Rural North Vacaville Water District #4810013
Bacteriological Sample Siting Plan 2015

This Sample Siting Plan details the distribution system bacteriological monitoring program for the Rural North Vacaville Water District (RNVWD) #4810013. Bacteriological samples will be collected throughout the distribution system according to this plan to ensure the quality of water being delivered to the customer meets drinking water standards.

System Description

The System is a small public water system that in 2013 delivered over 47.5 million gallons of drinking water to 372 metered service connections serving approximately 900 customers.

The System's water source is groundwater from two wells (one is a standby source) supplying water for five pressure zones. There are two distribution reservoirs. The water is disinfected with Sodium Hypochlorite before distribution to the customers.

Water Source

The following table lists the System's groundwater sources with the State Water Resources Control Board – Division of Drinking Water (DDW) Source Names and Source Numbers used for sampling and reporting purposes.

System Name	System #	Source Name	Source Number
RNVWD	4810013	Well 1	4810013 – 001
RNVWD	4810013	Well 2	4810013 – 002

Routine Sampling Requirements

Based on population figures the System is required to take a minimum of one routine sample per month. Because the System is near the bottom of the next range of 401-890 connections that requires 2 routine samples a month, we will sample more than required to better confirm bacterial quality in different areas of the remote distribution system.

Sample Locations

The system has four dedicated sample stations for Routine sampling of the distribution system. The dedicated sample stations are listed below:

#2 3955 Estate Drive – End of English Hills to Estate Drive the sample station is on the left

#3 4380 Cantelow Road – Cantelow Road before Gibson Canyon Road (east) the sample station is on the north side of Cantelow Road, east of Gibson Canyon Road

#4 3859 Joslyn Lane – Steiger Hill Road to Joslyn Lane, the sample station is on the right

#5 End of Ciarlo Lane – English Hills Road to Ciarlo Lane, go way up the hill

The routine compliance locations will be sampled as follows:

#2, and #3 one month, #4, and #5 the next month. We will alternate by month between these 2 groups.

Sampling Procedures

All compliance samples will be collected by staff certified by the DDW as a Distribution System Operator.

Before collecting a sample, water from the sample station will be allowed to flow for two to three minutes or sufficiently so that fresh water from the distribution system is being sampled. Fresh water is indicated by a constant chlorine residual.

The sampler will first sample for chlorine residual using a field test kit which meets DDW standards. The amount of chlorine residual present will be recorded. The residual chlorine level from routine and repeat samples will be used to determine the Running Annual Average determined quarterly.

The sampler will only collect samples in specific bacteriological sample containers provided by the analyzing laboratory. These sterile bottles contain a dechlorinating agent and are marked with a 100 ml fill line.

The sampler will use sterile technique and follow laboratory, Standard Methods and AWWA sampling directions for bacteriological sampling.

Each sample will be clearly designated as routine, routine replacement, repeat, or other.

The sampler will complete a laboratory slip to accompany each sample provided to the laboratory. This slip, completed in the field, will document Site ID, date, time, sampler ID, chlorine residual, laboratory test requested, and sample type designation.

If the free chlorine residual is less than 0.2 ppm, the sampler will request the laboratory analyze the sample for Heterotrophic Plate Count (HPC) in addition to total coliform, and Escherichia coli (E. coli).

The sampler will also verify the sampling event by documentation to the System Field Monitoring Log for bacteriological samples. Field samples will be held in an ice chest below 10°C, and be transported to the laboratory on the same day as sampling.

Repeat Sampling

If a distribution coliform sample is positive, a microbiologist from the Napa/Solano Public Health Laboratory must notify DIRECTLY (no phone messages or email) SID staff within 24 hours. The Bacteriological Notification Plan gives directions to the analyzing laboratory regarding whom to directly notify at SID, or whom to notify at the DDW if SID staff can not be reached. A copy of these instructions is included with this bacteriological sample siting plan.

When the laboratory notifies us that a routine sample is coliform-positive, we will conduct triggered source monitoring, and a repeat sample set will be taken within 24 hours. For this system that collects two samples per month, a repeat sample set shall be at least four samples for each total coliform-positive sample.

Repeat sample site No. 1 will be a sample of the original routine sample site.
Repeat sample site No. 2 will be within five connections upstream.
Repeat sample site No. 3 will be within five connections downstream.
Repeat sample site No. 4 will be at Well 1 before chlorination.

These samples will be analyzed for total coliform, and E. coli.

This process will continue until no coliform are present in a complete repeat sample set or until the MCL for total coliform has been exceeded and DDW has been notified. Arrangements will be made with the laboratory to bring in water samples on weekends and holidays.

As a public water system that collects fewer than five routine samples per month if we have one or more total coliform-positive samples, we will collect at least five routine samples the following month.

Sample month following a positive sample No. 1 will be routine sample site #2
Sample month following a positive sample No. 2 will be routine sample site #3
Sample month following a positive sample No. 3 will be routine sample site #4
Sample month following a positive sample No. 4 will be routine sample site #5
Sample month following a positive sample No. 5 will be 7672 Acacia Lane backflow

These samples will be analyzed for total coliform, and E. coli.

This process will continue until no coliform are present in a complete repeat sample set or until the MCL for total coliform has been exceeded and DDW has been notified. Arrangements will be made with the laboratory to bring in water samples on weekends and holidays.

MCL Violation

The following constitute an MCL violation and **require immediate notification to the DDW.**

1. More than one sample collected during any month is total coliform-positive; or
2. Any repeat sample is E. coli-positive; or
3. Any repeat sample following an E. coli-positive routine sample is total coliform-positive.

Significant Rise in Bacterial Count

The following constitute an MCL violation and **require immediate notification to the DDW.**

1. The system has a sample positive for E. coli
2. The system fails the total coliform MCL

DDW Notification

If an MCL violation has occurred or the System is experiencing a significant rise in bacterial count, SID staff will notify the DDW by the end of the business day on which the compliance violation was determined, or if the DDW office is closed within 24 hours of the laboratory notification.

The current DDW engineer contact is Marco Pacheco office phone 510-620-3467 or cell phone 925-323-6131. If direct contact with Marco is unavailable, staff will contact DDW District Engineer Robert Brownwood at 510-620-3454 office phone or cell phone 510-221-7596.

Customer Notification

The System shall also notify the customers, after consultation with the DDW, with a Tier 1 Public Notice (within 24 hours) if:

- Any repeat sample is positive for E. coli
- Any repeat sample following an E. coli-positive is total coliform-positive

Tier I Notification shall be delivered to the public consistent with the System's Water Quality Emergency Notification Plan.

The System shall also notify customers, after consultation with the DDW, with a Tier II Pubic Notice (within 30 days) if:

- Monitoring for coliform bacteria is not conducted according to this plan
- More than one sample collected during any month is total coliform-positive

Tier II Notification shall be provided to the public consistent with the System's Water Quality Emergency Notification Plan.

DDW Reporting

All analyses completed in a given month will be reported to the DDW by the tenth day of the following month. A copy of the Monthly Summary of Distribution System Coliform Monitoring form is included with this plan. Laboratory reports shall be retained for at least five years.

Customer Reporting

The Annual Water Quality Report provides the public with information regarding any detection of coliform during routine sampling over the past year. This report will detail the range and average of percent positive samples, the MCL, PHG, and most likely source of contamination. This report will also review any compliance violations that may have occurred during the year.

Laboratory Analysis

The Napa/Solano Public Health Laboratory will analyze the distribution system routine and repeat samples for total coliform, and E.coli using DDW approved methods. Heterotrophic Plate Count will be performed on any sample with a chlorine residual <0.2 ppm.

The Napa/Solano Public Health Laboratory is located at 2201 Courage Drive, Fairfield, CA 94533 the phone number is 707-784-4410. During business hours, licensed microbiologists are available to assist with questions, sample drop off, and supply pick-ups. The laboratory is flexible and will arrange to meet our repeat sampling needs on weekends or holidays.

Sampler Training

The sampler will read and follow the instructions of this Sample Site Plan, and will receive field training from qualified staff with prior field experience.

Other Samples

The System staff will take Other samples due to:

- Construction or repair of wells
- Main installation or repairs
- Construction, repair, or maintenance of storage facilities
- Any loss of system pressure to less than five psi, then sample in the affected portion of the distribution system
- Investigations
- Customer concerns

Maps

A Map is provided showing the service area, the sources, the distribution system, and the Routine sample site locations.