible by emailing it to compliance.dw@state.or.us. If all defects have been corrected, DMCE personnel will enter a completion date for the investigation into SDWIS. If any defects remain NOT corrected, a due date for correction of those defects will be entered. Due dates are always 30 days from when the investigation was triggered unless a different due date is provided.
7. DMCE will send a reminder email to the regulator 1 week prior to any due date that is not completed. Another email will be sent out 1 month after any unresolved due date reminding the regulating agency that the issue(s) needs resolved.
8. When corrections are made after the form has been submitted, inform DMCE by sending email to compliance.dw@state.or.us to let them know. They will then close the schedule.

Process for allowing a Level 1 investigation instead of a Level 2:

1. 0078(2)(b)(B) states that a Level 2 investigation is triggered if a second Level 1 is triggered within a rolling 12-month period, unless the Authority has determined a likely cause for the total coliform-positive samples that triggered the first Level 1 investigation and established that the water supplier corrected the problem.
2. If a Level 1 investigation was previously triggered, a cause identified on the Level 1 investigation form was approved by the regulating agency, and the regulating agency has verified that the problem was corrected, a Level 1 investigation may be conducted in lieu of a Level 2 investigation. The rationale is that a Level 2 investigation is meant to be a more in-depth investigation of a situation without a known resolution, which is not necessary in this case as the coliform seems to be caused by a new situation.
3. When considering a Level 1 investigation, the regulating agency can request that the water supplier provide special sample results not submitted for compliance purposes or other pertinent data to verify the initial coliform problem was corrected and the existing coliform issue are unrelated events.
4. A written request should be forwarded to the state technical services person for review and to discuss with program manager(s).
5. If approved, the state regulator needs to send a request to DMCE to update the water system’s compliance & enforcement page to change the triggered Level 2 investigation to a Level 1 investigation.
6. The regulating agency informs the water system of Level 1 investigation in lieu of a Level 2 investigation and the required 30-day timeline to submit investigation findings and corrective actions.
7. Include a copy of the investigation request and decision in the water system’s file.