Guidelines for RTCR Level 2 Assessments

Department qualification of assessors

These general guidelines are used to determine how individual assessors will be evaluated to determine if they are competent to perform a Level 2 Assessment.

The following qualifications must be met for all individuals regardless of employment affiliation:

1. The individual must have experience with water sources, treatment, and distribution systems; and
2. The individual must hold a **professional license** in a relevant field (for example, certified operator, professional engineer).

Additionally, potential assessors must prove to the Department's satisfaction that they have

- An understanding of the RTCR including objectives and requirements;
- An understanding of coliform and *E. coli* specifically including sources, controls, and remediation;
- An understanding of coliform sampling procedures;
- Experience with interpreting and analyzing water supply sources, operations, and water quality throughout the treatment and distribution processes;
- Familiarity with water system operations and how changes affect the entire water supply system; and
- Familiarity with the particular water system that requires an assessment.

Assessment completion

The Level 2 water quality assessment must be completed by a party approved by the Department. ***Follow the guidelines listed above when selecting an assessor.*** If there are additional questions or more information needed, please contact the Department at (803) 898-4300.

The assessment must use the Department's form, DES 1395 Level 2 Water Quality Assessment for Bacterial Contamination, and describe sanitary defects, corrective actions, and a proposed timetable for correction. Each of the yes/no questions on the form must be answered. Where any yes/no responses show that an issue of concern exists, the issue must be described and an associated corrective action with timetable for correction described in the space provided. The assessor may also find it helpful to include or attach pictures with the form.

All sanitary defects identified and/or discovered must be corrected. The assessment is not considered complete until all identified defects are reported as corrected or a timetable is presented for correcting the defects.

Submit the completed assessment to the Department for review, comments, and approval to SC Dept of Environmental Services, Attn: Drinking Water Protection Division, 2600 Bull Street, Columbia SC, 29201.

South Carolina Department of Environmental Services
Bureau of Water
Level 2 Water Quality Assessment for Bacterial Contamination

1. PURPOSE:

This form, properly completed, is to be used to assess a public water system that has had repeated coliform positive samples.

2. ITEM-BY-ITEM INSTRUCTIONS:

System name: Enter the name of the public water system.
System number: Enter the seven-digit identification number assigned to the public water system by DES.
Population served: Enter the approximate population served by the water system.
System mailing address: Enter the system mailing address.
Contact phone: Enter the phone number for the primary system contact.
Source type: Circle the source water type: ground water, ground water purchase, surface water, or surface water purchase.
System operator of record: Enter the name of either the water treatment and/or water distribution operator that is responsible for the system. Enter N/A for a State or Transient Non-community system.
System capacity: Enter the regulated capacity of the water system.
Person(s) who collected total coliform samples: Enter the name of the person or persons who collected the coliform samples.
Sample collector's employer: Enter the employer of the person who collected the samples if that person does not work for the water system.

Part 1 General: Did any of the following situations occur before the positive coliform samples were collected for the water system? Answer each of the eight (8) questions under this section. Indicate yes or no in the corresponding column. For any yes answers, describe the issue or situation in the description column. If corrective action steps have already been started or completed, list these as well. Attach additional sheets to the assessment if more space is needed.

Part 2 Source Assessment(s):
Complete a source assessment sheet for each water source that was in use at the time the positive samples were collected.

Enter the well name and or number. Enter the location of the well and circle the primary use of the well(s) (primary, backup, emergency, or other. If other is chosen, give an explanation.

For the remaining eleven (11) questions, indicate yes or no except for the casing question. For any yes answers, describe the issue or situation in the description column. If corrective action steps have already been started or completed, list these as well. For the casing question, enter in inches that the casing extends above grade. Attach additional sheets to the assessment if more space is needed.

Part 3 Treatment assessment:
Complete the treatment assessment sheet only if the water system has treatment. If the system does not have treatment (distribution only) indicate in the appropriate column and leave the rest of the treatment section blank. If treatment is provided, give a brief description in the issue description section.

For the remaining nine (9) questions, indicate yes or no as appropriate For any yes answers, describe the issue or situation in the description column. If corrective action steps have already been started or completed, list these as well. Attach additional sheets to the assessment if more space is needed.

Part 4 Storage assessment(s):
Complete a storage assessment sheet for each storage tank on the system. Enter the tank name or number and capacity in the areas provided. Circle the tank type.

For the remaining fifteen (15) questions, indicate yes, no, or N/A where appropriate except for the chlorine residual question. For any yes answers, describe the issue or situation in the description column. If corrective action steps have already been started or completed, list these as well. For the chlorine residual question, enter the residual or N/A. Attach additional sheets to the assessment if more space is needed.

Part 5 Distribution system assessment:
Does the water system employ or contract with a certified distribution system operator? All community and non-transient community systems are required to designate an operator of the appropriate grade as responsible for operation and maintenance. In the space provided, indicate whether the system employs an operator, or has one on contract. Enter in the space provided the operator's name and certification number.

Does the water system perform their own repairs or contract the work? In the space provided, indicate whether or not the system does their own work. In the appropriate column, enter the name of the person or company that does the repairs, and their phone number.

For the remaining ten (10) questions, indicate yes, no, or N/A where appropriate. For any yes answers, describe the issue or situation in the description column. If corrective action steps have already been started or completed, list these as well. Attach additional sheets to the assessment if more space is needed.

Part 6 Sample site assessment:
Complete the sample site assessment sheet for each site that had a total coliform positive sample. Enter the location and circle the condition of the sample point or tap. For the remaining six (6) questions, answer yes or no as appropriate. For any yes answers, describe the issue or situation in the description column. If corrective action steps have already been started or completed, list these as well. Attach additional sheets to the assessment if more space is needed.

Part 7 Operations assessment:
Answer the question as appropriate. If the answer is yes, describe the issue or situation and any corrective action steps that have been taken. Attach additional sheets to the assessment if more space is needed.

Part 8 Environmental factors:
Answer the five (5) questions yes or no as appropriate. For any yes answers, describe the issue or situation in the description column. If corrective action steps have already been started or completed, list these as well. Attach additional sheets to the assessment if more space is needed.

Print name of person completing form: The person completing the form should print their name.

Date: Print the date that the form was completed.

Signature: The person that completed the form should sign their name.

DES staff use: DES staff should indicate whether or not the assessment was successfully completed and print their name.

3. OFFICE MECHANICS AND FILING: This form should be filed in the Drinking Water File Room according to the facility permit number.

Level 2 Water Quality Assessment for Bacterial Contamination

System Name	System Number	Population Served
System Mailing Address	Contact Phone	Source Type: Groundwater / Purchase Groundwater Surface Water / Purchase Surface Water
System Operator of Record		System Capacity
Person(s) who collected total coliform samples (if not operator of record)	Sample Collector's Employer	

Part 1 General: Did any of the following situations occur before the positive coliform samples were collected?

		Issue Description	Corrective Action & Date
Were there any operation or maintenance activities that could have introduced coliform bacteria?	Y N		
Where there any interruptions in the treatment process?	Y N		
Were there any visible indications of unsanitary conditions?	Y N		
Did the system lose positive pressure?	Y N		
Was there any unauthorized access to the facilities?	Y N		
Were there other samples taken and not used for compliance that were positive for total coliform?	Y N		
Was there a fire-fighting event or flushing operation?	Y N		
Were there any other situations that occurred before the positive samples were collected?	Y N		

Part 2: Source Assessment (complete a separate page for each well or source)

Well name/number	Well use: Primary / Backup / Emergency / Other

		Issue Description	Corrective Action & Date
Are there any obvious contamination sources within a 100-foot radius of the wellhead?	Y N		
Have there been any sewer spills, source water spills, or other disturbances within a 100-foot radius of the well?	Y N		
Is there evidence of standing water near the wellhead?	Y N		
Are the wellhead and piping exposed to the weather?	Y N		
Is the sanitary seal intact?	Y N		
Is the well vent screened?	Y N		
How far does the casing extend above grade?			
Are the wellhead and piping secured to prevent unauthorized access?	Y N		
Have any additional sources recently been put into service?	Y N		
Was the additional source tested before being put into service?	Y N		
Other comments on wellhead. (Are there aspects of well construction and/or operation that could have caused positive samples?)	Y N		

Part 3: Treatment Assessment (if treatment provided)		Issue Description	Corrective Action & Date
Does the system provide treatment? (If yes, describe the treatment)	Y N		
Have there been any recent treatment changes? (Installation or repair of equipment, failure of equipment, etc.)	Y N		
Are all treatment devices operational?	Y N		
Are all treatment devices maintained?	Y N		
Have there been any recent treatment *process* changes (new chemical, application point moved, new vendor, new treatment process, etc.)	Y N		
Where there any interruptions or stopages in any of the treatment processes? (lapse of chemical feed, etc.) How long?	Y N		
What is the free chlorine residual immediately downstream from the treatment process(es) today?	Enter residual(s) or N/A		
Was the system flow rate greater than any treatment system capacity?	Y N		
Other comments on the treatment system(s)	Y N		

Part 4: Storage Assessment (complete a separate page for each tank)

Tank name/site location	Tank capacity	Type: Bladder / Bladderless / Diaphragm / Atmospheric

		Issue Description	Corrective Action & Date
Was there been any recent work done on the tank?	Y N		
Are the overflow and vents properly screened?	Y N		
Is the tank and tank site secured to prevent unauthorized access?	Y N		
Could the physical condition of the tank be a source of contamination?	Y N		
If a pressure tank, is it maintaining an appropriate minimum pressure?	Y N N/A		
If a pressure tank, is it waterlogged?	Y N N/A		
Is the tank being operated properly?	Y N		
Is the tank being maintained properly?	Y N		
When was the last time the tank was cleaned, painted, or coated?	Y N		
Is there any visual deterioration of the tank?	Y N		
Are there any visual leaks in the tank?	Y N		
Is there any evidence of intentional contamination of or tampering with the tank?	Y N		
What is the disinfectant residual leaving the tank today?	Enter residual or N/A		
Is there any thing else related to the storage tank that could relate to positive coliform samples?	Y N		
Other comments on storage.	Y N		

Part 5: Distribution System Assessment		Issue Description	Corrective Action & Date
Does the system employ or contract with a certified distribution system operator?	Employ Contract	Distribution system operator name and number:	
Does the water system perform their own repairs or contract the work?	Own repairs Contract	Contract company: Contract phone:	
If repairs are performed by the water system, does the system have repair procedures?	Y N		
Were there any recent low-pressure events in the distribution system?	Y N		
Were there any scheduled flushing events in the distribution system?	Y N		
Were there any main breaks, repairs, or additions?	Y N		
Were there any sanitary defects in the booster pump station(s)?	Y N N/A		
Is the air relief valve vault(s) subject to flooding or does the vent(s) terminate below grade?	Y N N/A		
Are valves on water mains regularly maintained?	Y N		
Are fire hydrants regularly maintained?	Y N N/A		
Is there any evidence of intentional contamination in the distribution system?	Y N		
Are there other distribution system factors that could have contributed to positive coliform samples?	Y N		

Part 6: Sample Site Assessment (complete a separate sheet for each location that had a positive sample)

Sample tap location (address):	Type: Outside hose bib Inside sink Other
Sample tap condition: Good Fair Poor	

		Issue Description	Corrective Action & Date
Has there been any recent plumbing work near the sample location?	Y N		
Have there been any plumbing breaks or failures?	Y N		
Have there been any reports of low or loss of pressure at the sample site?	Y N		
Are there any treatment devices at this location?	Y N		
Was the proper sample protocol followed during collection and transport?	Y N		
Other comments on the sample site or sample tap?	Y N		

Part 7: Operations Assessment		Issue Description	Corrective Action & Date
Have there been any recent operational changes?	Y N		

Part 8: Environmental Factors		Issue Description	Corrective Action & Date
Was there a heavy rainfall event near the time the sample(s) were collected?	Y N		
Has there been any flooding?	Y N		
Have there been extremes in heat or cold?	Y N		
Have there been changes in available source water? (significant drop in water table, well levels, etc)	Y N		
Have there been any interruptions to electrical power?	Y N		

Print name of person completing form:_____ Date:_____

Signature:_____

DES staff use only			
Assessment has been successfully completed	Y N	Name of DES Reviewer:	