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SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board
Division of Drinking Water

June 12, 2017 PWS No. 4810013

Mr. Gordon Stankowski
General Manager
Rural North Vacaville Water District
P.O. Box 5097
Vacaville, CA 95696

2017 SANITARY SURVEY FINDINGS

Dear Mr. Stankowski,

This letter confirms the findings of the sanitary survey of the Rural North Vacaville Water District (RNVWD) water system. On April 17, 2017, Stephen Burke and Bruce Burton of the Division of Drinking Water (Division), met with Mr. Nathan Stankowski, water district representative, Mr. Josh Hendrickson, Mr. Justin Noutary, and Ms. Sue Murphy with Solano Irrigation District (SID)., contracting operators and water quality contact, to overview documents and conduct a sanitary survey. The Division has the following findings:

RNVWD continues to be capable of meeting the requirements of the California Safe Drinking Water Act and provides a reliable and adequate supply of drinking water. The water system complies with regulations and permit conditions.

The following items require your immediate attention:

1. The Bacteriological Sample Siting Plan (BSSP) notes that the distribution system consists of five zones; however, during the inspection it was reported that a sixth zone exists. This zone must be integrated into an updated version of the 2015 BSSP. RNVWD must update the BSSP and submit a final plan to the Division by **September 1, 2017.**

2. At the time of the survey, Division staff could not verify whether or not the 1087 Sodium Hypochlorite 9 solution manufactured by Sierra Chemical, and used for by RNVWD and SID for disinfection purposes, is NSF 60 certified for use in drinking water treatment. Please provide proof of NSF 60 certification for the sodium hypochlorite solution to the Division by **July 31, 2017**.

The assistance provided to Mr. Burke is greatly appreciated. Please provide the Division with your plan and time frame to address the issues described in this letter. If you have any questions regarding this matter, please contact Stephen Burke at (916) 319-8535. You may also contact me at (510) 620-3454 or by e-mail at Marco.Pacheco@waterboards.ca.gov.

Sincerely,

Marco Pacheco, P.E.
San Francisco District Engineer
Division of Drinking Water

Enclosures:

1. Sanitary Survey Report
2. Appendices
   A. Source Monitoring Schedule
   B. Site Schematic
   C. Inspection Photos

cc: Terry Schmidtbauer, Solano County Environmental Health Department (w/o enclosures)

Solano Irrigation District (w/ enclosures)
810 Vaca Villa Pkwy STE 201
Vacaville, Ca 95688-8834

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State Water Resources Control Board
Division of Drinking Water

Sanitary Survey Report

For The

Rural North Vacaville

System No. 4810013

April 2017

San Francisco District

Drinking Water Field Operations Branch

Stephen Burke, Water Resource Control Engineer

Marco Pacheco, P.E., Senior Water Resource Control Engineer

I. INTRODUCTION

1.1 Purpose of Report

On April 17, 2017, Mr. Stephen Burke, Water Resource Control Engineer with California's State Water Resources Control Board – Division of Drinking Water (Division), conducted a sanitary survey of the Rural North Vacaville water district (RNVWD). The survey covered the following:

1. Water source
2. Treatment
3. Distribution system
4. Pumping facilities
5. Finished water storage
6. Monitoring, reporting, and record retention
7. Management and operations
8. Operator compliance

This report provides a description of the water system and its operation, assesses compliance with applicable laws and regulations, identifies sanitary hazards, and makes recommendations.

1.2 Description

RNVWD is a community water system serving only unincorporated area of rural Solano County, north of Vacaville, CA. The surrounding land is mixed agricultural rural-residential comprised of the 22 square mile service area enveloping Cantelow Road, English Hills, Gibson Canyon, and Steiger Hill.

The system provides drinking water for 382 metered service connections or approximately 1,081 people, by way of LAFCO's Municipal Services Review Report 2.83 multiplier of people per households. The sources of supply are two groundwater wells, Well 01, Primary Station (PS) Code 4800753-001 and Well 02, PS Code 4800753-002. RNVWD wells are located approximately 1000 feet apart, drilled to a depth of 1,400 feet (ft), and producing as much as 500 gallons per minute (gpm). Well 2 continues to serve as an emergency standby source due to a history of arsenic contamination greater than 10 ppb, the maximum contaminant level. The wells are located in the Solano sub-basin of the Sacramento County Valley groundwater basin, DWR basin number 5-21.66.

1.3 Source of Information

Source of information used in this report include:

- Division's files
- Water System's files
- 2016 Annual Report
- RNVWD persons of interest present at the survey included:

    - Mr. Nathan Stankowski, contracted RNVWD representative
    - Mr. Joshua Hendrickson, contracted SID State Certified Operator
    - Mr. Justin Noutary, contracted SID State Certified Operator
    - Ms. Sue Murphy, contracted SID water quality contact

II. INVESTIGATIONS AND FINDINGS

2.1 Permit & Classification

2.1.1 Permit Status

The Division issued water supply permit no. 02-04-00P-4810013 on June 16, 2000. The water system is in compliance with the provisions of the domestic water supply permit.

2.1.2 Changes in System

RNVWD is actively making plans to treat the arsenic contamination at Well 02 for long-term sustainability. **A planning study is expected to be decided by 2018 quarter 1.**

2.1.3 System Classification

RNVWD is classified as a community water system (CWS).

Table 2.1: Population and Service Connections from the 2016 Annual Report

Residential	Residential Service Connections	Total Service Connections
1081	382	382

* Population is taken from a Municipal Service Review Report for LAFCO using a 2.83 person per household in Solano County

2.2 Sources

2.2.1 Groundwater Sources

RNVWD has two approved groundwater sources, Well 01, PS Code 4810013-001 and Well 02, PS Code 4810013-002. Specifications, construction, surface features, and standard controls are shown below:

Table 2.2.1(a) - Specifications

Sources	Status	Capacity	Well Depth	Drilling Date	Pump
Well 01	Active	450 gpm	1391 feet	10/11/2011	75 hp vertical
Well 02	Standby	450 gpm	1284 feet	10/29/2001	75 hp vertical

Table 2.2.1(b) Construction

Sources	Casing Material	Casing Diameter	Annular Seal Depth	Annular Seal Material
Well 01	Steel	16.625 inches	902 feet	Cement Grout
Well 02	Steel	16.625 inches	901 feet	Cement Grout

Table 2.2.1(c) Surface

Source	Openings Sealed	Casing Vent	Air Relief Vent	Screen Intervals (feet below surface
Well 01	Yes	Yes	Yes	1017/1047; 1169/1189; 1245/1261; 1271/1291; 1351/1361
Well 02	No	Yes	Yes	1071/1099; 1210/1240

Table 2.2.1(d) Standard controls

Sources	Check Valve	Flowmeter	Pump-to-Waste	Enclosure	Sample Tap
Well 01	Yes	Yes	Yes	Yes	Yes
Well 02	Yes	Yes	Yes	Yes	Yes

The inspection deficiency findings at Well 02 found an unsealed opening at the wellhead pump pedestal (See Table 2.2.1(c)).

2.2.2 Adequacy of Supply

RNVWD is required to have sufficient source capacity and storage to meet the Maximum Daily Demand (MDD) per Title 22, Section 64554 of the California Code of Regulations (22 CCR §64554). In 2015, RNVWD reached its historical MDD of 2.084 Acre-feet or 0.6794 million gallons per day (MGD) on August 20. The total production capacity of the active Well 1 is approximately 0.648 MGD. Additional emergency source capacity from standby Well 02 supplies 0.648 MGD for a maximum of five consecutive days and fifteen total days per year, per 22 CCR §64414(c). RNVWD also has a storage capacity of 0.6 MG, which is greater than the MDD when combined with production available. RNVWD has sufficient water available to meet its MDD and can comply with the Waterworks Standards based on use of the Well 01 reliable source, storage, and Well 02 emergency supply capacity.

Table 2.2.2 Water Production based on 2015 Annual Reports

Source Type	Maximum Day (gallons)		Maximum Month		Annual Total
Groundwater	8/20/2015	679,384	June	5,178,000	43,951,320

**Recorded figures from eAR are in Acre-feet converted to gallons using 1 AF=326,000 gallons*

2.2.3 Source Water Assessment and Protection (SWAP)

The latest assessment of the two groundwater sources was completed by Luhdorff & Scalmanini Consulting Engineers in March 2002. The results of the assessment found no identifiable activities that were associated with contaminants in the groundwater supply that would impact the water supply wells. The assessment goes on to identify nearby livestock grazing, low density septic systems, orchards, and irrigation wells as possible sources of contamination for Well 01 and 02. However, both wells were determined to have high physical barrier effectiveness based upon their construction and susceptibility to contamination.

Table 2.2.3 Surrounding Area

Sources	Distance from:			
	Sewer, Septic	Leaching Field	Cesspool	Animals
Well 01	> 50 ft	> 100 ft	> 150 ft	> 100 ft
Well 02	> 50 ft	> 100 ft	> 150 ft	> 100 ft

2.3 Treatment

2.3.1 Treatment Method

RNVWD chlorinates its water supply on a continuous basis. A supervisory control and data acquisition (SCADA) system monitors chlorine residual levels. The feed rate is controlled manually to provide delivered chlorine residual levels ranging between 0.5 and 0.8 mg/L. Using a double-walled containment for chemical storage, RNVWD stores 12.5% sodium hypochlorite with no dilution upwards of six months before refill. The treatment facility is stored in a secure shed adjacent to Well 01, and includes an eye wash station for emergencies. Each well has its own chlorine injection supplied by the centralized treatment storage shed adjacent to Well 01. As a safety precaution, an eye wash station is located at each well site.

2.3.2 NSF Certification

The disinfection and oxidation chemical stored on site is 1087 Sodium Hypochlorite 9. The Division does not have record of this product to be NSF/ANSI 60 Certified per 22 CCR §64590, and RNVWD will need to provide record of the NSF certification.

2.3.3 Equipment Specifications

The Prominent control, chlorine analyzer, and chemical metering pumps inject chlorine through polyethylene black tubing downstream of the well's check valve. The operator stated the target residual fed to the well head is 1.5 mg/L free chlorine.

2.4 Storage

RNVWD has two storage tank locations, 1 surge tank, and one hydropneumatic pressure tank. They are as follows:

Table 2.4 Storage Facilities

Name	Location	Storage Capacity	Description
Surge Tank	Well 1	5,500 gallons	Pressure Tank
Tank 01	Station Site 3	300,000 gallons	Coated Steel (2004)
Tank 02	Station Site 4	300,000 gallons	Coated Steel (2004)
Pressure Tank	Station Site 4	5,500 gallons	Pressure Tank

(See pictures recorded in Appendix C)

2.5 Distribution System

2.5.1 History and Materials

The RNVWD distribution system is constructed on approximately 22 square miles in the rural hills of north Vacaville, serving 382 service connections across six pressure zones. Water is delivered through approximately 40.3 miles of water mains ranging from 4 inches to 12 inches in diameter, consisting of mostly Class 150 and 200 PVC piping. Security for the distribution system is adequate, as it includes chain linked fences, locked pump sheds, and storage tanks with locked ladders reducing risk of unauthorized entry, theft, or vandalism.

2.5.2 Pump Facilities

The well pumps are operated by the tank level controllers and operate in series to supply the distribution system. During sample collection Well 02 pumps to waste as an adjacent farmer utilizes the water for irrigation purposes; therefore, no wastewater (NPDES) permit is required. Throughout the distribution system the pressure range varies between 60 and 130 psi due to terrain. The elevation in the system varies from 170 feet to 980 feet above sea level.

Table 2.5.2 Finished Water Pump Facilities

Name	Supply	Number of Pumps	Capacity (gpm)
Well Sources	Zone 1	2 – 75 hp	500 each
Booster Station 3	Zone 3	2 – 30 hp	250 each
Booster Station 4	Zone 5	2 – 20 hp	250 each
Booster Station 5	Zone 6	2 – 5 hp	65 each

Finished water pumping stations in the distribution system are adequate, with each facility having at least two pumps. The pumps can alternate, but can be activated to pump simultaneously to meet peak demands.

RNVWD utilizes supervisory control and data acquisition (SCADA) computer system to continuously monitor and remotely operate the system as needed. This feature allows the system to set pressure parameters throughout the distribution system to alarm in case of malfunction requiring further investigation.

2.5.3 Pressure Zones

The distribution system pressure zones, because of the steep elevation changes in the service area terrain, are supplied by pumped and gravity fed supply lines from station sites 3 and 4. The number of service connections supplied in each zone is unavailable.

Table 2.5.3 Pressure Zones

Name	Begin	End	Description
Zone 1	Well Sources	Station Site 3	100-120 psi
Zone 2	Station Site 3	Service Area	Gravity Feed to English Hills
Zone 3	Station Site 3	Station Site 4	Lifted by Booster Station 3
Zone 4	Station Site 4	Service Area	Gravity Feed to Steiger Hill
Zone 5	Station Site 4	Station Site 5	Lifted by Booster Station 4
Zone 6	Station Site 5	Service Area	Lifted by Booster Station 5

**See Appendix B & C – Schematic by Zone & Station Inspection Photos*

Pressure regulating valves are installed and maintained at each residential service connection to ensure a delivery pressure range of 40-80 psi. Additionally, RNVWD contains four pressure reducing valves located in Zone 2 supplying the greatest number of service connections along the English Hills service area. (See Appendix B)

2.5.4 Cross Connection Control

RNVWD is required by Title 17, Section 7584 of the California Code of Regulations (17 CCR §7584) to implement a cross-connection control program. RNVWD has a comprehensive cross-connection control program including: operating rules, surveys, backflow protection devices, personnel trained, annual backflow prevention device testing, and records maintenance. In the 2016 electronic Annual Report the AWWA certified specialist, Eric Trites, was recorded to have completed the cross-connection control survey on August 1, 2016.

2.5.5 Certified Operators

In accordance with 22 CCR §64413.3, RNVWD is classified as a D1 level distribution system. RNVWD meets the distribution system staff certification requirements of 22 CCR §64413.7 by contracting at least one D1 designated chief operator, and at least one D1 designated shift operator whom are available to be contacted within one hour.

Table 2.5.5 Certified Operators

Name	Title/ Certification Grade	Expiration Date/ Number
Joshua Hendrickson	Contract Chief Operator / D4	4/01/2019 / 38478
Justin Noutary	Contract Shift Operator / D4	02/01/2018 / 33857
Sue Murphy	WQ Specialist/ D5	8/01/2019 / 28222

2.6 Water Quality & Monitoring

2.6.1 Distribution System Monitoring

2.6.1.1 Total Coliform Rule

The minimum required distribution system total coliform sampling frequency for RNVWD is one monthly sample based upon population data. RNVWD currently collects two samples per month. The review of bacteriological data from the past year indicates that the water system is in compliance with bacteriological quality requirements, 22 CCR §64423.

2.6.1.2 Disinfectant and Disinfection Byproducts Rule (D/DBP)

RNVWD is required by 22 CCR §64534.4 to sample for chlorine residual at the same time and location as distribution system total coliform sampling. The first quarter of 2017 running annual average (RAA) for chlorine residual of 0.64 mg/L, which is well below the maximum residual disinfectant level (MRDL) of 4.0 mg/L.

RNVWD is a schedule 4 system for the purpose of State 2 D/DBPR. The latest compliance monitoring plan submitted to the Division in 2013 is current and requires dual TTHM/HAA5 sampling from one location annually. RNVWD has met the sampling requirements and the 2016 annual sample results were 9.9 ug/L and 0.0 ug/L respectively for TTHM and HAA5 which have maximum contaminant levels (MCL) of 80 ug/L and 60 ug/l respectively.

2.6.1.3 Groundwater Rule

USEPA promulgated the Ground Water Rule (GWR) in October 2006. Beginning in December 1, 2009, RNVWD is required to conduct triggered source water monitoring whenever a distribution system TCR sample is total coliform positive. Triggered source water monitoring involves sampling directly from the well head for the presence of E. coli bacteria prior to chlorination treatment for all wells that were supplying the system at the time of any total coliform positive distribution system sample. RNVWD has included the monitoring requirements for the Groundwater Rule in its Bacteriological Sample Siting Plan (BSSP).

2.6.1.4 Lead Copper Rule

RNVWD has completed initial and subsequent monitoring for lead and copper within the distribution system during the years of 2003, 2004, 2005, 2006, 2009, 2012, 2015. The current sampling frequency of triennial sampling reported the 2015's results for the 90th percentiles to be 0.0 mg/L and 0.15 mg/L respectively for lead and copper which have 90^{th} percentile action levels of 0.015 mg/L and 1.3 mg/L respectively. Based on these results, the water system has reduced sampling to once every three years at 5 (five) locations in accordance to 22 CCR §64675.5 (a)(1). The next sampling event should be scheduled during the months of June, July, August, and no later than September 30, 2018. Please submit the results to the Division as soon as they become available.

2.6.2 Source Monitoring

Due to high arsenic levels, RNVWD continues to use Well 02 for emergency standby uses only, in accordance with 22 CCR §64414. A planning study is expected to be completed at the beginning of 2018 with options for activating Well 02 for normal operation.

2.6.2.1 General Mineral, General Physical (GMGP)

RNVWD sampled Well 01 and Well 02 for GMGP in 2016 with no significant detections. Next sampling event should be scheduled for Well 01 before **October 31, 2022**.

2.6.2.2 Inorganic Chemicals (IOC)

RNVWD sampled Well 01 for IOC in 2016 reporting only three results above the Detection Level for Purposes of Reporting (DLR) including: Arsenic at 4.2 ug/L, hexavalent chromium at 3.9 ug/L, and fluoride at 0.35 mg/L, which carry DLR's of 2 ug/L, 1 ug/L, and 0.1 mg/L respectively. Well 02 reported DLR exceedances of hexavalent chromium, and fluoride as 3.2 ug/L and 0.21 mg/L respectively. Well 02 reported an arsenic sample result of 12 ug/L exceeding the MCL of 10 ug/L. Next sampling event should be scheduled for Well 01 before **October 31, 2019**.

2.6.2.3 Nitrate/Nitrite

Nitrate is considered an acute health risk and groundwater sources are required to be sampled annually in accordance with 22 CCR §64432.1 (a). The State Database shows that the latest sampling for Nitrate at Well 01 and Well 02 was performed in 2016 reporting results of 0.0 mg/L. Next sampling for Nitrate should be scheduled at Well 01 before **October 31, 2017.**

RNVWD sampled for Well 01 for Nitrite in 2016 reporting a result of 0.0 mg/L. Next sampling event should be scheduled for Well 01 before **October 31, 2019**.

2.6.2.4 Synthetic Organic Chemicals (SOC)

RNVWD sampled Well 01 and Well 02 for SOCs in 2014, and none were detected. According to the Division's records, the SOC sampling has been completed as required including the four consecutive quarters sampled in 2005 with no detections, and is eligible to receive waivers for SOC sampling for the periods of 2017-2019 if written request is received by the Division. Unless request is received, the next sampling event for SOC should be collected and analyzed for all SOC chemical constituents at either Well 01 before **October 31, 2017.**

2.6.2.5 Volatile Organic Chemicals (VOC)

RNVWD sampled for VOC at Well 01 in 2016, and at Well 02 in 2013 with not detected. According to the Division's records, VOC sampling has been completed as required including the four consecutive quarters sampled in 2004 with no detections, and is eligible to receive waivers for VOC sampling for the periods of 2017-2019 if written request is received by the Division. Unless request is received, the next sampling event for VOC should be collected and analyzed no later than October 31, 2019 at Well 01.

2.6.2.6 Radiological Monitoring

RNVWD analyzed its source for Gross Alpha by sampling Well 01 in 2014 to comply with monitoring requirements for Radiological Monitoring in accordance to 22 CCR §64442 (b). The Gross Alpha results were below the DLR. The next sampling event should be scheduled in 2023 at Well 01 and Well 02.

A water quality monitoring schedule is included in Appendix A.

2.7 Management and Reporting

2.7.1 Description

RNVWD is a Community Services District formed under Government Code Section 61000 et. Seq. to develop and provide a public water distribution system. RNVWD is managed by the all-volunteer elected Board of Directors, whom reside within the District. The water operation is managed by RG West Builder's, Gordon Stankowski, as the General Manager who reports directly to the board. The physical operation and maintenance of the water system is contracted with Solano Irrigation District (SID) providing all required functions to keep the system in running order.

2.7.2 Organization and Personnel

Table 2.7.2 PWS Personnel

Name	Title	Description & Contact
Gordon Stankowski	General Manager	Company - R.G. West Builders, RNVWD Contact (707) 447-8420
Solano Irrigation District	Contracted Operators	Facility Phone (707) 448-6847
Cary Keaten	SID General Manager	Direct Line (707) 455-4009

2.7.3 Operations Plan

The current RNVWD operations plan is not on record with the Division. The operations plan shall consist of a description of the treatment plan performance monitoring program, equipment maintenance program, how and when each unit process is operated, procedures used to determine chemical dose rates, and reliability features. There should also be included in the operations plan the frequencies of generator exercise, valve exercise, and flushing of the system.

2.7.4 Annual Reports (eAR)

Per Section 116530 of the California Health & Safety Code, Annual Reports are required to submit reports detailing system activities and changes made during the year. RNVWD submits Annual Reports to the Division promptly by April 30 each year.

2.7.5 Consumer Confidence Report

As specified in 22 CCR §64480, RNVWD is required to prepare and distribute an annual Consumer Confidence Report by July 1st of each year. The system has historically met the deadline to submit the consumer confidence report to its consumers and the Division.

2.7.6 Emergency Notification Plan

Per Section 116460 of the California Health & Safety Code, an Emergency Notification Plan is required to provide immediate notice to the customers of the public water system. RNVWD provided a plan during the inspection dated 3/27/17 and adequately fulfills the regulation requirements.

2.7.7 Emergency Disaster Response

A recently developed comprehensive Emergency Response Plan dated 1/3/2017 was provided to the Division during the inspection. The plan contains components that assist in mitigating and recovering from a wide range of events that may occur in RNVWD.

III. CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

RNVWD continues to be capable of meeting the requirements of the California Safe Drinking Water Act and provides a reliable and adequate supply of drinking water. The water system complies with regulations and permit conditions.

3.2 Deficiencies

The following items are required to comply with the drinking water regulations:

1. The Bacteriological Sample Siting Plan (BSSP) notes that the distribution system consists of five zones; however, during the inspection it was reported that a sixth zone exists. This zone must be integrated into an updated version of the 2015 BSSP. RNVWD must update the BSSP and submit a final plan to the Division by **September 1, 2017.**

2. At the time of the survey, Division staff could not verify whether or not the 1087 Sodium Hypochlorite 9 solution manufactured by Sierra Chemical, and used for by RNVWD and SID for disinfection purposes, is NSF 60 certified for use in drinking water treatment. Please provide proof of NSF 60 certification for the sodium hypochlorite solution to the Division by **July 31, 2017**.

Prepared by

Stephen Burke 6/6/17

Stephen Burke, WRCE — Date

Reviewed by

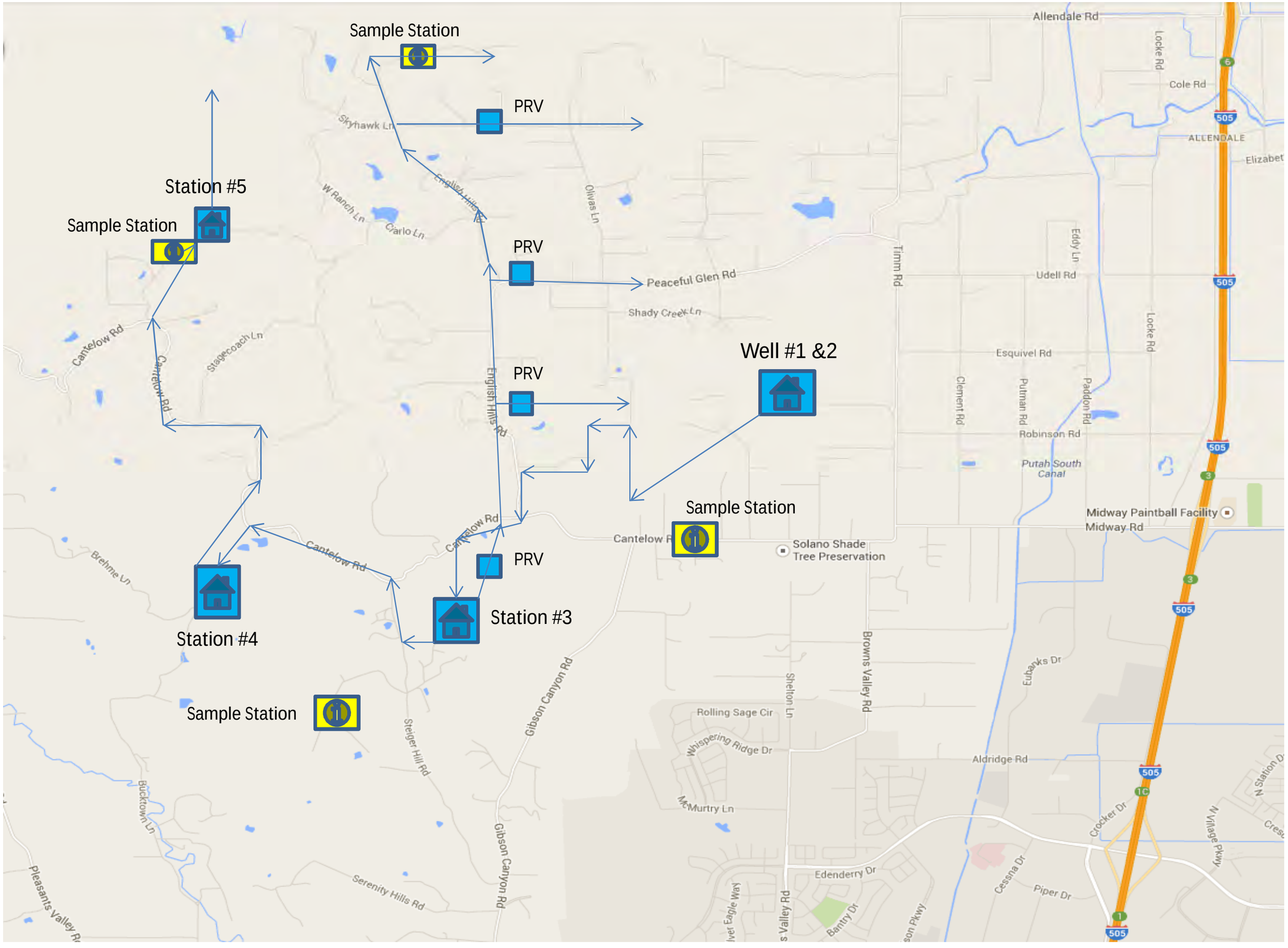
6/12/17

Marco Pacheco, P.E., District Engineer — Date

Summary of Source Monitoring Requirements

Rural North Vacaville PWS #4810013 **Community Water System (CWS)**

CHEMICAL CATEGORIES *(Monitoring Frequencies for Groundwater System)*	*Frequency*	*Last Sample Dates*		DUE Dates	
		Well 01	**Well 02**	**Well 01**	**Well 02 (Stand-by)**
Nitrate	Annual	2016	2016	2017 (Oct)	2025
Nitrite	3 years	2016	2016	2019	2025
Inorganics	3 years	2016	2016	2019	2025
Radioactivity	9 years	2014	2014	2023	2023
Regulated VOCs	3 years	2016	2013	2019?	2022
Regulated SOCs	3 years	2014	2014	2017?	2023
Secondary - GP	6 years	2016	2016	2022	2025
General Chemistry	6 years	2016	2016	2022	2025


Sample Station
PRV
Station #5
Sample Station
PRV
Peaceful Glen Rd
Shady Creek Ln
PRV
Well #1 &2
Sample Station
PRV
Station #3
Station #4
Sample Station
Allendale Rd
Locke Rd
Cole Rd
ALLENDALE
Elizabet
Eddy Ln
Udell Rd
Timm Rd
Esquivel Rd
Clement Rd
Putman Rd
Paddon Rd
Robinson Rd
Putah South Canal
Midway Paintball Facility
Midway Rd
Solano Shade Tree Preservation
Skyhawk Ln
W Ranch Ln
Carlo Ln
Olivas Ln
English Hills Rd
Cantelow Rd
Stagecoach Ln
Brehme Ln
Bucktown Ln
Steiger Hill Rd
Gibson Canyon Rd
Serenity Hills Rd
Pleasants Valley Rd
Rolling Sage Cir
Whispering Ridge Dr
McMurtry Ln
Shelton Ln
Browns Valley Rd
Aldridge Rd
Edenderry Dr
Bantry Dr
Eubanks Dr
Crocker Dr
Cessna Dr
Piper Dr
N Village Pkwy
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July 5, 2017

State Water Resources Control Board
Division of Drinking Water- San Francisco District
850 Marina Bay Parkway, Bldg. P. 2nd Floor
Richmond, CA 94804-6403
Attn: Marco Pacheco

RE: Response to Sanitary Survey Findings – Rural North Vacaville Water District (PWS No. 4810013)

Dear Mr. Pacheco:

Solano Irrigation District (SID; District) is in receipt of your correspondence regarding the Sanitary Survey Findings for Rural North Vacaville Water District (PWS No. 4810013) dated June 12, 2017. The intent of this letter is to reply to the directives contained in the aforementioned correspondence. Presented below are the items from the Sanitary Survey findings with SID's response following.

Item 1: The Bacteriological Sample Siting Plan (BSSP) notes that the distribution system consists of five zones; however, during the inspection it was reported a sixth zone exists. This zone must be integrated into an updated version of the 2015 BSSP. RNVWD must update the BSSP and submit a final plan to the Division by **September 1, 2017.**

Response: The system does NOT have six pressure zones. The distribution system Operation Description, System SCADA schematic, and maps were reviewed by Joshua Hendrickson, and Jeff Sullivan in addition to a field check. The 2015 BSSP has been updated to clarify which existing pressure zone is represented by the existing routine sample stations. There has been a 5th routine sample station added so each pressure zone now has a representative bacteriological routine sample. There is an updated map included.

Item 2: At the time of the survey, Division staff could not verify whether or not the 1087 Sodium Hypochlorite 9 solution manufactured by Sierra Chemical, and used for RNVWD and SID for disinfection purposes, is NSF 60 certified for use in drinking water treatment. Please provide proof of NSF 60 certification for the sodium hypochlorite solution to the Division by July 31, 2017.

Response: Sierra Chemical is no longer the supplier of the Sodium Hypochlorite. Each year a group of local water agencies go to bid on many chemicals used, and the current supplier for the 12% Sodium Hypochlorite is Univar, 2256 Junction Avenue, San Jose, 408-435-8700.

Univar has supplied the NSF 60 certification. When a manufacturer of 12% Sodium Hypochlorite changes in the future, the most current NSF 60 certification will be updated.

Should you have any questions or need further clarification on any of the information provided please feel free to contact me at either, murphys@sidwater.org or (707) 455-4021. Thank you.

Sincerely,

Sue Murphy
Water Quality Specialist

cc: Gordon Stankowski, RNVWD General Manager
cc: Terry Schmidtbauer, Solano County Environmental Health Department

Rural North Vacaville Water District #4810013
Bacteriological Sample Siting Plan 2017

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 2016 delivered over 45.34 million gallons of drinking water to 382 metered service connections serving approximately 1,081 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, and one backflow device for Routine sampling of the distribution system. The sample locations are listed below:

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

#3 4380 Cantelow Road (ss)– 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 (ss)– Steiger Hill Road to Joslyn Lane, the sample station on the right

#5 3749 Ciarlo Lane (ss) – English Hills Road to Ciarlo Lane, go way up the hill to the end

#6 3771 Ciarlo Lane (bf) – Backflow 15 yards south of the driveway

The routine compliance locations will be sampled as follows:

#2, and #3 one month, #4, #5, and #6 the next month. We will alternate by month between these 2 groups.

Pressure zone	Sample location
1	#3 4380 Cantelow Road
2	#2 3955 Estate Drive
3	#4 3859 Joslin Lane
4	#6 3771 Cantelow Road
5	#5 3749 Ciarlo Lane

Sampling Procedures

All compliance samples will be collected by staff certified by the DDW as a Distribution System Operator, or trained samplers from BSK Laboratory.

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 samples will be analyzed for Presence/Absence of total coliform and E. coli.

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 take an additional 100 ml sample and request the laboratory analyze the second sample for Heterotrophic Plate Count (HPC).

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, BSK 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 DDW if SID staff cannot 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 DDW District Engineer Marco Pacheco at 510-620-3454 office phone or cell phone 510-421-8382.

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 BSK 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. BSK Laboratory is located at 3140 Gold Camp Drive Suite 160, Sacramento, CA 95670, the phone number is 916-853-9293, ext. 110. 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.

MONTHLY SUMMARY OF REVISED TOTAL COLIFORM RULE DISTRIBUTION SYSTEM MONITORING

(including triggered source monitoring for systems subject to the Groundwater Rule)

System Name	System Number
Sampling Period Month	Year

	Number Required	Number Collected	Number Total Coliform Positives	Number E.coli Positives
1. Routine Samples (see note 1)				☐
2. Repeat Samples following samples that are Total Coliform Positive and *E.coli* **Negative** (see notes 10 and 11)				☐
3. Repeat Samples following Routine Samples that are **Total Coliform Positive** and ***E. coli* Positive** (see notes 10 and 11)			☐	☐
4. Treatment Technique (TT)/MCL Violation Computation for Total Coliform/*E. coli* Positive Samples a. Totals (sum of columns)				☐
b. If 40 or more samples collected in month, determine percent of samples that are total coliform positive [(total number positive/total number collected) x 100] =		%		
c. Did the system trigger… a **Level 2** Assessment TT? (see notes 2, 3, 4, 5 and 6 for trigger info)			☐ **Yes** ☐ **No**	
If a Level 2 Assessment is triggered, see note 8 below.				
a **Level 1** Assessment TT? (see note 7 for trigger info)			☐ **Yes** ☐ **No**	
If a Level 1 Assessment is triggered, see note 9 below.				
5. Triggered Source Samples per Groundwater Rule (see notes 12 and 13)				☐

6. Invalidated Samples

(Note what samples, if any, were invalidated; who authorized the invalidation; and when replacement samples were collected. Attach additional sheets, if necessary.)

7. Summary Completed By:

Signature	Title	Date

NOTES AND INSTRUCTIONS:

1. Routine samples include:
   a. Samples required pursuant to 22 CCR Section 64423 and any additional samples required by an approved routine sample siting plan established pursuant to 22 CCR Section 64422.
   b. Extra samples are required for systems collecting less than five routine samples per month that had one or more total coliform positives in previous month;
   c. Extra samples for systems with high source water turbidities that are using surface water or groundwater under direct influence of surface water and do not practice filtration in compliance with regulations;
2. Note: For a repeat sample following a total coliform positive sample, any *E.coli* positive repeat (boxed entry) **constitutes an MCL violation and requires immediate notification to the Division** (22, CCR, Section 64426.1).
3. Note: For repeat sample following a *E.coli* positive sample, any total coliform positive repeat (boxed entry) **constitutes an MCL violation and requires immediate notification to the Division** (22, CCR, Section 64426.1).
4. Note: Failure to take all required repeat samples following an *E. coli* positive routine sample (22, CCR, Section 64426.1) **constitutes an MCL violation and requires immediate notification to the Division** (22, CCR, Section 64426.1).
5. Note: Failure to test for *E. coli* when any repoeat sample tests postive for total coliform (22, CCR, Section 64426.1) **constitutes an MCL violation and requires immediate notification to the Division** (22, CCR, Section 64426.1).
6. Note: Second Level 1 treatment technique trigger in a rolling 12-month period.
7. Total coliform Treatment Technique (TT) Violation **(Notify Department within 24 hours of TT violation):**
   a. For systems collecting less than 40 samples, if two or more samples are total coliform positive, then the TT is violated and a Level 1 Assessment is required.
   b. For systems collecting 40 or more samples, if more than 5.0 percent of samples collected are total coliform positive, then the TT is violated and a Level 1 Assessment is required.
8. Contact the Division as soon as practical to arrange for the division to conduct a Level 2 Assessment of the water system. The water system shall complete a Level 2 Assessment and sumbit it to the Division within 30 days of learning of the trigger exceedance.
9. Conduct a Level 1 Assessment in accordance with as soon as practical that covers the minimum elements (22, CCR, Section 64426.8 (a), (2). Submit the report to the Division within 30 days of learing of the trigger exceedance.
10. Positive results and their associated repeat samples are to be tracked on the Coliform Monitoring Worksheet.
11. Repeat samples must be collected within 24 hours of being notified of the positive results. For systems collecting more than one routine sample per month, three repeat samples must be collected for each total coliform positive sample. For systems collecting one or fewer routine samples per month, four repeat samples must be collected for each total coliform

COLIFORM MONITORING WORKSHEET

(COMPLETED FOR POSITIVE ROUTINE SAMPLES, ALL REPEAT SAMPLES, AND ALL TRIGGERED SOURCE SAMPLES)

Page ________ of ____________

Report Month __________ Year__________

Routine Samples [9]			Repeat Samples [6]					Triggered Source Samples [8]			
					Coliform Results (Check one box)						
TC+ Sample Date	TC+ Sample Site ID	[12]*E. coli* Results	Repeat Collection Date	Repeat Sample Site IDs [10]	TC-	TC+ BUT *E. coli*-	TC+ AND *E. coli*+	Source Sample Date	Groundwater Source(s) Sampled	[12]TC Results	[11,12]*E. coli* Results
		(+ / -)		1						(+ / -)	(+ / -)
				2						(+ / -)	(+ / -)
				3						(+ / -)	(+ / -)
				4						(+ / -)	(+ / -)
		(+ / -)		1						(+ / -)	(+ / -)
				2						(+ / -)	(+ / -)
				3						(+ / -)	(+ / -)
				4						(+ / -)	(+ / -)
		(+ / -)		1						(+ / -)	(+ / -)
				2						(+ / -)	(+ / -)
				3						(+ / -)	(+ / -)
				4						(+ / -)	(+ / -)
		(+ / -)		1						(+ / -)	(+ / -)
				2						(+ / -)	(+ / -)
				3						(+ / -)	(+ / -)
				4						(+ / -)	(+ / -)
		(+ / -)		1						(+ / -)	(+ / -)
				2						(+ / -)	(+ / -)
				3						(+ / -)	(+ / -)
				4						(+ / -)	(+ / -)
		(+ / -)		1						(+ / -)	(+ / -)
				2						(+ / -)	(+ / -)
				3						(+ / -)	(+ / -)
				4						(+ / -)	(+ / -)
		(+ / -)		1						(+ / -)	(+ / -)
				2						(+ / -)	(+ / -)
				3						(+ / -)	(+ / -)
				4						(+ / -)	(+ / -)
		(+ / -)		1						(+ / -)	(+ / -)
				2						(+ / -)	(+ / -)
				3						(+ / -)	(+ / -)
				4						(+ / -)	(+ / -)
		(+ / -)		1						(+ / -)	(+ / -)
				2						(+ / -)	(+ / -)
				3						(+ / -)	(+ / -)
				4						(+ / -)	(+ / -)

Comments:

NOTES AND INSTRUCTIONS:

6. Repeat samples must be collected within 24 hours of being notified of the positive results. For systems collecting more than one routine sample per month, three repeat samples must be collected for each total coliform positive sample. For systems collecting one or fewer routine samples per month, four repeat samples must be collected for each total coliform positive sample.
8. For triggered sample(s) required as a result of a total coliform routine positive sample, an *E.coli*, enterococci, or coliphage positive triggered sample (boxed entry) **requires immediate notification to the Department, Tier 1 public notification, and corrective action.**
9. Also include any data for positive samples that occurred in the previous month that led to repeat monitoring occurring in the reporting month. Include location and indicate if the routine sample was either positive or negative for *E.coli* or Fecal Coliforms.
10. For systems serving ≤ 1000 persons that collect one or fewer routine samples per month, a triggered source water sample may be used as the fourth repeat, as noted in an approved plan, **if E. coli was the indicator used.** Show result in GW source column too.
11. The Department recommends using *E. coli* (see note 8). If enterococci or coliphage is used, note which in the comment box below
12. Circle the appropriate result.

Abbreviations: TC = Total Coliform, FC = Fecal Coliform, EC = *E. coli*

QUARTERLY SUMMARY OF RAW GROUNDWATER COLIFORM MONITORING

Samples must be taken prior to chlorination

Water System Name

Water System Number

Sampling Period:

Month

Year

Well Name	Status (On/Off)	Sample Time & Date	Total Coliforms (P/A, CFU or MPN)	*E. coli (P/A, CFU or MPN)*

SEPT. 2016 –
Revised Total
Coliform Rule

Monthly Summary of Distribution System Coliform Monitoring
(Including triggered source monitoring for systems subject to the Groundwater Rule)

INSTRUCTIONS FOR COMPLETING THE REPORTING FORM

Begin by filling in the blanks at the top of the form for system name, system number, sampling month, and year.

1. Routine Samples:

Number Required: This is the number of bacteriological samples the water system is required to collect based on a Division-approved Total Coliform Sample Siting Plan.

Routine samples include:

- Samples required by Section 64422 and 64423.
- Extra samples required for systems collecting less than five routine samples each month that had one or more total coliform positives in the previous month, as required by Section 64424.
- Extra samples for systems with high source water turbidities that are using surface water or groundwater under the direct influence of surface water and do not practice filtration compliant with the regulations.

***NOTE**: All other samples collected during the sampling period are one of the following:*
- *repeat samples, to be reported as described below;*
- *special samples, which should be labeled as such, are not used for compliance determinations, and should not be included on the form; or*
- *Groundwater Rule triggered samples, to be reported as described below and only required for system(s) subject to the triggered monitoring requirements of the Groundwater Rule.*

Number Collected: This number should be the same as the "Number Required". If less, the system is not compliant.

Number of Total Coliform Positives: This includes only total coliform positives from the required routine samples.

***NOTE**: All total coliform positive results and their associated repeat samples are to be tracked on the "Coliform Monitoring Worksheet".*

Number of *E. Coli* Positives: This includes only the number of *E. Coli* positives from the routine samples collected during the month.

2. Repeat Samples Following Total Coliform Positive Samples:

This refers to the total number of repeat samples collected for total coliform positives during the month.

***NOTE**: All repeat samples must be collected within 24-hours of being notified of a total coliform positive result.*

Number Collected:
- For a system that normally collects more than one sample a month, this number should equal three times the number of total coliform positives in line 4(a), unless the system fails the MCL.
- For a system that normally collects one or fewer samples per month, this number should equal four times the number of total coliform positives in line 1.

In either case one of the repeat samples must be collected from the sample tap where the original total coliform-positive was taken. Additionally, one sample must be collected upstream and one sample must be collected downstream, within five service connections (unless there is no upstream and/or downstream connection. Alternatives must be approved by the State Board).

Number of Total Coliform Positives: This includes only total coliform positives resulting from required repeat samples following routine and repeat total coliform positives.

Number of *E. coli* Positives: This includes only the *E. coli* positives resulting from required repeat samples following routine or repeat sample total coliform positives in line 1. If there are one or more *E. coli* positives following any total coliform positive, this constitutes an acute MCL violation.

3. Repeat Samples Following *E. coli* Positive Routine Samples:

This means the total number of repeat samples collected, following a positive *E. coli* test of a routine sample, after repeat samples in line 2 have been collected.

NOTE: *This set of samples is only collected if a sample in line 2 is E. Coli positive.*

Number Collected: This is the total number of repeat samples collected following an *E. coli* positive result in the first repeat sample set. This number should equal three times the number of *E. coli* routine positives in line 1.

Number of Total Coliform Positives: This is the total number of total coliform positives resulting from the repeat sample set. If this number is one or greater it constitutes an acute MCL failure.

Number of *E. coli* Positives: This is the total number of *E. coli* positives resulting from the repeat sample set. If this number is one or greater it constitutes an acute MCL failure.

4. Level 1 Assessment Computation for Total Coliform Positive Samples:

a. Totals (Sum of columns): Add the numbers in the vertical columns and fill in the corresponding blank for the "Number Collected" and the "Number of Total Coliform Positives".

NOTE: *For systems collecting less than 40 samples per month, if two or more samples are total coliform positive, then a Level 1 Assessment is triggered and the State Board must be notified on that day. If the State Board is closed, the State Board must be notified within 24 hours.*

b. If 40 or more samples are collected each month, determine the percent of samples that are total coliform positive.

$$\frac{\text{Total number of total coliform positive samples}}{\text{Total number of samples collected}} \times 100 = \_\_\_\%$$

Place the percent of total coliform positive samples in the blank on line 4b.

NOTE: *For systems collecting more than 40 samples per month, if more than 5 percent of the samples are total coliform positive, then a Level 1 Assessment is triggered and the State Board must be notified on that day. If the State Board is closed, the State Board must be notified within 24 hours.*

c. Is system in compliance with E. coli MCL? [ ] yes [ ] no

- If the box on line 2 for "Number of *E. coli* Positives" has a number of one or more, then the system is not compliant.
- If either box on line 3 for the "Number of Total Coliform Positive" or "Number *E. coli* Positives" has a number of one or more, then the system is not compliant.

Is system in compliance with the monthly Treatment Technique Trigger? [ ] yes [ ] no

- For a system collecting 40 samples or less, if in 4(a) above, the system has two or more samples that are total coliform positive, then the system is required to conduct a Level 1 Assessment.

• If, in 4(b) above, the system has more than 5 percent of the total number of samples collected for the month which are Total Coliform Positive, then the system is required to conduct a Level 1 Assessment.

5. Source Samples Triggered by Routine Samples that are Total Coliform Positive:

This applies **only** to systems subject to triggered source monitoring under the Groundwater Rule.

NOTE: *• Triggered source samples must be collected within 24 hours (before or after) of being notified of distribution system total coliform positive results.*
*• The triggered source sample indicator used must be either E. coli, enterococci, or coliphage (i.e. **not** fecal coliform). **The State Board recommends using E. coli.***
• Triggered source samples are required for routine total coliform positive samples taken pursuant to Section 64422 or 64423 only. "Extra" samples, such as those taken pursuant to Section 64424 do not trigger source monitoring.
• All triggered monitoring results are to be tracked on the "Coliform Monitoring Worksheet".
*• For systems serving ≤ 1000 persons, a triggered source water sample may be used as the fourth repeat **if E. coli was the indicator used**.*

• In the blank under "Number Collected", enter the total number of triggered source samples collected. The value entered should be at least one of the following:

- For systems with no Department-approved representative monitoring plan, the number collected should be equal to ("Number Total Coliform Positives" in line 1) x (the number of groundwater sources operating when routine distribution samples were taken).
- For systems with a Department-approved Groundwater Rule representative monitoring plan, the number collected should be equal to the number indicated in the approved plan, with the understanding that a source sample must be taken for each routine distribution system total coliform positive.

• In the blank under "Number of Total Coliform Positives", put the total number of triggered source samples that were total coliform positive.

• In the box under "Number E. coli Positives" put the total number of triggered source samples that were *E. coli*, enterococci, or coliphage positive. If the number in the box is one or more, the system must immediately notify the Board, provide Tier 1 public notification, and perform corrective action.

6. Invalidated Samples:

If any samples were invalidated, note the following:
• which samples were invalidated;
• why they were invalidated;
• who authorized the invalidation; and
• when replacement samples were collected. Attach written, signed authorization from the lab and any additional sheets if necessary.

7. Summary Completed By:

Provide your signature, title, and the date in the blanks on the report.

Solano Irrigation District and ELAP certified Laboratory Communications Procedures for: Coliform Positive or Invalidated Results from Routine, Repeat, or Replacement Samples

The following procedure applies to Solano Irrigation District's (SID) Routine, Repeat, or Replacement samples from our public water systems. SID staff will indicate on each sampling slip whether the sample qualifies as Routine, Repeat, Replacement, or Other.

Within 24 hours of results from a Routine, Repeat, or Replacement sample, the lab must notify SID personnel **DIRECTLY (leave a phone message at each number called**, and continue calling until a person is contacted) if:

- Analytical results indicate the presence of total coliform, or E. coli. Or
- HPC is greater than 500 CFU/ml for any drinking water sample, OR
- A bacterial sample is invalidated due to a laboratory analytical interference problem.

During SID business hours Monday through Friday, 7:00 a.m.-3:30 p.m., excluding holidays, the following personnel may be reached by calling their office phone numbers first, then their cell phone numbers. If a SID contact is not available by phone at those numbers, please dial **707-673-6682** to reach the SID on call duty supervisor and let them know you are the lab calling with a water quality emergency.

In the event of an after hours sample invalidation or positive coliform result for a Routine, Repeat, or Replacement sample, within 24 hours the laboratory must notify **DIRECTLY (leave a phone message at each number called,** and continue calling until a person is contacted directly) one of the following SID contact persons.

BSK Lab Manager: Brenda Hamilton, **916-853-9293 ext. 110**, (916-825-0135 cell), She is at the Rancho Cordova Lab, 3140 Gold Camp Drive, Suite 160, Rancho Cordova, CA Brenda's email is bhamilton@bskinc.com More information about the BSK Lab can be found at the corporate website, www.bskassociates.com

Name	Title	Phone Office/ Cell		Evening
1. Sue Murphy	Water Quality Specialist	707-455-4021	707-249-6007	call cell
2. Justin Noutary	M&I Supervisor	707-455-4025	707-249-3071	call cell
3. Matthew Medill	W&P Superintendent	707-455-4012	707-260-9272	call cell

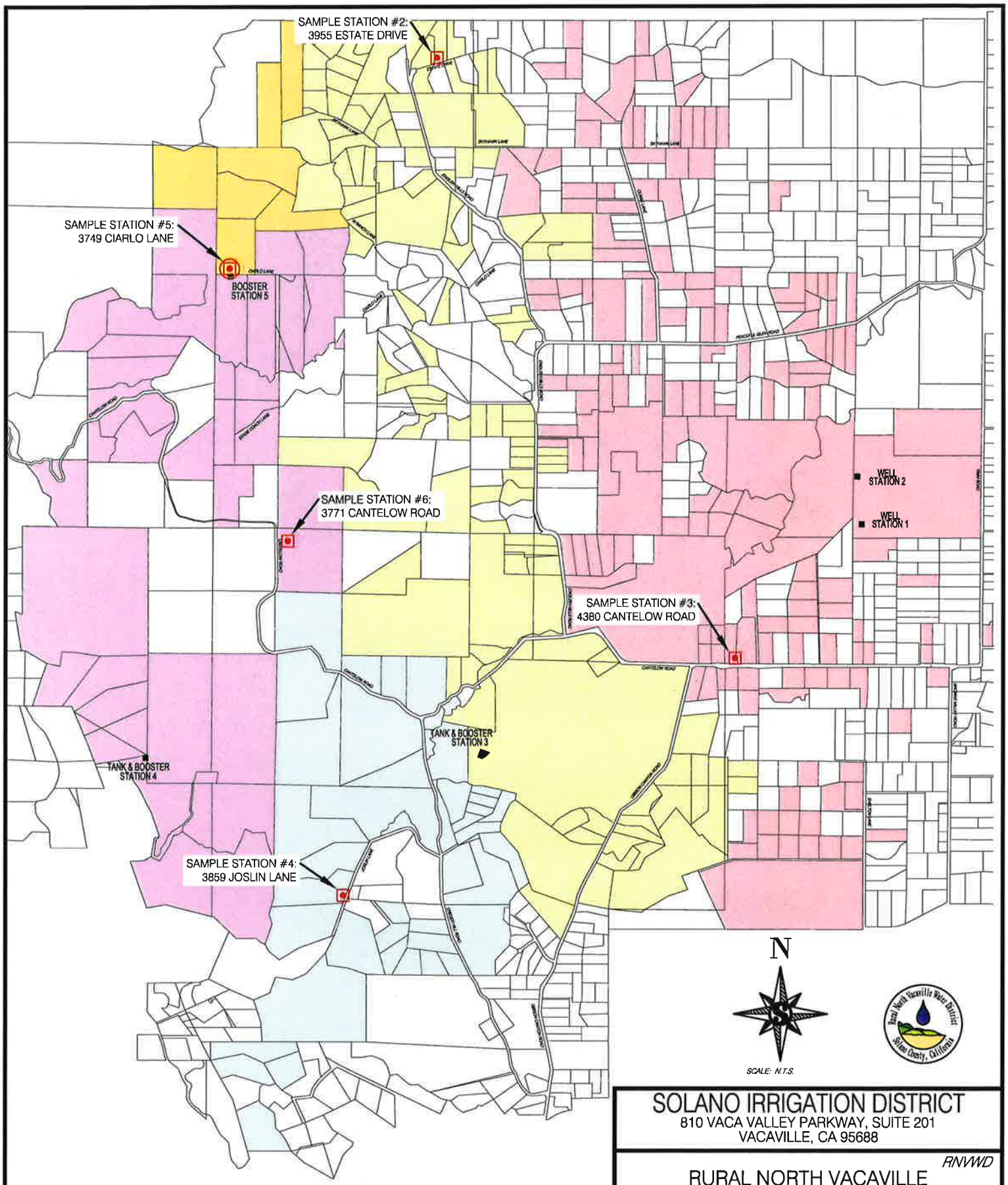
If the lab can not reach any of the designated SID personnel within 24 hours, the lab must contact the appropriate SWRCB Division of Drinking Water Engineer for the following public water systems.

Marco Pacheco	DDW District Engineer	510-620-3454	925-323-6131	call cell
Stefan Cajina	DDW Chief of N.CA	510-620-3452		

These instructions are for the following SID public water systems:

Rural North Vacaville WD #CA4810013

Updated 6/30/17



SOLANO IRRIGATION DISTRICT

810 VACA VALLEY PARKWAY, SUITE 201
VACAVILLE, CA 95688

RNVWD

RURAL NORTH VACAVILLE WATER DISTRICT SAMPLE STATION LOCATION MAP

Date:	06-29-2017	Work Order No.
Drawn By:	JS	CAD File: RNV SAMPLE STN MAP.DWG
Checked By:	SM	Dwg. No.

LotNo:MM216080

MM216080
L16927

K2 Pure Solutions

Certificate of Analysis

Product:	Sodium Hypochlorite 12.5
K2 Lot #:	170602-C1
Date of Manufacture:	6/2/2017

Characteristic:	Unit	Lower Limit	Upper Limit	Value
Sodium Hypochlorite (NaOCl)	wt%	12.5		12.7
Specific Gravity @ 20 deg C				1.193
Density @ 20 deg C	g/mL			1.190
Total Alkalinity (NaOH)	wt%	0.1	1.0	0.5
Sodium Carbonate (Na_2CO_3)	wt%	0.0	1.0	0.1
Iron (Fe)	ppm		1.0	<1.0
Nickel (Ni)	ppm		0.1	<0.1
Bromate (BrO_3)	mg/L		24	<10
Insoluble Matter	wt%		0.15	<0.15
Color				clear greenish yellow
Odor				mild chlorine odor
pH				12.5

Environmental Status:

RCRA List:	N/A
SARA 313 List:	N/A
California Prop 65 List:	N/A
EPA Registration Number:	88296-1; 88296-2
DOT Proper Shipping Name:	Hypochlorite Solutions, 8, UN1791, PGIII (RQ 100 Lbs) = 80 Gallons 12.5% Solution

Date of Delivery: 6/2/17

Shipper ID: _____

NSF Certified to NSF/ANSI 60

This product has been certified according to NSF/ANSI 60 at a maximum use level in drinking water of 84 mg/L

K2 Pure Solutions, 950 Loveridge Road – Pittsburg, CA 94565 – Phone 925-203-1199

ProductNo:796956
Annotation:

CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board
Division of Drinking Water

July 12, 2017

Ms. Sue Murphy
Water Quality Specialist
810 Vaca Valley Pkwy, STE 201
Vacaville, CA 95688

RE: Response to Sanitary Survey Findings – Rural North Vacaville Water District (PWS No. 4810013)

Dear Ms. Murphy:

The State Water Resources Control Board – Division of Drinking Water (DDW) has received your correspondence dated July 5, 2017, in response to our sanitary survey findings letter and report issued June 12, 2017. The Solano Irrigation District (SID) has promptly and adequately addressed the sanitary survey findings which required immediate attention. DDW has the following comments:

Bacteriological Sample Site Plan
DDW recognizes that SID does not have six pressure zones. SID has updated the BSSP to clarify pressure zone boundaries and has added a fifth routine sample station to provide adequate sample location distribution representative of each existing pressure zone. The updated BSSP meets the requirements 22 CCR §64422 and 40 CFR §141.853. DDW has reviewed and hereby approves the updated BSSP dated for 2017. Please begin bacteriological sampling for Federal Revised Total Coliform Rule and California Total Coliform Rule compliance according to the updated BSSP immediately.

NSF 60 Approved Sodium Hypochlorite
DDW confirms that SID is currently using NSF 60 approved 12% sodium hypochlorite manufactured by Univar. DDW appreciates SID supplying the updated product information. SID currently complies with 22 §64590 for the use of certified chemicals in water treatment.

If you have any questions or concerns, please contact me at (510) 620-3454 or at Marco.Pacheco@waterboards.ca.gov.

Sincerely,

Marco Pacheco, P.E.
San Francisco District Engineer
Division of Drinking Water