

#### Massachusetts Department of Environmental Protection Bureau of Water Resources – Drinking Water Program Coliform Bacteria Level 2 Assessment Form

**RTCR-2** 

					o / <del>-</del>	
PWS ID#: PWS Name: City/Town:						
System Class: COM NTNC TNC						
Lead Assessor:					Affiliation:	
Other Participants	s in th	e Assessment:				
Person(s) represe	enting	PWS:			Phone:	
MassDEP Persor	nnel C	onsulted for As	sessment:			
Compliance Perio	od: Mo	onth Y	'ear	Date Asse	essment Complete	d:
		E. <i>coli</i> MCL viola	ation			
Level 2 Trigger		2 <sup>nd</sup> Level 1 trigg	er in 12 months	Date of la	st Level 1 trigger:	
Complete for		Location ID/N	lame		Date Collected	<i>E. coli</i> Present?
All Positive Samples (list in	1.					🗌 E. coli
chronological	2.					🗌 E. coli
order)	3.					🗌 E. coli
	4.					🗌 E. coli
	5.					🗌 E. coli
	6.					🗌 E. coli
	7.					🗌 E. coli
	8.					🗌 E. coli
	9.					🗌 E. coli
	10.					🗌 E. coli
Trigger Date?       Refer to 'RTCR-2 Instructions; Instructions for Level 2 Assessminis due to MassDEP no later than 30 days from the trigger date.				ssessment form		

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

1.0	Sample Site Evaluation Complete	e one fo	rm for each positiv	re colifori	m sample i	location (	routine	or repeat)
	Identify sample site location: Locatio					ation Co	ode:	
	E.coli positive?    Yes    No		e Residual? me of collection)	- •	☐ Free lot measu	Total		Combined prination
-	Assessment Elements		Issue and/or	<sup>r</sup> Descrip	otion			
	For any <u>shaded box</u> checked, it sho considered an issue and a description must be included.		* If any elemer reviewed, you i explai			Yes	No	Not Reviewed*
1.1	What is the regular use of the sampl (janitor sink, hand washing, dedicate sample station, laundry sink, etc.)							
1.2	Describe the location and condition (physical and sanitary) of the tap.							
1.3	Were there any recent plumbing bre changes, or construction in vicinity of sample site? If yes, describe.							
1.4	Is the sample location in a pit or a valid state of the sample location in a pit or a valid state of the sample location in a pit of the sample location is a pit of the sample location in a pit of the sample location is a pit of the sample location in a							
1.5	Were there any low pressure events changes in water pressure in the pre plumbing? If yes, when?							
1.7	Are there any identified cross conne in the premises plumbing? Describe present.							
1.8	Were all backflow prevention device the sample location operational, maintained, and tested according to required schedule?							
1.9	Are there any treatment devices (po entry and/or point of use) in the prer of the sample site? If yes, describe.	nises						
1.10	Does this location have a history of positive TC samples?							
1.11	Other comments on sample site?							
	List all sample site corrective acti	ions (in	cluding date). In	clude as	sessmen	t elemer	nt num	ber.



2.0	Sample protocol followed and reviewe If more than one person collecting sample		es			
	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: <a href="http://www.epa.gov/sites/production/files/2015-06/documents/NE-States-Sample-Collection-Manual.pdf">http://www.epa.gov/sites/production/files/2015-06/documents/NE-States-Sample-Collection-Manual.pdf</a>						
	Assessment Elements	Issue and/or	Description			
	For any <u>shaded box</u> checked, it should be considered an issue and a description must be included.	reviewed, you r	nt has not been must include an nation.	Yes	No	Not Reviewed*
2.1	Were samples collected according to the approved Coliform Sampling Plan?					
2.2	Was the tap flushed prior to sampling?					
2.3	Was the tap properly disinfected prior to sample collection? (not flaming)					
2.4	Were there any suspected issues with the sample containers?					
2.5	Was appropriate preservative used?					
2.6	Was the aerator removed from the tap?					
2.7	Were proper storage procedures used? (temperature, kept on ice during transport to lab)					
2.8	Was chain of custody properly completed and accurate?					
2.9	Other comments on sample collection procedures.					
	List all sample protocol corrective act	ions (including dat	e). Include assessi	ment el	ement	number.

3.0	Operational, Environmental, or Security Have any of the following occurred at releva		C sam	ples?	
	Assessment Elements	Issue and/or Description			
	For any <u>shaded box</u> checked, it should be considered an issue and a description must be included.	*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?				
3.2	Has there been vandalism and/or unauthorized access to facilities? IMMEDIATELY contact Mass State Police and MassDEP				
3.3	Have there been any additional/special/ voluntary samples collected (including source samples) which were TC+?				
3.4	What is your normal disinfection range?				
3.5	Have there been any distribution sites with lower than normal chlorine residual?				
3.6	Were disinfectant residuals in the distribution system lower than approved levels (0.1 mg/L if not approved level)?				
3.7	Have any other measured water quality parameters been out of normal ranges?				
3.8	Has there been a past history of TC+ or <i>E. coli</i> in distribution system (especially in the last 24 months)?				
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.)				
3.10	Has there been heavy rainfall / flooding / rapid snowmelt?				
3.11	Have there been changes in available source water (e.g., significant drop in water table, well levels, reservoir capacity, beaver activity, turnover)?				
3.12	Have there been extremes in heat or cold?				
	Have there been any interruptions to electrical power?				
3.14	Have any new sources or inactive/ seasonal/emergency sources recently been introduced into the system (including bulk water or interconnections)?				
3.15	Is there evidence of any potential sources of contamination (i.e. main breaks, low pressure, high turbidity, loss of disinfection)?				

Massachusetts Department of Environmental Protection			RTCR-2				
<b>3.16</b> If it is a seasonal system, were there any problems during the most recent start-up procedure?							
<b>3.17</b> Other environmental, operational, or security events?							
List all corrective actions taken (including date). Include assessme	List all corrective actions taken (including date). Include assessment element number.						

4.0	Distribution System If the PWS has mu	Itiple distribution systems, submit one	sheet pe	er syste	em.
	Identify Distribution System (if multiple):				
	Assessment Elements	Issue and/or Description			
	For any <u>shaded box</u> checked, it should be considered an issue and a description must be included.	*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.				
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?				
4.3	Has there been: a recent fire fighting event, sheared hydrant, construction, etc.?				
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?				
4.5	Are there any unsanitary conditions in the pump station(s)?				
4.6	Are fire hydrants and blow-offs maintained without leaks?				
4.7	Are any fire hydrant/blow-offs located in an area with a high water table or in pits?				
4.8	Are critical components of the distribution system secured to prevent unauthorized access (such as: pump stations, vaults)?				
4.9	Has there been any significant change in flow direction or demand?				
	When was the last flushing event? Was it unidirectional? Was the system chlorinating during flushing?				
4.11	Is there any evidence of intentional contamination in the distribution system? IMMEDIATELY Contact MA State Police and MassDEP				
4.12	Are there pipe materials, ages, or construction issues that might contribute to TC detections?				
	Are there dead ends or low-flow areas that might contribute to TC issues?				
4.14	Other comments on the distribution system.				
	List all distribution corrective actions tak	en (including date). Include assess	ment el	ement	number.

5.0	<b>Atmospheric Storage Tanks</b> Complete one form for each atmospheric storage tank.				
	Storage Tank Name:				
	Date of last complete storage tank inspection	n Interior DExterior	Cle	aned	
	List any unaddressed recommendations or	noted deficiencies from that inspection:			
	As part of this Level 2 Assessment, identify Exterior (ground level) Top	what was evaluated for this storage tar Interior 🗌 Other	ık:		
	Assessment Elements	Issue and/or Description			
	For any <u>shaded box</u> checked, it should be considered an issue and a description must	*If any element has not been reviewed, you must include an	Yes	No	Not Reviewed*
	be included.	explanation.			Revieweu
5.1	Were any concerns or deficiencies noted in the monthly (last 12 months) or annual tank inspection report? If yes, have they been addressed?				
5.2	Is the facility secured to prevent unauthorized access?				
5.4	Is there any evidence of intentional contamination and/or unauthorized access at the storage tank? <u>IMMEDIATELY</u> <u>Contact MA State Police and MassDEP</u>				
5.5	Does the drain/overflow line terminate at a minimum of 12" air gap?				
5.6	Are the overflow and vents properly screened (24-mesh non-corrodible)?				
5.7	Is the vent turned down and does it maintain an approved air gap at the termination point?				
5.8	Were there any observed leaks?				
5.9	Are there any unsealed openings in the storage facility, such as access doors, vents or joints? Does the access have the appropriate gasket?				
5.10	Was there any observed physical deterioration of the tank? Could the physical condition of the tank be a source of contamination?				
5.11	Has there been any recent tank maintenance (i.e. painting/coating)? If yes, when? If yes, was disinfection performed?				
5.12	Is there a mixer? If yes, is it being used continuously?				
5.13	Is lack of mixing or turnover an issue in the tank? Does excessive storage or variable demand contribute to turnover issues?				
5.14	What was the measured chlorine residual (total/free) of the water exiting the storage tank on the date of the assessment?				

	List all storage tank corrective actions taken (inclunumber.	ding date). Include assessment elemer	nt
5.17	Other comments on the storage tank?		
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?		
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?		

6.0	<b>Hydropneumatic and Pressure Storage Tanks</b> 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	Issue and/or Description				
	For any <u>shaded box</u> checked, it should be considered an issue and a description must be included.	*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?					
6.2	Is there any evidence of intentional contamination at the storage tank? <u>IMMEDIATELY Contact MA State Police</u> and MassDEP					
6.3	Were there any observed leaks?					
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?					
6.5	Is the pressure tank maintaining an appropriate minimum pressure (per manufacturer's specifications)?					
6.6	Has there been any recent tank maintenance (i.e. painting/coating)? If yes, when? Was disinfection performed?					
6.7	Is there evidence of the tank being waterlogged?					
6.8	Were samples representative of the water from this tank collected? If so, what were the results?					
6.9	What was the measured chlorine residual (total/free) of the water exiting the storage tank on the date of the assessment?					
6.10	Other comments on the storage tank?					
	List all hydropneumatic tank corrective ac element number.	ctions taken (including date). Incluc	le asse	essme	nt	
1						

7.0	<b>Treatment Process</b> If applicable. PWS with multiple treatment plants may choose	to complete multiple sheets.			
	Briefly describe the treatment process(es) at the PWS:				
	Assessment Elements	Issue and/or Description			
	For any <u>shaded box</u> checked, it should be	*If any element has not been		1	1
	considered an issue and a description must be included.	reviewed, you must include an explanation.	Yes	No	Not Reviewee
7.1	Were there any interruptions in treatment				
	(lapses in chemical feed, turbidity excursions,				
	disinfection)? If yes, provide details for which				
	part, when and for how long? Were alarms				
	triggered during the treatment interruptions?				
7.2	Are treatment devices or filter media				
	operational and properly maintained?				
7.3	Are any chemicals past their expiration dates?				
7.4	Were unsanitary conditions observed in the				
	treatment plant or in chemical storage areas?				
7.5	Has there been any recent installation or repair				
	of treatment equipment? If yes, was proper				
	disinfection performed?				
7.6	Were there any recent changes in the				
	treatment process (e.g., addition of a process,				
	change in chemical or dosage, change in				
	pH)? If yes, provide details for the change and when it occurred.				
7.7	What was the chlorine residual measured at the				
••	entry point? Is it within the normal range?				
7.8	If the PWS uses phosphate, is there a chlorine				
	residual in the chemical tank of at least 10				
	mg/L? (not applicable to zinc)				
7.9	If the PWS uses phosphate, is there a chlorine				
	residual being maintained in the distribution				
	system?				
7.10	Are the test kits and instruments calibrated				
	appropriately? Are kits being used prior to				
	expiration date?				
7.11	Did a review of the filtered water turbidity reveal				
	any anomalies? (SWTR forms F and J)				
7.12	Were there any failures to meet the CT				
	requirements? (SWTR and GWR only)				
7.13	Were the water flow rates through the				
	treatment plant above the rated capacity of				
	the plant (e.g. filter loading rates, clearwell				
	approved rates, backwash frequency, etc.)				
1.14	If a sediment filter is present, when was the last				
7 4 5	time it was changed?				
.15	Other comments on the treatment system.				

8.0	<b>Source – Well</b> Use one sheet per activ	e groundwater source				
	Source Name:		Source ID	:		
	Assessment Elements	Issue and/or Descri	ption			
	For any <u>shaded box</u> checked, it should be considered an issue and a description must be included.	*If any element has no reviewed, you must inc explanation.		Yes	No	Not Reviewed*
8.1	Any unsanitary conditions observed in or around the well (insect or animal activity)?					
8.2	Are there any potential cross connections or interconnections impacting the source?					
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)?					
8.4	Has sampling of the raw water indicated total coliform in the well? If yes, answer the additional questions below.					
8.5	Has there been a change in the pumping conditions of the well (volume or rate)?					
8.6	Is the well cap properly sealed and water tight? Are there any observable failures in the cap, conduit, or well casing?					
8.7	Is the well cap vented and is the vent screened?					
8.8	Do the vent and any discharges terminate in an approved air gap?					
8.9	How far does the casing extend above grade?	Height:				
8.10	Was there evidence of standing water or flooding having occurred near the wellhead?					
8.11	Is the ground properly graded to shed water away from the wellhead?					
8.12	Is the wellhead secured to prevent unauthorized access?					
8.13	Have there been any activities or land uses in the Zone I that may have contributed to positive bacteria samples?					
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?					
8.15	If the well is a flowing artesian well, is the dis-charge directed downgradient from the wellhead?					
8.16	Is there an abandoned well nearby that may be impacting this well?					
8.17	Was the line pressure-tested to determine if there was a failure in the service line or pitless adapter?					

8.18	Has the well construction been evaluated (i.e. by camera in the well)?				
8.19	Other comments on the well.				
	List all well corrective actions taken (inclu	ding date). Include assessment elen	nent ı	numbe	ər.

9.0	Source - Surface Water Supply Use one sheet per active source						
	Source Name: Source			ce ID:			
	Assessment Elements For any <u>shaded box</u> checked, it should	Issue and/or Description					
	be considered an issue and a description must be included.	*If any element has not been revi you must include an explanati		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)?						
9.2	Have there been any algal blooms?						
9.3	Is the intake screened?						
9.4	Has the intake screen been cleaned and maintained within the last year?						
9.5	Any other changes in source water quality that might affect the treatment process or distribution water quality?						
9.6	Other source water comments						
	List all surface water source corrective element number.	e actions taken (including date).	Includ	le asso	essme	ent	



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

11.0	.0 Source – Purchased Use one sheet per active source						
	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.	<b>Issue and/or Desc</b> *If any element has not be you must include an e	een reviewe		No	Not Reviewed*	
11.1	Have discussions with the wholesaling system revealed any issues that might have contributed to bacteriological contamination?						
11.2	Has sampling of the interconnection indicated total coliform in the water being supplied from the wholesaling system?						
11.3	Is there an issue with incompatible disinfection or treatment chemicals between the wholesaler and purchasing system?						
11.4	Is the sample collection location at the interconnection? If not, is it collected from a "representative" location further downstream?						
11.5	Has the direction of flow changed through the interconnection?						
11.6	Is there evidence of flooding in the meter vault?						
11.7	Other comments on the purchased source?						
	List all purchased source corrective ac number.	tions taken (including dat	e). Include	e assessi	nent	element	

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	Heterotrophic Plate Count					
Turbidity	🗌 рН					
Coliform bacteria	Customer complaint logs					
Other:						
Other:						
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 (if collected prior to assessment submittal).	ultimately collected

1

#### **Corrective Actions**

#### **Corrective Action Summary**

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

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

Massachusetts Department of Er	nviror	nme	ntal Protection	RTCR-2
Certification:				
I certify under penalty of law that I am the pe contained herein is true, accurate and INDIVIDUAL WHO HAS BEEN AUTHOR ASSESSMEN	complet	te to t Y MA	he best of my knowledge SSDEP TO PERFORM T	and belief.
Print Name:			Title:	
Signature:			Date:	
Email:				
PWS OWNER OR PWS RESPONSIBLE CERTIFCATION IF THIS ASSESSMENT			ST ALSO COMPLETE TH	IE FOLLOWING
Print Name:			Title:	
Signature:			Date:	
Email:		_ I	Phone #:	
MassDEP Review To be completed by N	lassDE	Р.		
	Yes	No	Comments	
Has assessment been successfully completed?				
Likely reason for bacteriological occurrence has been found.				
PWS has other open violations or deficiencies that may have contributed to this incident.				
PWS has corrected the problems.				
Additional Comments:				
Accompany is designed Accompted		ioiont		
Assessment is deemed Acceptable	_	icient		changes (attached)
Corrective Action Plan Approved		nied	* *	n changes (attached)
Name of MassDEP reviewer:			Date:	

 WQTS data entry complete
 Approval/deficiency notice sent: