

# **Revised Total Coliform Rule – Level 1 Assessment for Water Systems Operating a Surface Water Treatment Plant**

This form is intended to assist public water systems in completing the investigation required by the revised Total Coliform Rule (rTCR) [effective July 1, 2021] and may be modified to take into account conditions unique to the water system. To avoid a violation, an assessment report must be completed and returned to your local regulatory agency no later than 30 days after the coliform treatment trigger date. If responses require additional pages, please include them with your submittal.

## ADMINISTRATIVE INFORMATION

|  |  |
| --- | --- |
| **Public Water System Name:** |  |
| **Public Water System Number:** |  |
| **Public Water System Type (CWS, NTNC, TNC):** |  |
| **Date Investigation Completed:** |  |
| **Date that Triggered Level 1 Assessment** |  |

## CONTACT INFORMATION

| Title | Name | Email Address | Telephone Number |
| --- | --- | --- | --- |
| Operator in Responsible Charge |  |  |  |
| Person that collected Total Coliform (TC) samples  |  |  |  |
| System Owner |  |  |  |
| Certified Laboratory for Microbiological Analyses |  |  |  |

## INVESTIGATION DETAILS FOR RAW SURFACE WATER SOURCE

| Description | Response |
| --- | --- |
| Raw Surface Water Source (Inspect surface water intake for physical defects and report findings accordingly) |  |
| Is the intake secured to prevent unauthorized access? |  |
| To what treatment plant (name) is the water supplied from this intake? |  |
| How often do you collect a total coliform (TC) sample from the raw water? |  |
| Provide the date and result of the last TC test at this location. |  |
| Any additional observation (unusual condition, etc.)? |  |

## INVESTIGATION DETAILS FOR SURFACE WATER TREATMENT PLANT

| Description | Response |
| --- | --- |
| Treatment Plant (Inspect surface water intake for physical defects and report findings accordingly) |  |

## PRE-FILTRATION TREATMENT

| Description | Response |
| --- | --- |
| Do you provide any treatment prior to filtration? |  |
| If yes, specify type of treatment provided. |  |
| Did you experience any problems with the pre-filtration treatment when the coliform treatment trigger occurred? If yes, specify. |  |
| Do you provide pre-chlorination? |  |
| Specify the point of pre-chlorination? |  |
| Was the chlorination system working properly when the coliform treatment trigger occurred? |  |
| Have you recently changed the pre-chlorination dosage? |  |
| Any additional observation, information? |  |

## FILTRATION TREATMENT

| Description | Response |
| --- | --- |
| What kind of filters do you have (Pressure or Gravity, Media specifications)  |  |
| How many filters are there? |  |
| What is the capacity of each filter in gpm (gallons per minute)? |  |
| What is the capacity of the treatment plant in gpm? |  |
| What is the filter loading rate for each filter (gpm per square feet)? |  |
| How many filters were in service when the coliform treatment trigger occurred? |  |
| Did any filter experience any operational problems when the trigger happened? |  |
| Did you experience any problems with the filter backwashing process? |  |
| Did the combined effluent from the treatment plant experience any turbidity failures or levels above normal values when the coliform treatment trigger occurred? |  |
| Did any individual filter exceed the turbidity standard when the coliform treatment trigger occurred? |  |
| How often do you backwash your filters? Is it based on a timer or effluent turbidity? |  |
| Are the filters backwashed with treated water? Specify backwash rate and duration. |  |
| When was the last time you inspected your filter media? |  |
| When was the last time you changed your filter media? |  |
| Did you notice any mud balls in the filters when you last inspected your filters? |  |
| Were alarms and/or auto shutdowns properly set or functioning? |  |
| If alarms and/or auto shutdowns were not properly set or functioning, please explain. |  |
| Add any additional observation or information. |  |

## CHLORINATION TREATMENT

| Description | Response |
| --- | --- |
| What kind of disinfectant do you add? |  |
| Where do you add the disinfectant (specify location)? |  |
| What was the chlorine residual in the treatment plant effluent? |  |
| What was the chlorine residual in the distribution system? |  |
| Did the treatment plant effluent lose chlorine residual? If yes, how long? |  |
| Did the distribution system lose chlorine residual? If yes, how long? |  |
| If you provide continuous chlorination treatment, was there any equipment failure? |  |

## HYPOCHLORINATION TREATMENT

| Description | Response |
| --- | --- |
| Is the disinfectant feed pump feeding disinfectant? |  |
| What is the feed rate of disinfectant in ml (milliliters) or minutes? |  |
| What is the concentration of the disinfectant solution being fed? (percent, or mg/L (milligrams per liter) of chlorine as HOCl (hypochlorous acid)) |  |
| By what method was the concentration of solution determined? (examples: measured, manufacturer’s literature) |  |
| What is the age in days of the disinfectant solution currently being used at this treatment location?  |  |
| What is the raw water flow rate at the point where disinfectant is added in gallons per minute? |  |
| What is the total chlorine residual measured immediately downstream from the point of application? |  |
| What is the free chlorine residual measured immediately downstream from the point of application? |  |
| What is the contact time in minutes from the point of disinfectant application to the CT (contact time) compliance point? |  |
| Did the treatment plant experience any CT failure due to inadequate chlorine dosage? If yes, specify what happened? |  |
| Did the treatment plant experience any CT failure due to inadequate contact time? If yes, specify what happened? |  |
| Any additional observation/information? |  |

## DISINFECTION TREATMENT – ULTRAVIOLET (UV) LIGHT

| Description | Response |
| --- | --- |
| Is the disinfectant equipment working properly? |  |
| What is the dosage of disinfectant? |  |
| By what method was the feed rate/residual concentration determined? (example: measured, manufacturer’s literature) |  |
| What is the age of the UV lamps currently being used at this treatment location?  |  |
| What is the raw water flow rate at the point where disinfectant is added? |  |
| Is the disinfectant equipment working properly? |  |

## DISINFECTION TREATMENT – OTHER THAN UV OR CHLORINATION

| Description | Response |
| --- | --- |
| If you provide disinfection treatment other than UV or chlorination, was there any equipment failure?  |  |
| Did this result in a loss of chlorine residual at the entry point to distribution system? If Yes, how long? |  |
| Did the distribution system lose disinfectant residual? |  |
| Was emergency chlorination initiated?  |  |
| If Yes, when? |  |
| If you provide disinfection treatment other than UV or chlorination, was there any equipment failure?  |  |

## PRESSURE TANK

| Description | Response |
| --- | --- |
| Inspect each pressure tank for physical defects and report findings accordingly. *Insert pressure tank name in following cell.* |  |
| What is the volume of the pressure tank? |  |
| What is the age of the pressure tank? |  |
| Is the pressure tank bladder type or air compressor type? |  |
| Did the pressure tank deviate from normal operating pressure? |  |
| Is the compressor pump running more often than normal? |  |
| Is the tank bladder waterlogged? |  |
| Does the tank have damage, rust, leaks, or holes? |  |
| Was there any recent work performed? |  |
| Is there an air relief vent? If yes, is it on the pressure tank screened and facing downwards? |  |
| Can the inside of the pressure tank be visually inspected thru an inspection port? If yes, when was the last time it was inspected? |  |

## STORAGE

| Description | Response |
| --- | --- |
| Inspect each storage tank for physical defects and report findings, accordingly, add additional pages if needed. *Insert storage tank name in the following cell.* |  |
| Is each tank locked to prevent unauthorized access? |  |
| Are all vents of each tank screened and downturned to prevent dust and dirt from entering the tank? |  |
| Is the overflow on each tank screened? |  |
| Are there any unsealed openings in the tank such as access doors, water level indicators hatches, etc.? |  |
| Are there any visible leaks in the tanks? Is the exterior of the tank corroded? |  |
| Is the roof or cover of the tank sealed and free of any leaks? |  |
| Is the tank above ground or buried? |  |
| If buried or partially buried, are there provisions to direct surface water away from the site? |  |
| Has the interior of the tank been inspected to identify any sanitary defects, such as root intrusion? |  |
| Does the tank “float” on the distribution system or are there separate inlet and outlet lines? |  |
| Prior to the TC+ or EC+, what was the previous date that the above items were checked and documented? |  |
| What is the measured chlorine residual of the water exiting the storage tank today? Note if total chlorine measured or free chlorine residual is measured. |  |
| What is the volume of the storage tank in gallons? How old is the tank? |  |
| Is the tank baffled? |  |

## DISTRIBUTION SYSTEM

| Description | Response |
| --- | --- |
| What is the minimum pressure you are maintaining in the distribution system? |  |
| Did pressure in the distribution system drop to less than 5 psi prior to experiencing the total coliform positive finding? |  |
| Has the distribution system been worked on within the last week (service taps, hydrant flushing, main breaks, main extensions, etc.)? If yes, provide details. |  |
| Are there any signs of excavations near your distribution system not under the direct control of your maintenance staff? |  |
| Did you inspect your distribution system to check for mainline leaks? Do you or did you have a mainline leak? |  |
| If there was a mainline leak, when was it repaired? |  |
| On what date was the distribution system last flushed? |  |
| Is there a written flushing procedure you can provide for our review? |  |
| Do you have an active cross connection control program? |  |
| What is name and phone number of your Cross-Connection Control Program Coordinator? |  |
| Have all backflow prevention devices in the distribution system been tested annually and if they did not pass, were they repaired or replaced and retested? |  |
| On what date was the last physical survey of the system done to identify cross-connections? |  |

## BOOSTER STATION

| Description | Response |
| --- | --- |
| Do you have a booster pump? How many? |  |
| Do you have a standby booster pump if the main pump fails? |  |
| Prior to bacteriological quality problems, did your booster pump fail? |  |
| Do you notice standing water, leakage at the booster station? |  |

## SAMPLE SITE EVALUTATION

| Description | ROUTINE TC+ OR EC+ | UPSTREAM SITE | DOWNSTREAM SITE | OPTIONAL ADDITIONAL SAMPLE |
| --- | --- | --- | --- | --- |
| (Complete for all TC positive or EC positive findings and report accordingly.) *Include sample site names in the following cells and indicate if TC positive or EC positive. Attach copies of the results.* |  |  |  |  |
| What is the height (in inches) of the sample tap above grade? |  |  |  |  |
| Is the sample tap located in an exterior location or is it protected by an enclosure? |  |  |  |  |
| Is the sample tap threaded? Does it have a swing arm or an aerator (common in sinks)? |  |  |  |  |
| Is the sample tap in good condition, free of leaks around the stem or packing? |  |  |  |  |
| Can the sample tap be adjusted to the point where a good laminar flow can be achieved without excessive splash? |  |  |  |  |
| Is the sample tap and areas around the sample tap clean and dry (free of animal droppings, other contaminants, or spray irrigation systems)? |  |  |  |  |
| Is the area around the sample tap free of excessive vegetation or other impediments to sample collection? |  |  |  |  |
| Describe how the tap was treated in preparation for sample collection (ran water, swabbed with disinfectant, flamed, etc.) |  |  |  |  |
| Is this sample tap designated on the bacteriological sample siting plan (BSSP) as a routine or repeat site? |  |  |  |  |
| Were the samples delivered to the laboratory in a cooler and within the allowable holding time? |  |  |  |  |
| What were the weather conditions at the time of the positive sample (rainy, windy, sunny)? |  |  |  |  |

## GENERAL OPERATIONS

| Description | Response |
| --- | --- |
| Has the sampler who collected the samples received training on proper sampling techniques? If yes, please indicate date of last training. |  |
| Does the water system have a written sampling procedure and was it followed? |  |
| Where there any power outages that affected water system facilities during the 30 days prior to the TC positive or EC positive findings? |  |
| Were there any main breaks, water outages, or low pressure reported in the service area from which TC positive or EC positive samples were collected? |  |
| Does the system have backup power or elevated storage? |  |
| During or soon after bacteriological quality problems, did you receive any complaints of any customers’ illness suspected of being waterborne? How many? |  |
| What were the symptoms of illness if you received complaints about customers being sick? |  |

## SUMMARY

Based on the results of your assessment and any other available information, what deficiencies do you believe to have caused the positive total coliform samples within your distribution system?

| Deficiency | Deficiency Descriptions |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

## CORRECTIVE ACTIONS

What actions have you taken to correct the above mentioned deficiencies? If additional time is needed to correct a deficiency, indicate the date that it will be corrected.

| Deficiency | Corrective action | Date Completed |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**CERTIFICATION**

I certify under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

| Name & Signature | Title | Date |
| --- | --- | --- |
|  |  |  |

## ADDITIONAL INFORMATION

Upon review of the Level 1 Assessment Form, the local regulatory agency may require submittal of the following additional information:

* Sketch of system showing all sources, all treatment and chlorination locations, storage tanks, microbiological sampling sites, copies of bacteriological sampling results, and general layout of the distribution system including the location of all hazardous connections such as the wastewater treatment facility.
* A set of photographs of the source, pressure tanks, and storage tanks in the system may be submitted if they would show that the contamination is directly related and changes have been made since the last inspection by the local regulatory agency.
* Name, certification level and certificate number of the Operator in Responsible Charge.
* Copy of the last cross connection survey performed that identifies the location of all unprotected cross connections.