



Massachusetts Department of Environmental Protection

RTCR-2

Bureau of Water Resources – Drinking Water Program

Coliform Bacteria Level 2 Assessment Form

PWS ID#:		PWS Name:		City/Town:	
System Class: <input type="checkbox"/> COM <input type="checkbox"/> NTNC <input type="checkbox"/> TNC					
Lead Assessor:				Affiliation:	
Other Participants in the Assessment:					
Person(s) representing PWS:				Phone:	
MassDEP Personnel Consulted for Assessment:					
Compliance Period: Month		Year		Date Assessment Completed:	
Level 2 Trigger	<input type="checkbox"/> <i>E. coli</i> MCL violation				
	<input type="checkbox"/> 2 nd Level 1 trigger in 12 months			Date of last Level 1 trigger:	
Complete for All Positive Samples (list in chronological order)		Location ID/Name	Date Collected	<i>E. coli</i> Present?	
	1.			<input type="checkbox"/> <i>E. coli</i>	
	2.			<input type="checkbox"/> <i>E. coli</i>	
	3.			<input type="checkbox"/> <i>E. coli</i>	
	4.			<input type="checkbox"/> <i>E. coli</i>	
	5.			<input type="checkbox"/> <i>E. coli</i>	
	6.			<input type="checkbox"/> <i>E. coli</i>	
	7.			<input type="checkbox"/> <i>E. coli</i>	
	8.			<input type="checkbox"/> <i>E. coli</i>	
	9.			<input type="checkbox"/> <i>E. coli</i>	
10.			<input type="checkbox"/> <i>E. coli</i>		
Trigger Date?	<i>Refer to 'RTCR-2 Instructions; Instructions for Level 2 Assessment Form' for guidance on how to determine trigger date. Assessment form is due to MassDEP no later than 30 days from the trigger date.</i>				

Check all sections completed and provide number of individual assessments within each category. Sections in BOLD are required for all PWSs:

- 1.0 Sample Site Evaluation _____
- 2.0 Sample protocol followed and reviewed.
- 3.0 Operational, Environmental, or Security Events
- 4.0 Distribution System _____
- 5.0 Atmospheric Storage Facilities _____
- 6.0 Hydropneumatic Storage Tanks _____
- 7.0 Treatment Process _____
- 8.0 Source – Well _____
- 9.0 Source - Surface Water Supply _____
- 10.0 Source – Spring _____
- 11.0 Source – Purchased _____
- 12.0 Water Quality**
- 13.0 Other Issues Identified
- 14.0 Summary of Incident**



1.0 Sample Site Evaluation Complete one form for each positive coliform sample location (routine or repeat)

Identify sample site location:

Location Code:

E.coli positive? Yes No

Chlorine Residual? mg/L Free Total Combined (at the time of collection) Not measured No chlorination

Assessment Elements

For any shaded box checked, it should be considered an issue and a description must be included.

Issue and/or Description

* If any element has not been reviewed, you must include an explanation.

Yes No Not Reviewed*

Table with 5 columns: Assessment Element, Issue and/or Description, Yes, No, Not Reviewed*. Rows 1.1-1.11 cover various site conditions like regular use, plumbing, pressure, and backflow prevention.

List all sample site corrective actions (including date). Include assessment element number.

Empty box for listing corrective actions.



2.0 Sample protocol followed and reviewed
If more than one person collecting samples, use multiple tables

Person who collected samples: Location Code(s)/Date(s):

For more guidance of proper sampling protocol, refer to the New England States' Drinking Water Sample Collection and Preservation Guidance Manual (pages 36-37) found at:
http://www.epa.gov/sites/production/files/2015-06/documents/NE-States-Sample-Collection-Manual.pdf

Table with 5 columns: Assessment Elements, Issue and/or Description, Yes, No, Not Reviewed*. Rows 2.1-2.9 contain various sampling protocol questions with checkboxes.

List all sample protocol corrective actions (including date). Include assessment element number.



3.0 Operational, Environmental, or Security Events				
<i>Have any of the following occurred at relevant facilities prior to the collection of TC samples?</i>				
Assessment Elements For any shaded box checked, it should be considered an issue and a description must be included.	Issue and/or Description *If any element has not been reviewed, you must include an explanation.			
		Yes	No	Not Reviewed*
3.1 Were there any operation and maintenance activities that could have introduced total coliform/ <i>E.coli</i> ? (e.g. pump maintenance). If yes, was appropriate disinfection performed?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2 Has there been vandalism and/or unauthorized access to facilities? IMMEDIATELY contact Mass State Police and MassDEP		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.3 Have there been any additional/special/voluntary samples collected (including source samples) which were TC+?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4 What is your normal disinfection range?				<input type="checkbox"/>
3.5 Have there been any distribution sites with lower than normal chlorine residual?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.6 Were disinfectant residuals in the distribution system lower than approved levels (0.1 mg/L if not approved level)?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.7 Have any other measured water quality parameters been out of normal ranges?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.8 Has there been a past history of TC+ or <i>E. coli</i> in distribution system (especially in the last 24 months)?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.9 Have there been any reports of community illness suspected of being waterborne (e.g., does the community public health official indicate that an outbreak has occurred.)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.10 Has there been heavy rainfall / flooding / rapid snowmelt?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.11 Have there been changes in available source water (e.g., significant drop in water table, well levels, reservoir capacity, beaver activity, turnover)?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.12 Have there been extremes in heat or cold?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.13 Have there been any interruptions to electrical power?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.14 Have any new sources or inactive/seasonal/emergency sources recently been introduced into the system (including bulk water or interconnections)?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.15 Is there evidence of any potential sources of contamination (i.e. main breaks, low pressure, high turbidity, loss of disinfection)?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



3.16 If it is a seasonal system, were there any problems during the most recent start-up procedure?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.17 Other environmental, operational, or security events?				
List all corrective actions taken (including date). Include assessment element number.				



4.0 Distribution System <i>If the PWS has multiple distribution systems, submit one sheet per system.</i>					
Identify Distribution System (if multiple):					
Assessment Elements For any <u>shaded box</u> checked, it should be considered an issue and a description must be included.	Issue and/or Description *If any element has not been reviewed, you must include an explanation.				
		Yes	No	Not Reviewed*	
4.1 Is there evidence that the system experienced low or negative pressure in the distribution system prior to sampling? If yes, describe event and when it occurred.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.2 Have there been any water main breaks, repairs, or additions since the last clean sampling event? If yes, when, and what was the repair or addition?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.3 Has there been: a recent fire fighting event, sheared hydrant, construction, etc.?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.4 Are there previously identified unprotected cross connections in the distribution system? If yes, list them and identify if any of them are high hazard?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.5 Are there any unsanitary conditions in the pump station(s)?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.6 Are fire hydrants and blow-offs maintained without leaks?		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.7 Are any fire hydrant/blow-offs located in an area with a high water table or in pits?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.8 Are critical components of the distribution system secured to prevent unauthorized access (such as: pump stations, vaults)?		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4.9 Has there been any significant change in flow direction or demand?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.10 When was the last flushing event? Was it unidirectional? Was the system chlorinating during flushing?				<input type="checkbox"/>	
4.11 Is there any evidence of intentional contamination in the distribution system? <u>IMMEDIATELY Contact MA State Police and MassDEP</u>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.12 Are there pipe materials, ages, or construction issues that might contribute to TC detections?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.13 Are there dead ends or low-flow areas that might contribute to TC issues?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4.14 Other comments on the distribution system.					
List all distribution corrective actions taken (including date). Include assessment element number.					



5.0 Atmospheric Storage Tanks Complete one form for each atmospheric storage tank.

Storage Tank Name:

Date of last complete storage tank inspection. _____ Interior Exterior Cleaned

List any unaddressed recommendations or noted deficiencies from that inspection:

As part of this Level 2 Assessment, identify what was evaluated for this storage tank:
 Exterior (ground level) Top Interior Other

Table with 5 columns: Assessment Elements, Issue and/or Description, Yes, No, Not Reviewed*. Rows 5.1-5.14 contain inspection questions and checkboxes.



5.15 Where is the sample tap located? If it is a location representative of the tank, how far away is it from the tank?				<input type="checkbox"/>
5.16 Was the sample collected when the water was exiting the tank? Does the PWS have procedures to ensure that samples are collected when the tank is emptying?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.17 Other comments on the storage tank?				
List all storage tank corrective actions taken (including date). Include assessment element number.				



6.0 **Hydropneumatic and Pressure Storage Tanks** Complete one form for each tank. One form may be completed for multiple hydropneumatic storage tanks in the same location.

Source Name/Location:

Assessment Elements For any shaded box checked, it should be considered an issue and a description must be included.	Issue and/or Description *If any element has not been reviewed, you must include an explanation.			
		Yes	No	Not Reviewed*
6.1 Is the facility secured to prevent unauthorized access?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.2 Is there any evidence of intentional contamination at the storage tank? IMMEDIATELY Contact MA State Police and MassDEP		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.3 Were there any observed leaks?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.4 Was there any observed physical deterioration of the tank? If yes, could the physical condition of the tank be a potential source of contamination?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.5 Is the pressure tank maintaining an appropriate minimum pressure (per manufacturer's specifications)?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.6 Has there been any recent tank maintenance (i.e. painting/coating)? If yes, when? Was disinfection performed?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.7 Is there evidence of the tank being waterlogged?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.8 Were samples representative of the water from this tank collected? If so, what were the results?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.9 What was the measured chlorine residual (total/free) of the water exiting the storage tank on the date of the assessment?				<input type="checkbox"/>
6.10 Other comments on the storage tank?				

List all hydropneumatic tank corrective actions taken (including date). Include assessment element number.



7.0 Treatment Process If applicable. PWS with multiple treatment plants may choose to complete multiple sheets.

Briefly describe the treatment process(es) at the PWS:

Table with 5 columns: Assessment Elements, Issue and/or Description, Yes, No, Not Reviewed*. Rows 7.1-7.15 cover various treatment process checks like interruptions, device operation, chemical expiration, sanitary conditions, equipment repair, process changes, chlorine residual, phosphate levels, test kit calibration, turbidity, CT requirements, flow rates, and sediment filter changes.

List all treatment corrective actions taken (including date). Include assessment element number.

Blank space for listing corrective actions.



8.0 Source – Well <i>Use one sheet per active groundwater source</i>					
Source Name:				Source ID:	
Assessment Elements For any shaded box checked, it should be considered an issue and a description must be included.	Issue and/or Description *If any element has not been reviewed, you must include an explanation.				
		Yes	No	Not Reviewed*	
8.1	Any unsanitary conditions observed in or around the well (insect or animal activity)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.2	Are there any potential cross connections or interconnections impacting the source?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.3	Where is the raw water sample tap located in relation to the well? Is it prior to storage, treatment, and all other system components (including check valves)?			<input type="checkbox"/>	
8.4	Has sampling of the raw water indicated total coliform in the well? If yes, answer the additional questions below.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.5	Has there been a change in the pumping conditions of the well (volume or rate)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.6	Is the well cap properly sealed and water tight? Are there any observable failures in the cap, conduit, or well casing?	<input type="checkbox"/>		<input type="checkbox"/>	
8.7	Is the well cap vented and is the vent screened?	<input type="checkbox"/>		<input type="checkbox"/>	
8.8	Do the vent and any discharges terminate in an approved air gap?	<input type="checkbox"/>		<input type="checkbox"/>	
8.9	How far does the casing extend above grade?			<input type="checkbox"/>	
8.10	Was there evidence of standing water or flooding having occurred near the wellhead?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.11	Is the ground properly graded to shed water away from the wellhead?	<input type="checkbox"/>		<input type="checkbox"/>	
8.12	Is the wellhead secured to prevent unauthorized access?	<input type="checkbox"/>		<input type="checkbox"/>	
8.13	Have there been any activities or land uses in the Zone I that may have contributed to positive bacteria samples?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.14	Is the well in a pit? If yes, is the pit gravity drained, or is there a sump? If it is an automated pump, is it functional?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.15	If the well is a flowing artesian well, is the discharge directed downgradient from the wellhead?	<input type="checkbox"/>		<input type="checkbox"/>	
8.16	Is there an abandoned well nearby that may be impacting this well?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
8.17	Was the line pressure-tested to determine if there was a failure in the service line or pitless adapter?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	



8.18 Has the well construction been evaluated (i.e. by camera in the well)?		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.19 Other comments on the well.				

List all well corrective actions taken (including date). Include assessment element number.



9.0 Source - Surface Water Supply <i>Use one sheet per active source</i>					
Source Name:			Source ID:		
Assessment Elements For any <u>shaded box</u> checked, it should be considered an issue and a description must be included.	Issue and/or Description *If any element has not been reviewed, you must include an explanation.				
		Yes	No	Not Reviewed*	
9.1	Have there been any activities or land uses in the Zone A that may have contributed to positive bacteria samples (i.e. fertilizer applications, discharges, or stormwater overflow)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9.2	Have there been any algal blooms?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9.3	Is the intake screened?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
9.4	Has the intake screen been cleaned and maintained within the last year?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
9.5	Any other changes in source water quality that might affect the treatment process or distribution water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
9.6	Other source water comments				
List all surface water source corrective actions taken (including date). Include assessment element number.					



10.0 Source – Spring <i>Use one sheet per active source</i>					
Source Name:				Source ID#:	
Assessment Elements For any <u>shaded box</u> checked, it should be considered an issue and a description must be included.		Issue and/or Description *If any element has not been reviewed, you must include an explanation.			
				Yes	No
				Not Reviewed*	
10.1	Are there any unsanitary conditions in the spring or the surrounding area?			<input type="checkbox"/>	<input type="checkbox"/>
10.2	Is the construction of the spring's water collection and storage system adequate?			<input type="checkbox"/>	<input type="checkbox"/>
10.3	Is the spring secured to prevent unauthorized access?			<input type="checkbox"/>	<input type="checkbox"/>
10.4	Other comments on the spring system.				
List all spring corrective actions taken (including date). Include assessment element number.					



11.0 Source – Purchased <i>Use one sheet per active source</i>						
Location of Interconnection:			Source ID#:			
Wholesale PWS:						
Assessment Elements For any <u>shaded box</u> checked, it should be considered an issue and a description must be included.		Issue and/or Description *If any element has not been reviewed, you must include an explanation.		Yes	No	Not Reviewed*
11.1	Have discussions with the wholesaling system revealed any issues that might have contributed to bacteriological contamination?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.2	Has sampling of the interconnection indicated total coliform in the water being supplied from the wholesaling system?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.3	Is there an issue with incompatible disinfection or treatment chemicals between the wholesaler and purchasing system?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.4	Is the sample collection location at the interconnection? If not, is it collected from a “representative” location further downstream?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.5	Has the direction of flow changed through the interconnection?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.6	Is there evidence of flooding in the meter vault?			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11.7	Other comments on the purchased source?					
List all purchased source corrective actions taken (including date). Include assessment element number.						



12.0 Water Quality Review:

Indicate what additional water quality data was reviewed or collected as part of this assessment (attach analytical results for additional sampling collected as part of the assessment).

- Chlorine residual
- Turbidity
- Coliform bacteria
- Other:
- Other:
- Heterotrophic Plate Count
- pH
- Customer complaint logs

Discuss any relevant findings or issues identified

13.0 Additional Comments or Issues Identified: *Complete if necessary*

14.0 Summary of Incident leading to/resulting from this Level 2 trigger:

Include the date that a clean round of samples was ultimately collected
(if collected prior to assessment submittal).



Corrective Actions

Corrective Action Summary

List all corrective actions performed prior to submitting this assessment, including any interim corrective actions directed by MassDEP.

Corrective Action Performed:	Date Completed:

Corrective Action Schedule

List all **PLANNED** corrective actions to address sanitary defects identified during this assessment with **proposed completion dates**. Note that once this schedule has been approved by MassDEP, failure to meet this schedule constitutes a Treatment Technique violation which would require public notification.

Planned Corrective Action:	Planned Completion Date:

Statement of No Sanitary Defects Found

No sanitary defects were identified during the course of this assessment



Certification:

I certify under penalty of law that I am the person authorized to fill out this form, and the information contained herein is true, accurate and complete to the best of my knowledge and belief.

INDIVIDUAL WHO HAS BEEN AUTHORIZED BY MASSDEP TO PERFORM THIS LEVEL 2 ASSESSMENT (LEAD ASSESSOR)

Print Name: _____ Title: _____

Signature: _____ Date: _____

Email: _____ Phone #: _____

PWS OWNER OR PWS RESPONSIBLE PARTY (MUST ALSO COMPLETE THE FOLLOWING CERTIFICATION IF THIS ASSESSMENT INCLUDES A CORRECTIVE ACTION SCHEDULE):

Print Name: _____ Title: _____

Signature: _____ Date: _____

Email: _____ Phone #: _____

MassDEP Review *To be completed by MassDEP.*

	Yes	No	Comments
Has assessment been successfully completed?	<input type="checkbox"/>	<input type="checkbox"/>	
Likely reason for bacteriological occurrence has been found.	<input type="checkbox"/>	<input type="checkbox"/>	
PWS has other open violations or deficiencies that may have contributed to this incident.	<input type="checkbox"/>	<input type="checkbox"/>	
PWS has corrected the problems.	<input type="checkbox"/>	<input type="checkbox"/>	

Additional Comments: _____

Assessment is deemed Acceptable Deficient

Corrective Action Plan Approved Denied Approved with changes (attached)

Name of MassDEP reviewer: _____ Date: _____

WQTS data entry complete Approval/deficiency notice sent: