



GAVIN NEWSOM
GOVERNOR

JARED BLUMENFELD
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board
Division of Drinking Water

September 9, 2019

System No. 2210924

Supervisor Rosemarie Smallcomb,
Mariposa County Board of Supervisors – District 1
5100 Bullion Street
Mariposa, CA 95338

Dear Supervisor Smallcomb:

**RE: Expansion of the Yosemite West Service Area to Serve the YNP – Nature Bridge
Campus – Mariposa County**

The State Water Resources Control Board – Division of Drinking Water (DDW) is in receipt of your inquiry regarding the request from the Yosemite National Park (YNP) to provide water service to the Nature Bridge Campus in the Yosemite West portion of Mariposa County. The DDW has regulatory jurisdiction over the Yosemite West Water System (System No. 2210924) which includes ensuring the water system is providing an adequate amount of water meeting all primary and secondary drinking water standards. The purpose of this letter is to express the Division's support of projects leading to increased source capacity in the Yosemite West Water System and provide clarification on which portions of the regulations pertain to existing water systems.

The Division recently completed the sanitary survey report (dated September 4, 2019) for a sanitary survey completed on November 6, 2018. The sanitary survey report (enclosed) includes an evaluation on the existing source capacity of the Yosemite West Water System. Section 2.3 of the report identifies the average day during the maximum month as 34 gallons per minute. The maximum day demand (MDD) is estimated by applying a peaking factor of 1.5 to the average day demand during the maximum month resulting in a MDD of 54 gpm. Similarly, the peak hour demand is estimated by applying a peaking factor of 1.5 to the MDD resulting in a peak hour demand of 81 gpm for the Yosemite West Water System. The total source capacity for the single source of supply, Well No. 9, is 85 gpm. As such, the Division concluded that the Yosemite West Water System has adequate source capacity to supply water during average day demand, MDD and PHD periods. The system source capacity evaluation also includes available storage which equates to 347,500 gallons of available storage, thus increasing the overall source capacity of the Yosemite West Water System.

The Division does have the ability to require (per Section 64558, Title 22, California Code of Regulations) a source capacity planning study if it is determined that there is an existing or

E. JOAQUIN ESQUIVEL, CHAIR EILEEN SOBODA, EXECUTIVE DIRECTOR

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potential problem with the system's source capacity or a proposed expansion resulting in an expansion of the service area by more than 20 percent. Based on the most recent source capacity evaluation discussed above, the Division is not requiring a source capacity planning study at this time.

While the System has adequate source capacity to meet the average day demand, MDD and PHD periods, the Division has historically expressed concern about the single source of supply used to serve the Yosemite West Water System. The Yosemite West Water System is remotely located and proves to be challenging to get resources dispatched when there is a need due to a mechanical failure or other emergency. This concern was expressed in the 2012 Water Supply Permit (Special Provision No. 11). In response to the Division's concerns, Mariposa County established an agreement with a neighboring property owner for an emergency connection whereby an emergency line would be run from the neighboring property to the Yosemite Water storage tank. The Division accepted the arrangement for an emergency connection given the remote location of the Yosemite West Water System and the inability to find a location for a second water supply well. During an emergency, the County would implement extreme conservation measures and utilize the existing storage to meet demands until the repair could be made to the well or the connection to the emergency source of supply could be made.

Increasing Source Capacity:

The Division recognizes the challenges water systems, such as Yosemite West Water System, face when trying to site new wells. As such, source capacity is evaluated utilizing source capacity from all available wells and all available storage capacity. New community water systems must have a minimum of two water sources to ensure redundancy in new water system per the California Waterworks Standards (Section 64554 (c), Title 22, California Code of Regulations). Section 64554 (c) does not apply to the Yosemite West Water System given they are not applying for an initial water supply permit. As mentioned above, the source capacity for the Yosemite West Water System includes the 85 gpm from Well No. 9 as well as the 347,500-gallons of storage which can supply the water system at peak hour demand conditions for 71.5 hours or approximately three (3) days. It is expected system demands could be met using the available storage for closer to one week given the conservation measure which would be implemented thus reducing the demands. Seven days is a significant amount of time which would allow the County to secure the needed resources for the Yosemite West Water System.

Nature Bridge Project:

It is my understanding that the Nature Bridge Campus was built and the initial water supply well is no longer producing an adequate quantity of water. Therefore, the Nature Bridge Project is discussing a possible service connection to the Yosemite West Water System. While the Nature Bridge Project does not have a well because it has gone dry, the project does include a 200,000-gallon storage tank which could be added to the Yosemite West water system in exchange for water service from Yosemite West Water System. The addition of 200,000-gallons of storage would bring the total storage capacity to 547,500-gallons. This increase in the total storage capacity would enable the system to supply water under peak demand conditions for approximately 113 hours (approximately 4.7 days). The additional storage capacity would make

the Yosemite West Water System more resilient and able to continue to provide the same level service for almost five days under peak demand conditions.

Senate Bill 1263:

The Nature Bridge Project does not have a water supply permit. As such, the YNP would be required to submit a technical report to the Division evaluating the need to form a new public water system as outlined by Senate Bill 1263 (SB1263). Specifically, SB1263 requires all new proposed public water systems, such as Nature Bridge, to evaluate the feasibility of connecting (establishing service) with any community water system within three miles of the proposed public water system. The Division is committed to preventing the formation of new public water systems and attempts to work with neighboring water systems to consolidate or provide service for new public water systems. As such, the Division is encouraged by the discussions between YNP, Yosemite Conservancy, Nature Bridge and Mariposa County in an attempt to create a regional water supply which will sustain the existing Yosemite West Water System customers, the Nature Bridge Campus and planned future developments for neighboring properties. It is the desire of the Division to have the Nature Bridge development served by Yosemite West Water System rather than Nature Bridge forming a public water system.

Golden Opportunity:

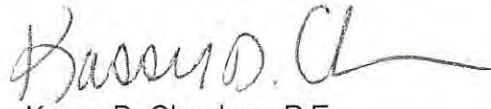
The Division of Drinking Water sees the Nature Bridge connection along with the source capacity (storage capacity) added to the system as a golden opportunity for the County to make the Yosemite West Water System more resilient and able to meet demands when emergency situations arise. The additional 200,000 gallons of storage will significantly improve the County's ability to meet demands even during emergency situations and provide more flexibility for securing resources and making needed repairs to restore service. It appears that the estimated demands from Nature Bridge (between 7.22 to 8.78 gpm) can be met with the existing source capacity from Well No. 9 and an additional 200,000 gallons of storage would be added bring the total storage capacity to 547,500 gallons for the Yosemite West Water System. As such, the Division encourages Mariposa County to continue to work with Nature Bridge (YNP/Yosemite Conservancy) to establish a service connection with the Yosemite West Water System.

Permit Requirements:

The County is not required to submit a permit amendment application to the Division for the Nature Bridge Campus connection because it does not result in an increase in the service area of more than 20 percent. However, if the County is going to incorporate the 200,000-gallon storage tank on the Nature Bridge Campus into the domestic water supply permit for the Yosemite West Water System, the County will be required to submit a permit amendment application for the new storage tank given its capacity is greater than 100,000 gallons. The Division will need to review the design and conduct a site visit of the storage tank prior to giving the County approval to add the 200,000-gallon storage tank to the existing Yosemite West Water System.

If you have any questions regarding the information contained in this letter, please contact me at 559-447-3316 or by email at kassy.chauhan@waterboards.ca.gov.

Sincerely,



Kassy D. Chauhan, P.E.
Senior Sanitary Engineer, Merced District
Central California Section
SOUTHERN CALIFORNIA BRANCH
DRINKING WATER FIELD OPERATIONS

Enclosures

cc: Mariposa County Public Works Department – Mr. Mike Healy
Mariposa County Environmental Health Department



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ENVIRONMENTAL PROTECTION

State Water Resources Control Board
Division of Drinking Water

September 4, 2019

System No. 2210924

Mr. Darryl Nielsen, Operator
Yosemite West Water System
4639 Ben Hur Road
Mariposa, CA 95338

RE: 2018 Sanitary Survey of the Yosemite West Water System

Dear Mr. Nielsen:

On November 6, 2018, Christopher Barber of this office conducted a sanitary survey/inspection of the Yosemite West water system (System) and its operation. The purpose of this letter is to inform you of the following items requiring action which were noted during the inspection and a subsequent file review:

1. The System must submit a plan and schedule for the plans for Wells Nos. 1 and 5 to the Division by October 31, 2019. If the System intends to destroy the wells, it must do so by July 31, 2020.
2. The System must submit an Operations Plan for the Lowry Aeration treatment system to the Division for review and approval by October 31, 2019. The System must submit an Operations Plan to avoid enforcement actions for violating the current water supply permit.
3. The System must submit a revised BSSP to the Division for review and approval by September 30, 2019. Appendix C contains guidelines for creating a BSSP.
4. By September 30, 2019, the System must submit a Consumer Confidence Report certification form to the Division.

E. JOAQUIN ESQUIVEL, CHAIR | EILEEN SOBECK, EXECUTIVE DIRECTOR

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5. The System must conduct the next round of lead and copper tap monitoring (5 samples) in 2019 between June 1st and September 30th.

Please provide a written response to this letter by September 30, 2019. If any of the aforementioned items have been addressed, please send evidence of completion along with the written response. Enclosed for your information is a copy of the report prepared by Christopher following the inspection, the Last/Next Source Monitoring Schedule, Lead and Copper Reporting Forms, Bacteriological Sample Siting Plan Guidelines, and inspection photos. Please review the report and provide any comments or clarifications you have to this office.

The assistance provided to Christopher during this review was greatly appreciated. If you have any questions or need additional information, please contact the Merced District Office at (559) 447-3300.

Sincerely,



Kassy D. Chauhan, P.E.
Senior Sanitary Engineer
Merced District
Central California Section
SOUTHERN CALIFORNIA BRANCH
DRINKING WATER FIELD OPERATIONS

cc: i Mariposa County Environmental Health Department
Mike Healy, Public Works Director

State Water Resources Control Board

Division of Drinking Water

TO: Kassy Chauhan, P.E.
Merced District
Drinking Water Field Operations Branch

FROM: Christopher Barber
Sanitary Engineer
MERCED DISTRICT

DATE: September 4, 2019

SUBJECT: SANITARY SURVEY
YOSEMITE WEST WATER SYSTEM
SYSTEM NO. 2210924
MARIPOSA COUNTY

I. INTRODUCTION

On November 6, 2018, I conducted a sanitary survey of the Yosemite West (System) water system and reviewed its operations. The System maintains and operates the potable water system which serves a small community in Yosemite National Park. I was the last person from the Division to inspect the water system on November 19, 2015.

1.1 DESCRIPTION OF SYSTEM

The Yosemite West Water System serves a community situated in Yosemite National Park in Mariposa County. The source of supply for the water system is groundwater from Well No. 09 that is treated by aeration and chlorination. The treated water is distributed among two pressure zones. The System serves an approximate population of 420 through 172 service connections.

1.2 PERMIT COMPLIANCE

The System currently operates under a domestic water supply permit (No. 03-11-12P-038) that was granted by the Division (formerly the California Department of Public Health) in December 2012. The water supply permit contains twelve special provisions which are listed as follows:

1. The only permitted source shall be the following active source for domestic supply. The inactive sources cannot be used without permit approval:

Source Name	PS Code	Status
Well No. 09	2210924-003	Active Raw
Well No. 01 – Inactive	2210924-001	Inactive Raw
Well No. 05 - Inactive	2210924-002	Inactive Raw

2. Continuous chlorination treatment shall be provided for the use of the Lowry aeration treatment.
3. The Lowry aeration system classifies the system as a T1 water treatment facility in accordance with Title 22 of the California Code of Regulations. The required certification levels of the chief operator and shift operator are both T1.
4. The distribution system is classified as a D1 system in accordance with Title 22 of the California Code of Regulations. The required minimum certification levels of the chief operator and shift operator are both D1.
5. The water system shall begin the Lead and Copper Rule compliance monitoring sequence with two initial six month rounds of lead and copper monitoring from the existing 10 routine sample sites within one month after the Lowry aeration corrosion control treatment system is operational.
6. The corrosion control treatment monitoring shall include Water Quality Parameter monitoring that consists of the following: (1) treated water monitoring at the entry point to the distribution system at frequency of once every two weeks for pH and alkalinity and (2) customer tap monitoring at least every six months from one sample location in the distribution system. A sampling plan shall provide the address of the distribution sample location and that it is representative of the distribution system.
7. Monitoring shall be conducted for the performance of the Lowry aeration treatment plant. The report shall include weekly monitoring for influent flow rates, raw and treated water pH and alkalinity, and effluent chlorine residuals. The aeration treatment shall increase the treated water pH to 7.5 or more based on a monthly average.
8. The water system shall submit an Operations Plan for the Lowry aeration system within 30 days of start-up that addresses the monitoring requirements, description of the alarm settings and actions to be taken, the criteria for temporary bypass of the Lowry aeration system and plant staffing levels.
9. The water system shall conduct the monitoring required by the appended Water Quality Monitoring Schedule.

10. Raw well water samples (ahead of chlorination) shall be collected at a minimum frequency of once a month from each active well for analysis of total coliform and E. coli bacteria. The coliform tests shall be performed using a density analytical method and the results reported in units of MPN/100 mL. The results shall be submitted to the Department by the 10th day of the following month.
11. By January 15, 2013, Yosemite West shall submit a plan and time schedule for providing at least one other source of supply that includes alternatives for the rehabilitation of inactive wells, drilling a new well, emergency interconnections to other approved well sources and any future developments in the area. It shall include contingency plans that include alternatives such as water hauling, emergency water conservation measures, closing rental housing, etc. It is recommended that these contingency measures be provided in the annual Consumer Confidence Report.
12. By February 15, 2013, the water system shall conduct and submit a cross-connection control survey of its customers. A written report of the survey with recommendations for any necessary backflow protection and a time schedule for implementation of the recommendations shall be submitted to the Department. The survey shall be conducted under the supervision of a certified cross-connection control specialist.

The System complies with all permit provisions with the exception of Permit Provision 7. The pH result of the aeration ranges from 6.5-7.2. While the System is not meeting this provision, the lead and copper results from the distribution system are below the action levels. Since the installation of the aeration treatment, lead levels in the distribution system have ranged from 0.002 mg/L to 0.0056 mg/L while the copper levels have ranged from 0.16 mg/L to 1.1 mg/L. As a result, an updated Operations Plan will define the operational parameters of the treatment. Regarding Provision 11, in 2013 the System submitted a plan for the addition of a second source. Please refer to the Adequacy of Supply section for addition details regarding this plan. The Provision No. 12 has been satisfied and the next cross-connection control survey should be completed if a commercial connection is added or requested by the Division.

1.3 ENFORCEMENT

No enforcement actions have been issued since the last sanitary survey.

II. INVESTIGATION AND FINDINGS

2.1 SOURCES OF SUPPLY

The System's domestic water supply is groundwater obtained from one active groundwater well. A description of the source is listed below.

Sources

Groundwater

Well No. 9 (Active Raw)

Well No. 9 (PS Code 2210924-003) was drilled in 1980 to a depth of 325 feet. The borehole contains a 6⁵/₈-inch diameter steel casing and grout annular seal to a depth of 100 feet. The well is open bottom from 100 feet to 325 feet. A 3-foot by 3-foot sanitary seal is installed and appears to be in good condition.

Well No. 9 is equipped with a 40-hp submersible pump set to a depth of 189 feet capable of producing between 85 gpm and 105 gpm. The well appurtenances include a casing vent that was downturned and screened. The well discharge piping includes a check valve, flow meter and sample tap. The well is housed in a small building that is kept locked at all times. Due to a recent forest fire that occurred prior to the site visit, the building was wrapped with a fireproof foil.

Inactive Wells

Wells Nos. 1 and 5 were disconnected and inactivated and neither well has been replaced. The combined production capacity was reportedly about 28 gpm when they were inactivated, which reportedly became dewatered during the late summer months. **The System must submit a plan and schedule for the plans for Wells Nos. 1 and 5 to the Division by October 31, 2019. If the System intends to destroy the wells, it must do so by July 31, 2020.**

Well No. 1 (Inactive Disconnected)

Well No. 1 was drilled in 1980 via the air rotary method to a depth of 280 feet. The borehole contains a 6-inch diameter plastic casing and a grout annular seal from 0 to 30 feet. Well No. 1 is located approximately 200 feet from the County's maintenance yard. Well No. 1 is located in a meadow in the upper part of the East Creek drainage area.

Well No. 5 (Inactive Disconnected)

Well No. 5 is located near the intersection of Henness Circle and Henness Ridge Road about 70 yards from Well No. 1. This well is also located in the upper part of the East Creek drainage area. It was drilled to a depth of 200 feet via the air rotary method in 1988. The borehole contains an 8-inch diameter plastic casing and a grout annular seal to a depth of 50 feet.

The System indicated that there are approximately 10 or 11 abandoned wells in the area which could have previously been a part of the water system prior to Mariposa County assuming

responsibility. The wells that are known about are on private property and are capped. The System indicated that the installed caps are mostly plates welded to the well casing that are in poor condition.

2.2 TREATMENT

Aeration and Chlorination Treatment

The corrosive properties are from the natural occurrence of dissolved carbon dioxide along with the low mineral content and alkalinity of the groundwater. The raw water monitoring indicated that the pH levels ranged from 5.84 to 6.40. As a result, the System would consistently exceed the copper action level in the distribution system. The water system installed a package aeration system designed to adjust the pH and bring the system into compliance with the copper Action Level (AL) of the Lead and Copper Rule (LCR). Post chlorination is required as a post treatment measure. The aeration system is a Lowry package system. The County provided the necessary chemical analyses and the vendor assured the water system that the water would meet the copper AL.

The System is required to conduct routine monitoring for the treated water leaving the plant at a minimum frequency of once every two weeks for pH and alkalinity in conformance with the corrosion control treatment requirements of the LCR. Customer tap monitoring is required every 6 months from at least one location in the distribution system. It is recommended that this site be selected from a location with historical high copper levels that is an actively used service connection.

The Lowry package system is housed in the booster pump station building, which is designed for snow conditions. The unit installed has a capacity of 125 gpm and is described as a Deep Bubble Multi-Stage Aeration system equipped with a DB63P air stripper vessel and Model VB-075 air blower. The treatment system utilizes horizontal flow into an enclosed rectangular basin divided into multiple chambers separated by vertical baffle plates with holes. Each chamber is fed air from a header pipe and tee shaped piped with diffusers. Air is forced into the bubbler diffusers using a blower that produces an air to water ratio of 25.4 to 1 to remove dissolved carbon dioxide. The rectangular basin has dimensions of 9.5 feet length, 5 feet width and 5.2 feet height. The system is equipped with a control panel that can be operated by the water system's SCADA system. The Lowry design criteria for the package system are shown below:

Well No. 9 Water Quality Parameters Used

Inlet Water Parameter	Value
Design Flow Rate, gpm	125
Carbon Dioxide, mg/L	78.7
Temperature, degrees C	10
Alkalinity, mg/L as CaCO ₃	32
Air/Water ratio	25.4:1

Predicted Treated Water Quality

Treated Water Parameter	Value	Comments
Carbon Dioxide Removal, %	>98	Equilibrium CO ₂ = 0.748 mg/L (cannot be removed)
pH	7.5-7.6	
Theoretical Copper Solubility, mg/L	0.631	Actual field Cu is normally much lower than theoretical value

While the predicted pH value was 7.5-7.6, the System can reliably achieve 6.5-7.2. As a result, the System has been out of compliance with permit provision 7 which requires a finished water pH of 7.5 at a minimum. While the System has not complied with the permit provision, the System has been in compliance with the monitored customer tap lead and copper levels. As a result, the Division will allow the System to continue to operate the treatment facility. The target pH of the treatment will instead be outlined in the Operations Plan that is requested below.

The package Lowry system is designed with process controls and alarms for mechanical failures that include a malfunctioning blower and water levels, which activate an alarm. The alarm system notifies the operators using an auto dialer through the SCADA system and triggers the automatic shutdown of the system. The piping is designed for a manual bypass of the Lowry component for maintenance and repairs.

The post-aeration treatment consists of an erosion type of chlorination system that was selected to due to limited winter access to the treatment building that contains the main booster pump station. The County has installed redundant twin Accu-Tab® erosion chlorinators. The chlorine residual is analyzed using a continuous W&T Depolox 3 chlorine residual analyzer and is connected to the SCADA system. The SCADA system controls and monitors the operation of Well No. 9, booster pumps and Lowry aeration system. If a system failure occurs the SCADA will shut down all the components and dial the operators. A data logger in the SCADA system records the pH, chlorine residual and any alarms. There is no chart recorder.

As mentioned earlier in this report, an updated Operations Plan is required. The updated Operations Plan must include the target pH, operational pH range, chlorination procedures and normal operator duties. **The System must submit an Operations Plan to the Division for**

review and approval by October 31, 2019. The System must submit an Operations Plan to avoid enforcement actions for violating the current water supply permit.

Monitoring and Reporting

The System currently submits monthly reports to the Division containing data from the aeration and chlorination treatment. Once every other week the System collects the raw water pH; treated water pH, alkalinity, chlorine residual; along with the pH and chlorine residual from a sample tap in the distribution system. The permit requires that the System monitors the parameters indicated in the following table:

Water Parameter	Frequency
Influent Flow Rate	Weekly
Raw Water pH	Weekly
Raw Water Alkalinity	Weekly
Treated Water pH	Weekly
Treated Water Alkalinity	Weekly
Effluent Chlorine Residual	Weekly
pH at Entry to Distribution System	Once Every 2 Weeks
Alkalinity at Entry to the Distribution System	Once Every 2 Weeks
Customer Tap	Once Every 6 Months

2.3 ADEQUACY OF SUPPLY

The 2018 electronic Annual Report to the Drinking Water Program (e-ARDWP) shows that System produced 10,471,000 gallons in 2018. The maximum month of production was in July when approximately 1,536,000 gallons (36 gpm) of water was produced. The maximum day demand (MDD) was not reported but can be approximated by multiplying the average day production during the maximum month by a peaking factor of 1.5. The MDD is estimated to be 54 gpm. The peak hour demand (PHD) can be estimated by applying a peaking factor of 1.5 to the maximum day demand. The estimated peak hour demand is approximately 81 gpm.

The capacity of the system is limited by the well capacity which is approximately 85 gpm. In the event of insufficient water production capability, the System has 347,500 gallons of storage which is able to supply the System for over 2 days of PHD usage.

The plan listed three options, entering into an agreement for an already established source, rehabilitate an old well, or drill a new well. The System indicated that no agreement was reached regarding an established source. The System is no longer interested in rehabilitating an old source as the production capacities are too low. The System currently considering purchasing the

property for a new well. The location of the new well would be located along the transmission line from Well No. 9 to the aeration treatment plant.

2.4 STORAGE

The water system contains a maximum storage capacity of 347,500 gallons (gross) from two tanks. Water is boosted over 1,000 feet of elevation from twin booster pumps that are activated using tank water level sensors in the tanks. The well water is pumped to two ground level storage tanks located side-by-side on a hill located at the top of the distribution system. One tank is listed as a 157,500-gallon bolted steel tank that was constructed in 1967 and the other tank is a 190,000-gallon welded steel tank that was constructed in 1978. The tanks have common inlet/outlet pipes and the two tanks are interconnected. The older bolted steel tank is a converted oil field tank and has two bolted lids. The screens and hatches on the tanks appeared to be in adequate condition. The tops of the storage tanks were inspected during the site visit.

The tanks were cleaned and inspected in June 2009 using divers. The final report indicates that the tanks are in adequate condition and recommends that the System routinely cleans and inspects the tanks to maintain integrity. A copy of the 2009 tank inspection report is on file with the Division. The Division recommends that the tanks be inspected at least once every 5 years. The System should submit a time schedule for cleaning and inspecting the storage tanks.

2.5 DISTRIBUTION SYSTEM

The distribution is classified as a D1 system, based on the number of service connections and population served. The distribution system consists of six pressure zones that consist of one main pressure zone fed by gravity flow from the storage tanks and five smaller zones created by ten pressure reducing valve stations, located in vaults in the subdivision. Two of the vaults have drains that are located near the road side. The remaining vaults are located in the middle of the roads and have no drains. The distribution system consists of 4 and 6-inch diameter asbestos cement (AC) pipe with ¾-inch service laterals.

Water main repairs are made under pressure and mains are isolated for major repairs. The County has adopted standards that are in accordance with the disinfection, flushing and sampling requirements of AWWA standards. The system has certified distribution system operators to oversee these activities.

The System uses AWWA C-900 Class 150 PVC for all new water main installations. There is no formal or routine flushing procedures. Flushing only occurs as needed. There are approximately 24 isolation valves installed in the distribution system. The valves are normally exercised when the lines are flushed or as needed. The Division recommends that dead-ends are flushed routinely to maintain water quality and isolation valves are exercised on an annual basis to ensure proper operation. No low head water lines exist in the system and water/sewer line separation is adequate. System pressures range from about 40 to 60 psi.

2.6 OPERATION AND MAINTENANCE

The Chief Operator, Darryl Neilson (D2, T2), is responsible for oversight of the water system. The chief operator of the System must have at least D1 and T1 certification and the shift operator must have at least D1 and T1 certification. The System meets the operator certification requirements.

Maintenance of the water system consists of weekly visits to the well and aeration treatment facilities by one the certified operators for required monitoring and operation of the treatment process. The storage tanks are visited monthly. Any necessary adjustments or maintenance work is performed during these visits. In addition, the System checks the tops of the storage tanks on an annual basis to check the condition of the vents and hatches. Any vegetation (leaves, branches, etc.) is also removed from the tops of the tanks at this time.

Operations Plan

The System must submit an updated Operations Plan. The updated Operations Plan must include the target pH, operational pH range, chlorination procedures and normal operator duties. **The System must submit an Operations Plan to the Division for review and approval by October 31, 2019. The System must submit an Operations Plan to avoid enforcement actions for violating the current water supply permit.**

Cross-Connection Control Program

The System indicated that there are no backflow assemblies installed in the distribution system. The Division requires that all backflow assemblies are continued to be tested annually. The System also conducted a cross-connection control survey in 2013. No issues needed to be addressed. A new cross-connection control survey should be completed in the event of the addition of commercial service connections. The System should continue to monitor the distribution system for potential sources of potential cross-connections.

Emergency Notification Plan (ENP)

The System has an Emergency Notification Plan (ENP) dated March 28, 2019, on file with the Division. The ENP lists Darryl Nielson, Mike Healy, and the On-Call Staff. The ENP indicates that larger systems such as the System will use door-to-door delivery, posting notices, social media, and reverse 911 calling for emergency notification. In the event of an emergency, Mr. Nielson will begin the notification process by contacting the necessary personnel. Notification is expected to take about six hours due to the remote location of the water system.

Electronic Annual Report (EAR)

The California Health and Safety Code Section 116530 states that all public water systems shall submit a technical report as required by the Division on an annual basis. The Division requires all water systems to submit the Electronic Annual Report to the Drinking Water Program (EAR) by March 31 of each year for the previous year, detailing population served and number of service connections, water produced and used status of various monitoring requirements and operator certification, system improvements and other information. The System submitted the 2018 EAR.

Building Resiliency

The effects of extreme weather on community water system (CWS) facilities and operations is a concern and priority of the State Water Resources Control Board (SWRCB), which is documented by the SWRCB in its Comprehensive Climate Change Resolution No. 2017-12, adopted in March 2017. DDW is reviewing each water system's level of resiliency and preparedness for changing climate conditions and extreme weather increase awareness to the potential effects to facilities and operations, and encourage the use of EPA's Climate Resilience Evaluation and Awareness Tool (CREAT). The CREAT can be found on the following website:

<http://www.epa.gov/crwu>

As part of the 2017 and 2018 eARs, CWSs were asked to identify their vulnerabilities, and rank them as either high, medium or low sensitivity, and proposed or implemented projects to prepare for the impacts from climate change. The System provided responses to these questions. The System identified one potential impact that their facilities is vulnerable to:

- Groundwater depletion
- Changes in seasonal runoff and/or loss of snowmelt
- Peak demand volume surges
- Increased fire risk and altered vegetation
- Disruption of power

The Water System has implemented, or is considering implementing, the following projects to address current identified needs and which also reduce the impacts to these vulnerabilities:

- Install new and deeper drinking water wells, or modify existing wells to increase pumping capacity
- Alternate of backup energy supply

The Water System indicated that they were not aware of the CREAT tool developed by USEPA for identifying climate vulnerabilities. The Water System has not used CREAT to identify vulnerabilities to the water system source and facilities. The SWRCB strongly encourages utilities

to evaluate infrastructure and operational vulnerabilities to extreme weather and other emergency conditions using tools such as CREAT and engaging in a conversation both within your water system organization and with customers on how to plan and prepare for being resilient to provide clean and safe water reliably and adequately under all current and future conditions.

Consumer Confidence Report (CCR)

Each year, the System is required to prepare a CCR and distributes it to the customers of the System by July 1st of each year. Within 3 months of distributing the CCR, the water system must submit a certification form and a copy of the CCR to the Division. The System delivered the 2018 CCR to customers on June 27, 2019, and uploaded the CCR to the Division on the same day. The Division did not receive a certification form. **By September 30, 2019, the System must submit a CCR certification form to the Division.**

2.7 SOURCE WATER QUALITY MONITORING

General Mineral, General Physical and Inorganic Chemicals

For groundwater, with the exception of nitrate and asbestos; general mineral, general physical and inorganic chemical monitoring is required once every three years. For the Well No. 9, the System last monitored for most of the aforementioned constituents in September 2018, with the most recent monitoring results in compliance with the primary and secondary maximum contaminant level (MCL) for these constituents.

Nitrate

All water systems are required to conduct annual nitrate monitoring of their active sources. All water systems and laboratories are required to report nitrate results as N with a MCL of 10 mg/L. The most recent nitrate monitoring results for Well No. 9 is listed in the following table.

Source	Sample Date	Nitrate Monitoring Result as N (mg/L)	Next Due
Well No. 9	1/15/2019	ND	1/15/2020

Nitrite

All water systems are required by the Division to conduct triennial nitrite monitoring of their active sources. The most recent nitrite monitoring results for Well No. 9 is listed in the following table.

Source	Sample Date	Nitrite Monitoring Result as N (mg/L)	Next Due
Well No. 9	9/11/2018	0.36	9/11/2021

Organic Chemicals

Volatile Organic Chemicals (VOCs)

The System is required to sample for each of the required volatile organic chemicals (VOCs) on a triennial frequency for Well No. 9. Based on the monitoring history of the source, the Division approved a waiver on September 24, 2018, to reduce the monitoring of the source to once every six years. The System must apply for a waiver prior to the end of each monitoring period to continue on a waived frequency. The next waiver application is due by December 31, 2019. The System last conducted the required VOC monitoring for Well No. 9 in May 2018. All respective analyses results were below the MCL for all required VOCs. The System is to continue the required six-year sampling frequency and next monitor the source for the required VOCs by November. All results are to be submitted to the Division via EDT.

The System must continue to monitor their source in accordance with the water quality monitoring schedule. The last sample and next sample due date monitoring schedule is included in Attachment C.

Synthetic Organic Chemicals (SOCs)

The System is required to monitor for each of the required synthetic organic chemicals (SOCs), atrazine, simazine, and 1,2,3-TCP on a triennial frequency for the groundwater source. The System last completed the required SOC monitoring for Well No. 9 in May 2018 with the exception of 1,2,3-TCP. All respective analyses resulted in non-detects for all required SOC. Based on the monitoring history of Well No. 9, the Division approved a waiver on September 24, 2018, to reduce SOC monitoring to once every six years. As mentioned in the VOC section, the System must apply for a waiver prior to the end of each monitoring period to continue on a waived frequency, the next waiver application is due by December 31, 2019.

1,2,3-Trichloropropane (1,2,3-TCP)

Beginning in January 2018, all community and nontransient-community water systems were required to begin monitoring all sources for 1,2,3 TCP. Initial monitoring consisted of quarterly monitoring for one year with the first round to be completed in the first quarter of 2018. If a source was determined to be in compliance, monitoring was reduced to once every six years. The System has completed initial monitoring with all results reported as non-detect. The next monitoring deadline for 1,2,3-TCP at Well No. 9 is due by December 2024.

Radiological

The California Radionuclide Rule became effective on June 11, 2006. Initial monitoring requirements under the California Radionuclide Rule must have been satisfied by December 31, 2007, for existing sources. The System has completed initial monitoring for Well No. 9 for gross alpha and radium-228. The most recent monitoring result for gross alpha at Well No. 9 was 3.6 pCi/L in 2016, which is above the DLR, but below half of the MCL. As a result, the System is required to monitor for gross alpha every six years. The System must next monitor Well No. 9 for gross alpha in 2022. Any time the gross alpha levels exceed 5 pCi/L the sample must also be analyzed for radium-226 (uranium may be monitored for in lieu of radium-226).

Source Bacteriological Monitoring

Since the System uses sodium hypochlorite for disinfection, routine source water bacteriological monitoring is required on at least a monthly basis for total coliform and E. Coli bacteria. Results must be reported in units of MPN/100mL. A review of the raw water quality since the last inspection shows three instances of total (only) coliform detection at the source. In January, February, and March of 2018, levels of total coliform up to 12 MPN/100mL were detected at the source. In each instance subsequent monitoring was absent for coliform bacteria.

2.8 DISTRIBUTION SYSTEM MONITORING

Bacteriological Water Quality

Based on the number of service connections, pressure zones and the population served, the System is required to collect and analyze a minimum of one bacteriological sample per month from within the distribution system. Due to the number of pressure zones in the distribution system, the System currently collects six samples a month from the distribution system. A review of the distribution system monitoring data since January 2016 indicates that there have been no instances of a positive bacteriological sample.

The BSSP on file for the System is dated March 2007. The BSSP lists six routine locations. Four repeat sites are listed for each routine site. The repeat sites include the original site, one upstream site, one downstream site, and the well. The Division requires water systems to update or create a new BSSP every 10 years. **The System must submit a revised BSSP to the Division for review and approval by September 30, 2019. Appendix C contains guidelines for creating a BSSP.**

Asbestos

Currently the System has asbestos-cement piping installed in the distribution system and water that is considered aggressive. As a result, the System must monitor the distribution system for the leaching of asbestos into the distribution system once every nine years. The System last monitored the distribution system for asbestos in December 2017 with a reported result of non-

detect. The next asbestos monitoring from the distribution system is due by December 2026. The PS Code assigned for asbestos monitoring in the distribution system is 2210924-901.

Stage 2 – Disinfection By-Product Rule Monitoring (ST2DBPR)

The System is considered a Schedule IV system under the United States Environmental Protection Agency (USEPA) Stage 2 Disinfectant and Disinfection By-Products Rule (ST2DBPR). Monitoring required by the ST2DBPR began in 2013 and will continue for the System triennially. The most recent result was collected in June 2019. The System must ensure that all ST2DBPR monitoring results are reported to the Division via EDT using the PS Code in the table below.

Site	PS Code	TTHM mg/L	HAA5 mg/L
ST2DBP – 7417 YPW	2210510-900	1.4	Non-Detect

Lead and Copper Monitoring

While under the regulatory jurisdiction of the Division, the System has had numerous copper results that have exceeded the action level. As a result, the System installed the aeration treatment equipment in order to successfully raise the pH of the water in an effort to bring the copper levels in the residences to an acceptable level. All reported lead levels have been under the action level. The following table summarizes the lead and copper tap monitoring results for the System following the installation of the aeration equipment:

Lead and Copper Monitoring History

Sample Date	Sample Interval	No. Required	No. Sampled	Lead 90th Percentile (mg/L)	Copper 90th Percentile (mg/L)
6/17/2014	1 st 6 Month	10	10	0.002	1.00
10/7/2014	2 nd 6 Month	10	10	0.056	1.10
9/24/2015	1 st Annual	10	10	0.031	0.33
9/22/2016	2 nd Annual	10	10	0.0036	0.160
1st Triennial round of monitoring due between June 1, 2019 and September 30, 2019					

Based on the Lead and Copper monitoring results submitted since the aeration treatment system was installed, the Division will not allow the System to conduct subsequent monitoring at a reduced frequency (once every three years) at a reduced number of locations (5). **The System must conduct another round of lead and copper tap monitoring (5 samples) in 2019 between June 1st and September 30th.**

As noted, the System must conduct another round of lead and copper tap monitoring (10 samples) in 2019 between June 1st and September 30th. The System must continue to monitor sites that are the most likely to be vulnerable to lead and copper contamination due to corrosion issues. Upon

review of the historic lead and copper monitoring results shows that the System changed five monitoring locations since the previous monitoring period. The System did not indicate why the locations were changed in the reporting forms. The System is required to identify any changes in the Lead and Copper Tap Sampling Site Change Form. The Division is now using new forms for reporting Lead and Copper monitoring results and the changing of addresses. Both of these forms must be used and are included in Appendix D. The following table lists the current sites monitored for lead and copper:

Lead and Copper Sample Sites

7509 Hennes Circle
7540 Hennes Circle
7396 Yosemite Parkway
7288 Yosemite Parkway
7426 Hennes Ridge
7226 Yosemite Parkway
7292 Buck Brush Lane
7193 Yosemite Parkway
7330 Yosemite Parkway
7417 Yosemite Parkway

All participants should be notified of the results collected from their residents, and a special notice should be sent if the results are greater than the action level at the customer's home. The Division recommends that the System provide the following information on the system's website or physically posting the information with other water quality notices, such as the CCR:

- The latest 90th percentile values for the most recent round of LCR tap sampling; and
- The number of sites sampled, the number of sites that exceeded an action level, and the number of samples that were invalidated (if applicable); and
- Justifications for invalidation of LCR samples (if applicable); and
- Information on the locations of lead service lines in the distribution system, together with a map of the identified areas and an inventory of lead plumbing in the system; and
- Additional health information on how to minimize lead in drinking water if lead was detected above the action level in more than 5%, and up to and including 10%, of sites sampled. The health information language specified in Section 64482(c), Chapter 15, Title 22 of the Consumer Confidence Report regulations may be used for this purpose.

Permit Amendment No. 2017PA_Schools

On January 17, 2017, the Division issued Permit No. 2017PA_Schools to the System. This permit amendment defined the System's responsibilities regarding the monitoring of lead in K-12 public schools. The permit amendment also included sampling guidance to further assist in the monitoring.

AB 746 – Lead Sampling in Schools

California Assembly Bill 746 (AB 746) was approved by the Governor and published on October 13, 2017. The bill required all community water systems that serve a school site of a local educational agency with a building constructed before January 1, 2010, to test for lead in the potable water system of the school site on or before July 1, 2019. All community water systems are required to contact public K-12 schools within their service area to arrange a time to meet and discuss the sampling procedures. Section 116277 was added to the Health and Safety Code (HSC 116277), outlining these requirements, which became effective on January 1, 2018.

The System indicated that it does not serve any public schools.

Water Quality Parameter Monitoring

The System uses aeration treatment to remove dissolved carbon dioxide in the water and raise the pH as a means of corrosion control due to continuous exceedances of the copper action level in the distribution system. Since a corrosion control treatment is being used, Water Quality Parameter monitoring is required. The System has been submitting the results to the Division as required. Water Quality Parameter (WQP) monitoring consists of pH and alkalinity monitoring the entry point to the distribution system from the aeration treatment plant once every two weeks. In addition, one location in the distribution system must be identified and monitored twice every six months for pH and alkalinity. The System must continue to submit the results to the Division monthly.

III. SYSTEM APPRAISAL

The Yosemite West water system is in good overall condition and is capable of supplying safe and potable water, which meets all of the applicable primary drinking water standards.

The System needs to address the following issues that were noted during the inspection and subsequent file review:

1. The System must submit a plan and schedule for the plans of Wells Nos. 1 and 5 to the Division by October 31, 2019. If the System intends to destroy the wells, it must do so by July 31, 2020.
2. The System must submit an Operations Plan for the Lowry Aeration treatment system to the Division for review and approval by October 31, 2019. The System must submit an Operations Plan to avoid enforcement actions for violating the current water supply permit.
3. The System must submit a revised BSSP to the Division for review and approval by September 30, 2019. Appendix C contains guidelines for creating a BSSP.

4. By September 30, 2019, the System must submit a Consumer Confidence Report certification form to the Division.
5. The System must conduct the next round of lead and copper tap monitoring (5 samples) in 2019 between June 1st and September 30th.

Appendices

Appendix A: System Photos from November 6, 2018 Sanitary Survey

Appendix B: Last/Next Source Monitoring Schedule

Appendix C: Guidelines for Creating a Bacteriological Sample Siting Plan

Appendix D: New Lead and Copper Monitoring Forms

Appendix A

System Photos from November 6, 2018 Sanitary Survey



Photo 1; Wellhouse with Fire Resistant Foil

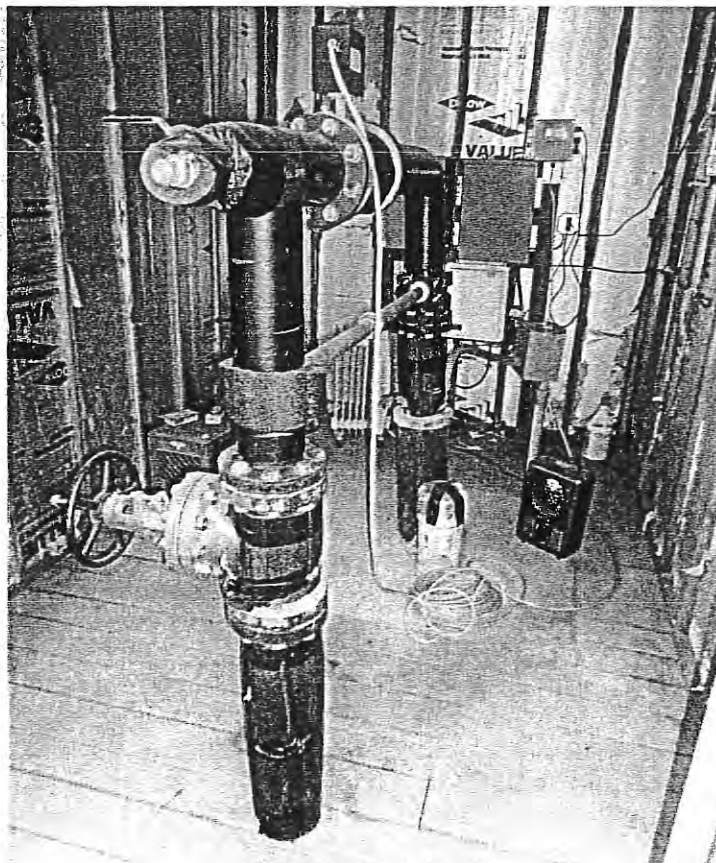


Photo 2; Well No. 9



Photo 3; Lowry Aeration Equipment

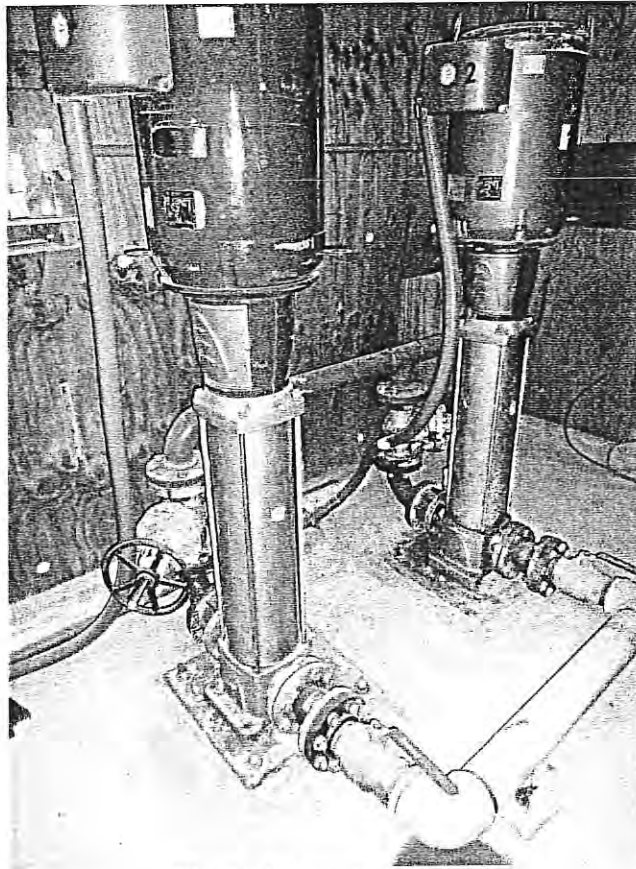


Photo 4; Booster Pumps

Appendix B

Last/Next Source Monitoring Schedule

LAST SAMPLE DATE AND MONITORING SCHEDULE

SYSTEM NO: 2210924

NAME: YOSEMITE WEST WATER SYSTEM

COUNTY: MARIPOSA

SOURCE NO: 003

NAME: WELL 09

CLASS: CTGD

STATUS: Active

PCODE	GROUP/CONSTITUENT IDENTIFICATION	LAST RESULT	UNITS	MCL	DLR	LAST SAMPLE	COUNT	FREQ. MON. THS	MOD.	NEXT SAMPLE DUE	NOTES
2210924 - 003	YOSEMITE WEST WATER SYSTEM	003	WELL 09								
	GP SECONDARY/GP										
	00440 BICARBONATE ALKALINITY		30 MG/L	-----	-----	2018/09/11	8	36		2021/09	
	00916 CALCIUM		5.1 MG/L	-----	-----	2019/04/23	9	36		2022/04	
	00445 CARBONATE ALKALINITY	<	ND MG/L	-----	-----	2018/09/11	8	36		2021/09	
	00940 CHLORIDE	<	ND MG/L	500	-----	2018/09/11	8	36		2021/09	
	00081 COLOR	<	ND UNITS	15	-----	2018/09/11	8	36		2021/09	
	01042 COPPER	<	ND UG/L	1000	50	2018/09/11	9	36		2021/09	
	38260 FOAMING AGENTS (MBAS)	<	ND MG/L	.5	-----	2018/09/11	8	36		2021/09	
	00900 HARDNESS (TOTAL) AS CaCO3		17 MG/L	-----	-----	2019/04/23	6	36		2022/04	
	71830 HYDROXIDE ALKALINITY	<	ND MG/L	-----	-----	2018/09/11	8	36		2021/09	
	01045 IRON	<	ND UG/L	300	100	2018/09/11	8	36		2021/09	
	00927 MAGNESIUM		0.91 MG/L	-----	-----	2019/04/23	9	36		2022/04	
	01055 MANGANESE	<	ND UG/L	50	20	2018/09/11	8	36		2021/09	
	00086 ODOR THRESHOLD @ 60 C		1.0 TON	3	1	2018/09/11	8	36		2021/09	
	00403 PH, LABORATORY		5.8	-----	-----	2018/09/11	19	36		2021/09	
	01077 SILVER	<	ND UG/L	100	10	2018/09/11	8	36		2021/09	
	00929 SODIUM		4.8 MG/L	-----	-----	2018/09/11	8	36		2021/09	
	00095 SPECIFIC CONDUCTANCE		51 US	1600	-----	2018/09/11	8	36		2021/09	
	00945 SULFATE	<	ND MG/L	500	.5	2018/09/11	8	36		2021/09	
	70300 TOTAL DISSOLVED SOLIDS		48 MG/L	1000	-----	2018/09/11	8	36		2021/09	
	82079 TURBIDITY, LABORATORY		0.20 NTU	5	.1	2018/09/11	8	36		2021/09	
	01092 ZINC		12 UG/L	5000	50	2018/09/11	8	36		2021/09	
	IO INORGANIC										
	01105 ALUMINUM	<	ND UG/L	1000	50	2018/09/11	8	36		2021/09	
	01097 ANTIMONY	<	ND UG/L	6	6	2018/09/11	7	36		2021/09	
	01002 ARSENIC	<	ND UG/L	10	2	2018/09/11	8	36		2021/09	

LAST SAMPLE DATE AND MONITORING SCHEDULE

SYSTEM NO: 2210924

NAME: YOSEMITE WEST WATER SYSTEM

COUNTY: MARIPOSA

SOURCE NO:

NAME: WELL 09

CLASS: CTGD

STATUS: Active

PSCODE	GROUP/CONSTITUENT IDENTIFICATION	LAST RESULT	UNITS	MCL	DLR	LAST SAMPLE	COUNT	FREQ MON THS	MOD	NEXT SAMPLE DUE	NOTES
2210924 - IO INORGANIC											
003											
81855	ASBESTOS	ND	MFL	7	.2	2016/11/08	2	108		2025/11	
01007	BARIUM	23	UG/L	1000	100	2018/09/11	8	36		2021/09	
01012	BERYLLIUM	<	ND UG/L	4	1	2018/09/11	7	36		2021/09	
01027	CADMIUM	<	ND UG/L	5	1	2018/09/11	8	36		2021/09	
01034	CHROMIUM (TOTAL)	<	ND UG/L	50	10	2018/09/11	8	36		2021/09	
00951	FLUORIDE (F) (NATURAL-SOURCE)	<	ND MG/L	2	.1	2018/09/11	8	36		2021/09	
71900	MERCURY	<	ND UG/L	2	1	2018/09/11	8	36		2021/09	
01067	NICKEL	<	ND UG/L	100	10	2018/09/11	7	36		2021/09	
A-031	PERCHLORATE	< 4	UG/L	6	4	2018/09/11	3	36		2021/09	
01147	SELENIUM	<	ND UG/L	50	5	2018/09/11	8	36		2021/09	
01059	THALLIUM	<	ND UG/L	2	1	2018/09/11	7	36		2021/09	
NI NITRATE/NITRITE											
00618	NITRATE (AS N)	<	ND mg/L	10	.4	2019/01/15	20	12		2020/01	
00620	NITRITE (AS N)	0.36	mg/L	1	.4	2018/09/11	8	36		2021/09	
RA RADIOLOGICAL											
01501	GROSS ALPHA	3.6	PCI/L	15	3	2016/03/03	9	108	M	2025/03	
S1 REGULATED VOC											
34506	1,1,1-TRICHLOROETHANE	<	ND UG/L	200	.5	2018/05/16	6	72		2024/05	
34516	1,1,2,2-TETRACHLOROETHANE	<	ND UG/L	1	.5	2018/05/16	6	72		2024/05	
34511	1,1,2-TRICHLOROETHANE	<	ND UG/L	5	.5	2018/05/16	6	72		2024/05	
34496	1,1-DICHLOROETHANE	<	ND UG/L	5	.5	2018/05/16	6	72		2024/05	
34501	1,1-DICHLOROETHYLENE	<	ND UG/L	6	.5	2018/05/16	6	72		2024/05	
34551	1,2,4-TRICHLOROBENZENE	<	ND UG/L	5	.5	2018/05/16	6	72		2024/05	
34536	1,2-DICHLOROBENZENE	<	ND UG/L	600	.5	2018/05/16	6	72		2024/05	
34531	1,2-DICHLOROETHANE	<	ND UG/L	.5	.5	2018/05/16	6	72		2024/05	

LAST SAMPLE DATE AND MONITORING SCHEDULE

SYSTEM NO: 2210924

NAME: YOSEMITE WEST WATER SYSTEM

COUNTY: MARIPOSA

SOURCE NO:

NAME: WELL 09

CLASS: CTGD

STATUS: Active

PSCODE	GROUP/CONSTITUENT IDENTIFICATION	LAST RESULT	UNITS	MCL	DLR	LAST SAMPLE	COUNT	FREQ MON THS	MOD	NEXT SAMPLE DUE	NOTES
2210924 - S1 003	34541 1,2-DICHLOROPROPANE	<	ND UG/L	5	.5	2018/05/16	6	72		2024/05	
	34561 1,3-DICHLOROPROPENE (TOTAL)	<	ND UG/L	.5	.5	2018/05/16	5	72		2024/05	
	34571 1,4-DICHLOROBENZENE	<	ND UG/L	5	.5	2018/05/16	6	72		2024/05	
	34030 BENZENE	<	ND UG/L	1	.5	2018/05/16	6	72		2024/05	
	32102 CARBON TETRACHLORIDE	<	ND UG/L	.5	.5	2018/05/16	6	72		2024/05	
	77093 CIS-1,2-DICHLOROETHYLENE	<	ND UG/L	6	.5	2018/05/16	6	72		2024/05	
	34423 DICHLOROMETHANE	<	ND UG/L	5	.5	2018/05/16	6	72		2024/05	
	34371 ETHYL BENZENE	<	ND UG/L	300	.5	2018/05/16	6	72		2024/05	
	46491 METHYL-TERT-BUTYL-ETHER (MTBE)	<	ND UG/L	13	3	2018/05/16	5	72		2024/05	
	34301 MONOCHLOROBENZENE	<	ND UG/L	70	.5	2018/05/16	6	72		2024/05	
	77128 STYRENE	<	ND UG/L	100	.5	2018/05/16	6	72		2024/05	
	34475 TETRACHLOROETHYLENE	<	ND UG/L	5	.5	2018/05/16	6	72		2024/05	
	34010 TOLUENE	<	ND UG/L	150	.5	2018/05/16	6	72		2024/05	
	34546 TRANS-1,2-DICHLOROETHYLENE	<	ND UG/L	10	.5	2018/05/16	6	72		2024/05	
	39180 TRICHLOROETHYLENE	<	ND UG/L	5	.5	2018/05/16	6	72		2024/05	
	34488 TRICHLOROFLUOROMETHANE FREON 11	<	ND UG/L	150	5	2018/05/16	6	72		2024/05	
	81611 TRICHLOROTRIFLUOROETHANE (FREON 113)	<	ND UG/L	1200	10	2018/05/16	5	72		2024/05	
	39175 VINYL CHLORIDE	<	ND UG/L	.5	.5	2018/05/16	6	72		2024/05	
	81551 XYLENES (TOTAL)	<	ND UG/L	1750	0.5	2018/05/16	6	72		2024/05	
S2 REGULATED SOC											
	77443 1,2,3-TRICHLOROPROPANE (1,2,3-TCP)	<	ND UG/L	0.005	0.005	2018/10/09	4	72		2024/10	
	39033 ATRAZINE	<	ND UG/L	1	.5	2018/05/16	5	72		2024/05	
	39055 SIMAZINE	<	ND UG/L	4	1	2018/05/16	5	72		2024/05	

LAST SAMPLE DATE AND MONITORING SCHEDULE

SYSTEM NO: 2210924

NAME: YOSEMITE WEST WATER SYSTEM

COUNTY: MARIPOSA

SOURCE NO: 900

NAME: ST2DBP - 7417 YPW

CLASS: DBPT

STATUS: Active

PS CODE	GROUP/CONSTITUENT IDENTIFICATION	LAST RESULT	UNITS	MCL	DLR	LAST SAMPLE	COUNT	FREQ MON THS	MOD	NEXT SAMPLE DUE	NOTES
2210924 - 900	YOSEMITE WEST WATER SYSTEM	900	ST2DBP - 7417 YPW								
	D BP										
	32101 BROMODICHLOROMET HANE (THM)	0 UG/L	-----	1	2019/06/18	3	36			2022/06	
	32104 BROMOFORM (THM)	0 UG/L	-----	1	2019/06/18	3	36			2022/06	
	32106 CHLOROFORM (THM)	1.4 UG/L	-----	1	2019/06/18	3	36			2022/06	
	82721 DIBROMOACETIC ACID (DBAA) <	1.0 UG/L	-----	1	2019/06/18	3	36			2022/06	
	32105 DIBROMOCHLOROMET HANE (THM)	0 UG/L	-----	1	2019/06/18	3	36			2022/06	
	77288 DICHLOROACETIC ACID (DCAA) <	1.0 UG/L	-----	1	2019/06/18	3	36			2022/06	
	A-049 HALOACETIC ACIDS (5) (HAA5) <	1.0 UG/L	60	-----	2019/06/18	3	36			2022/06	
	A-041 MONOBROMOACETIC ACID (MBAA) <	1.0 UG/L	-----	1	2019/06/18	3	36			2022/06	
	A-042 MONOCHLOROACETIC ACID (MCAA) <	1.0 UG/L	-----	2	2019/06/18	3	36			2022/06	
	82080 TOTAL TRIHALOMETHANES	1.4 UG/L	80	-----	2019/06/18	3	36			2022/06	
	82723 TRICHLOROACETIC ACID (TCAA) <	1.0 UG/L	-----	1	2019/06/18	3	36			2022/06	

LAST SAMPLE DATE AND MONITORING SCHEDULE

SYSTEM NO: 2210924

NAME: YOSEMITE WEST WATER SYSTEM

COUNTY: MARIPOSA

SOURCE NO: 901

NAME: ASB-7417 YPW

CLASS: OTHR

STATUS: Active

PSCODE	GROUP/CONSTITUENT IDENTIFICATION	LAST RESULT	UNITS	MCL	DLR	LAST SAMPLE	COUNT	FREQ MON THS	MOD	NEXT SAMPLE DUE	NOTES
2210924 - 901	YOSEMITE WEST WATER SYSTEM	901	ASB-7417 YPW								
	IO INORGANIC										
	81855 ASBESTOS	ND MFL	7	.2		2017/12/06	1	108	M	2026/12	

Appendix C

Guidelines for Creating a Bacteriological Sample Siting Plan

State Water Resources Control Board
Division of Drinking Water

DRINKING WATER FIELD OPERATIONS BRANCH – MERCED DISTRICT

**GUIDELINES FOR COMPLETION OF THE BACTERIOLOGICAL
SAMPLE SITING PLAN**

(For systems collecting four or fewer routine samples per month)

The total coliform regulation requires the water supplier to submit a bacteriological sample siting plan to the Division for review and approval. The locations where samples are to be collected must be written down and formally approved by the Division. These guidelines and Attachments B and C, "Bacteriological Sample Siting Plan" forms, are to assist you in complying with these requirements.

To comply with the requirements for submitting a Bacteriological Sample Siting Plan, two (2) items must be submitted to the Division at this time.

1. A system map, street map, or system schematic showing all sampling locations must be submitted. The map can be prepared by any system representative. It does not have to be prepared by an engineer. The following are to be shown on the map:
 - Water Sources (i.e., well or spring)
 - Treatment Facilities (i.e., chlorination)
 - Storage Tanks
 - Pressure Reducing Stations
 - Booster Stations
 - Pressure Zones
 - Dead Ends
 - Service Area Boundaries
 - Routine Sample Sites
 - Repeat Sample Sites
 - Special Sample Sites
2. Complete either Attachment B or C, the "Bacteriological Sample Siting Plan" form, and return the system map and form to the Division for review and approval. The use of either Attachment B or C depends on the number of repeat samples required. Refer to pages 2 and 3 below in "*How many repeat sampling sites are required?*"

E. JOAQUIN ESQUIVEL, CHAIR | EILEEN SOBECK, EXECUTIVE DIRECTOR

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3. Once the Bacteriological Sample Siting Plan has been approved by the Division, copies should be provided to the person responsible for sample collection, the laboratory and the person responsible for reporting coliform-positive samples to the Division.

Selection of Sampling Sites

The routine sampling sites chosen must be representative of the water distribution system including all pressure zones, areas supplied by each water source and distribution reservoir.

Looped Systems: If your entire water distribution system is looped, then one routine sample point may be representative of your system, assuming valves are open.

Pressure Zones: You should only be concerned about sampling in different pressure zones if your water system serves different areas of varying elevations, for example in mountainous areas.

How many routine sampling sites are required?

A minimum of five (5) routine sampling sites must be selected and indicated on your map and sampling plan form. If your water system is required to collect less than 5 routine samples a month, then 5 routine samples must be collected the month following any coliform positive sample. This is the reason for identifying 5 routine sites in your plan.

If the water system is not adequately represented by 5 routine sample locations, you may identify additional locations and collect more than one sample per month. Each site identified should be rotated for sampling at least every three months.

How many repeat sampling sites are required?

Either complete **Attachment B** if your system collects **one or fewer** samples per month, a repeat sample set is consists of four samples to be collected from the following locations:

- One repeat sample from the same routine location.
- One repeat sample from an *upstream location*.
(within 5 connections of the routine site)
- One repeat sample from a *downstream location*.
(within 5 connections of the routine site)
- One sample from *some other location*.
(within 5 connections upstream or downstream of the routine site or a well site[see Attachment A])

or complete **Attachment C** if your system collects **more than one** routine sample per month, a repeat sample set consists of three samples from the following locations:

- One repeat sample from the same routine location.
- One repeat sample from an upstream location.
(within 5 connections of the routine site)
- One repeat sample from a downstream location.
(within 5 connections of the routine site)

What if the water system does not have enough locations to select the required number of routine and repeat sample sites?

If the water system does not have enough sample locations to identify 5 routine sites and 3 to 4 repeat sites per routine, you may either (1) identify fewer than 5 routine sites as long as the sampling adequately reflects water quality in the distribution system, or (2) use some of the routine sites as repeat sites for other routines (i.e., double up on use of available sites).

Pointers for Sample Site Selection

- When selecting a routine sample site you should be able to select a site upstream and a site downstream for repeat sampling.
- Select a site where the water is used continuously all year round.
- Pick a site that is easily accessible, i.e., a fenced yard with a locked gate and vicious dog is not a good selection.
- When choosing a sampling tap you should consider these factors:

The sampling tap should be located in as clean an environment as possible. It should be protected from contamination by humans, animals, airborne materials or other sources of contamination.

If you choose an outside private tap, it should be one that is in frequent use, clean, and at least 1½ feet (18 inches) above the ground. The sample tap should discharge downward.

If you choose an inside tap, be sure that you are not sampling from drinking fountains, taps which have aerators or strainers, or swivel faucets, or taps off of individual homeowner treatment units.

Do not choose a fire hydrant as sampling tap.

Avoid taps that are surrounded by excessive foliage or taps that are dirty or corroded.

Avoid taps that leak, have fittings with packing, or have permanent hoses or attachments fastened to the tap (Never collect a sample from a hose).

Avoid the use of dead ends for routine sample collection, and use for repeat samples only if no other sample sites are available and if there is continuous water use from a service off the dead-end.

**Instructions for Completing the
Bacteriological Sample Siting Plan Form**

This form has been designed to include all the requirements for the Bacteriological Sample Siting Plan.

- **PWS Classification**

The public water system (PWS) classification for your water system is either community, nontransient noncommunity or transient noncommunity. This classification determines the type and frequency of all water quality testing. If you are uncertain of your classification, contact the Division.

- **Month/Daily Users**

The monthly population determines the frequency of bacteriological sample collection for community water systems. The daily population determines the frequency of sample collection for transient and nontransient noncommunity systems.

- **Active Service Connections (Community water systems only)**

This is the number of active hook-ups served by the system. If your system has a hook-up to a vacant lot, do not count this as an active connection. If a vacant lot has a right to a future connection, do not count this as an active connection. If a residence is connected to the system, but the residence is vacant, count this as an active hook-up.

- **Distribution Sampling Frequency**

This is the minimum number of routine bacteriological samples required at the frequency specified. If any routine sample is positive for coliform bacteria, additional repeat samples will be required. Repeat samples are in addition to the required routine samples. If you are uncertain of the routine sampling frequency for your water system, contact the Division. Attachment A provides the minimum frequency based on type of water system. This will be increased if more than 1,000 people have been served on a daily basis.

A coliform-positive sample will increase the routine monitoring for a small system the following month. A system normally collecting less than 5 routine samples per month which has a coliform positive sample must collect a minimum of five (5) routine samples the following month.

- **Source Sampling Frequency**

This is the amount of bacteriological sampling that the water system is going to collect from each source (well, surface water-raw, spring, etc.) per month or

quarter. Source sampling is required at a specified frequency when the water system continuously treats (i.e. chlorination) the water or has a surface water treatment plant.

- **Water Treatment**

This is the type of water treatment that the water system applies to the water that is entering the distribution system. If your water system does not provide water treatment, then write N/A.

- **Trained Sampler**

The person collecting samples must be trained.

Sampling Service: Water systems utilizing a certified laboratory or other sampling service for water sample collection will be considered to have trained samplers. Enter the name of the laboratory or sampling service collecting your samples. A copy of the approved Bacteriological Sample Siting Plan should be provided to the laboratory or sampling service, if one is used.

Other Trained Samplers: Any person receiving a certificate from AWWA for attendance of the Water Sampling Training should submit a copy of their certificate along with the completed form. Any other samplers should submit a statement of their experience and training to this Division for approval.

- **Analyzing Lab**

Enter the state certified laboratory which will be analyzing your water samples.

- **Person Responsible to Report Coliform-Positive Samples to DIVISION**

This should be the person that the laboratory is required to contact when a sample is total or fecal coliform positive. This person must notify the Division within 24 hours of a violation of the total coliform standard (more than one positive sample in a month) or when any sample is fecal or *E. coli* positive. This person should have the authority to take corrective action as required by regulation and the Division. This should be the same person listed on your Emergency Notification Plan. Refer to Attachment A for additional instructions related to follow-up to positive samples. Please note: Regulation now requires the water supplier to require the laboratory immediately notify the Division of any positive bacteriological result if the laboratory cannot make direct contact with water system's designated contact person within 24 hours. We recommend you provide a copy of your emergency notification plan to your laboratory.

- **Day/Evening Phone Number**

The Division requires that the water system provide the phone numbers of the person listed above so that they can be contacted by the laboratory or the Division at any time during the day or evening in the event of a bacteriological emergency.

- **Signature and Date**

The person preparing the Sample Siting Plan should sign and date the plan. If the Division has questions regarding the sampling plan, this is the person to be contacted.

- **Sample ID**

This should be entered on the laboratory slip when the sample is turned into the laboratory. This is the unique identifier for the water sample location or the location address may also be used.

For systems collecting one or fewer routine samples per month, a minimum of five (5) routine sampling sites with three (3) repeat sampling sites for each routine sample locations must be listed. Use the **Attachment B** plan form.

For systems collecting more than one routine sample per month, a minimum of five (5) routine sampling sites with two (2) repeat sampling sites for each routine sample location must be listed. Repeat sample sites are to be located within five (5) service connections upstream and downstream of the routine sample site. Use the **Attachment C** plan form.

All sample locations should be marked in some way with the Sample ID or location address, i.e., the code painted on the sampling location or tagged with a water proof tag so the person collecting the water sample is sure to collect the water from the correct sample locations.

- **Sample Type**

This describes what type of sample (routine or repeat) is to be collected at this location.

- **Sample Point**

This is the type of the sample location. Use the following abbreviations, when appropriate.

HB	Hose Bib (exterior)
SF	Sink Faucet
PC	Goose Neck Type Copper Tube with Pet Cock

- **Location of Sample Point**

This is the description of the area in the distribution that the sample site is located. Routine sample sites shall not be located at dead ends.

DE	Dead End (Not Recommended)
PZ	Pressure Zone
RD	Representative Distribution

- **Location Address**

This is the actual physical location where the water sample is to be collected. If possible use a street address, i.e., 103 Good Street. If the location does not have a street address use the nearest crossroads or use the last name of the resident, i.e., "Brown Residence." If the location is a business, please list the business name and address.

When describing the location, keep in mind that the person collecting water samples must be able to locate the sample site from your description.

- **Months Sample Collected at This Location**

This is the schedule for routine samples to be collected. For example, suppose two (2) sites are representative of your systems. Site No. 1 will be sampled in January, March, May, July, September, and November. Site No. 2 will be sampled in February, April, June, August, October, and December. All routine sites identified should be rotated to allow sampling at least every 3 months.

BACTERIOLOGICAL MONITORING REQUIREMENTS
For Water Systems collecting 4 or fewer routine samples

1. Minimum Monitoring Frequency

<u>Monthly Population Served</u>	<u>Service Connections</u>	<u>Minimum Frequency</u>
25 to 1,000	15 to 400	1 per month
1,001 to 2,500	401 to 890	2 per month
2,501 to 3,300	891 to 1,180	3 per month
3,301 to 4,100	1,181 to 1,460	4 per month

Increased monitoring frequency may be required if there is more than one pressure zone in the distribution system or multiple sources or storage reservoirs. If your system is providing continuous chlorination treatment, closely review Item 6 below.

2. Routine and Repeat Sampling

All **routine samples** should be collected from the distribution system (not from the well) at locations specified in an approved Bacteriological Sample Siting Plan. If such a plan has not been prepared for your water system, contact the Division for assistance.

3. Repeat Monitoring After a Coliform-Positive Sample

Notification of a Coliform-Positive Sample - The water system shall require the laboratory to notify the system within 24 hours if any sample is coliform-positive. The water system must collect a repeat sample set within 24 hours of notification of the coliform-positive sample. **If the sample is fecal coliform or *E. Coli* positive, the water system should contact the Division immediately.**

Please note: Regulation now requires the water supplier to require the laboratory immediately notify the Division of any positive bacteriological result if the laboratory cannot make direct contact with the water system's designated contact person within 24 hours. We recommend you provide a copy of your emergency notification plan to your laboratory.

Repeat Sampling - For systems collecting **only one (1)** sample per month or quarter, a repeat sample set shall consist of four (4) samples as follows: one (1) from the routine sample site at which the positive occurred, one (1) from the upstream repeat sample site, one (1) from the downstream repeat sample site and one (1) from the operating well or another location within the system that would best help to identify the source or area of contamination.

For systems collecting **more than one (1)** sample per month, a repeat sample set shall consist of three (3) samples as follows: one from the routine sample site at which the positive occurred and two from the upstream and downstream repeat sample sites.

The repeat sample sites shall be located within five service connections upstream and downstream of the routine site as identified in the Bacteriological Sample Siting Plan. At least one repeat sample shall be collected from upstream and one from downstream unless there is no upstream or downstream service connection. Contact the Division as soon as the results of the repeat samples are obtained.

The following criteria should be considered when determining where to collect the fourth repeat sample:

- For systems with only one active well and do not provide continuous chlorination, the sample may be collected at the wellhead.
- For systems with more than one active well, it may not be possible to determine which well was serving the area where the positive routine sample was collected. For these systems, the fourth repeat sample should be collected at a storage tank or another point in the distribution system.
- For systems providing continuous chlorination, the system should already be conducting raw-water bacteriological monitoring at a point ahead of chlorination on at least a quarterly basis. These samples should be used to determine if the source of bacteriological contamination is from the well itself. For these systems, the fourth repeat sample should be collected at a storage tank or another point in the distribution system.
- Contact the Division for assistance.

If any of the above criteria would result in a change or revision to your existing bacteriological sample-siting plan, you must first submit a revised plan to our office for review and approval before implementing any such change or revision.

Any additional samples collected from the well(s) for investigative purposes (*not part of the repeat sample set*) should be labeled as "special" samples (or "other" samples), and will not be counted towards compliance with the monthly total coliform water quality standards.

Sampling the Month Following a Coliform-Positive Sample - If a public water system for which fewer than five routine samples/month are collected has one or more total coliform-positive samples, the water supplier shall collect at least five routine samples the following month. These samples can be collected on the same day from five different routine sites or from the same routine sites at 15 minute intervals (if fewer than five sites are available). If all five samples are negative for total coliform, the water system may return to the normal sampling frequency during the next sampling period.

4. Determining Compliance with the Coliform Standard

A public water system will fail the coliform maximum contaminant level (MCL) if: For a public water which collects fewer than 40 samples per month, at least two samples collected in the same month are coliform-positive. When this occurs, the water system representative shall contact the Division immediately (within 24-hours or the next business day if the office is closed). The water system will be required to conduct public notification and will be provided with an approved notification to be used. Public notification shall be conducted by direct mail, hand delivery or posting (where approved).

5. Monthly Reporting of Coliform Monitoring Results

The analytical results of all coliform monitoring shall be reported to the Division by the 10th day of the month following sample collection. The water system can request the laboratory to provide the results to the Division; however, the water system is ultimately responsible to ensure that the sample results were received. If the water delivered to your water system is provided with a disinfection treatment, the chlorine residual should be measured and reported at the same time and location(s) that the bacteriological sample(s) are collected. This residual must be provided to the Division on the laboratory analysis report at this time. Beginning January 1, 2004, EPA's Disinfectant/Disinfection By-Product (D/DBP) Rule will require this reporting to our Division.

6. Bacteriological Monitoring of Wells (for systems chlorinating)

Water systems that are routinely chlorinating the water supply are required to sample the raw well water for coliform bacteria. Initially, a minimum of six consecutive monthly samples must be collected from the well discharge. The samples must be collected at a location ahead of chlorination. After six consecutive monthly samples do not show the presence of coliform bacteria, the water system may request a reduction in sampling to one sample per quarter. The laboratory should be instructed to determine the most probable number of coliform (MPN) for well samples. The results of all samples shall be submitted to the Division.

ATTACHMENT B (see p. 6 of instructions) **BACTERIOLOGICAL SAMPLE SITING PLAN**

System No.:		System Name:	
PWS Classification:		No. Monthly Users:	Daily Users:
No. Active Service Connections:		Distribution Sampling Frequency: 1 sample per month	
Source Sampling Frequency: Following TC+		Continuous Water Treatment: Yes	
Name of Trained Sampler:		Analyzing Lab:	
Person responsible to report coliform-positive samples to Division		Day/Evening Phone No.:	
Signature of Water System Representative:			
Date:			

Sample ID	Sample Type	Sample Point	Location of Sample Point	Address of Sample Point	Months Sample Collection at this Location
1-ROU	Routine				
1-REP1	Repeat				Repeat Sample Only
1-REP2	Repeat				Repeat Sample Only
1-REP3	Repeat				Repeat Sample Only
2-ROU	Routine				
2-REP1	Repeat				Repeat Sample Only
2-REP2	Repeat				Repeat Sample Only
2-REP3	Repeat				Repeat Sample Only
3-ROU	Routine				
3-REP1	Repeat				Repeat Sample Only
3-REP2	Repeat				Repeat Sample Only
3-REP3	Repeat				Repeat Sample Only
4-ROU	Routine				
4-REP1	Repeat				Repeat Sample Only
4-REP2	Repeat				Repeat Sample Only
4-REP3	Repeat				Repeat Sample Only
5-ROU	Routine				
5-REP1	Repeat				Repeat Sample Only
5-REP2	Repeat				Repeat Sample Only
5-REP3	Repeat				Repeat Sample Only

If the water system has one or more total coliform-positive samples, at least five routine samples will be collected the following month.

ATTACHMENT C (see p. 6 of instructions)
BACTERIOLOGICAL SAMPLE SITING PLAN

System No.:		System Name:		Daily Users:	
PWS Classification:		No. Monthly Users:			
No. Active Service Connections:		Distribution Sampling Frequency:			
Source Sampling Frequency:		Continuous Water Treatment:			
Name of Trained Sampler:		Analyzing Lab:			
Person responsible to report coliform-positive samples to DIVISION:		Day/Evening Phone No.:			
Signature of Water System Representative: _____ Date: _____					

Sample ID	Sample Type	Sample Point	Location of Sample Point	Address of Sample Point	Months Sample Collection at this Location
1-ROU	Routine				
1-REP1	Repeat				Repeat Sample Only
1-REP2	Repeat				Repeat Sample Only
2-ROU	Routine				
2-REP1	Repeat				Repeat Sample Only
2-REP2	Repeat				Repeat Sample Only
3-ROU	Routine				
3-REP1	Repeat				Repeat Sample Only
3-REP2	Repeat				Repeat Sample Only
4-ROU	Routine				
4-REP1	Repeat				Repeat Sample Only
4-REP2	Repeat				Repeat Sample Only
5-ROU	Routine				
5-REP1	Repeat				Repeat Sample Only
5-REP2	Repeat				Repeat Sample Only

If the water system has one or more total coliform-positive samples, at least five routine samples will be collected the following month.

Appendix D

New Lead and Copper Monitoring Forms

State Water Resources Control Board

Division of Drinking Water

Lead and Copper Tap Sample Results Guidance Document



This guidance document was developed to help public water systems comply with the California Lead and Copper Rule (LCR). The LCR requires community water systems and non-transient non-community water systems to monitor lead and copper levels at the consumers' taps. If action levels are exceeded, installation of corrosion control treatment is required. If the action level for lead is exceeded, public notification is required.

Lead Action Level = 0.015 mg/L

Copper Action Level = 1.3 mg/L

Compliance with the lead and copper action levels is based on the 90th percentile lead and copper levels. This means that the concentration of lead and copper must be less than or equal to the action level in at least 90% of the samples collected.

To help explain compliance with the LCR, information on the following topics are included in this document:

- Section 1. Number of Tap Sample Sites Required
- Section 2. When to Sample
- Section 3. Tier Levels
- Section 4. How to Sample
- Section 5. How to Calculate the 90th Percentile Lead and Copper Levels
- Section 6. What to Do if You Exceed the Lead or Copper Action Level
- Section 7. How to Report Your Sample Results
- Section 8. Monitoring Waivers

SECTION 1. Number of Tap Sample Sites Required

The number of tap sample sites required is based on the number of people served (system size) by your water system and also whether you are performing Standard or Reduced Monitoring.

Table 1. Number of Sampling Sites

System Size	Minimum Number of Sites	
	Standard Tap Sampling	Reduced Tap Sampling
> 100,000	100	50
10,001 to 100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
< 101	5	5

SECTION 2. When to Sample

Samples must be collected during the months of June, July, August, or September, unless the Division approves an alternate set of four months.

Standard Monitoring:

Each water system must complete at least two consecutive 6-month Standard Monitoring periods with no exceedance of the lead or copper action level before the frequency of sampling can be reduced. During each 6-month Standard Monitoring period, you must collect at least one tap sample from the number of sites shown in Table 1, under Standard Tap Sampling.

Therefore, during your first year of sampling, collect a set of samples in the first six months and a set of samples in the second six months. Samples must be analyzed for both lead and copper.

If at any time your 90th percentile lead or copper level exceeds the action level, you must contact your respective District Office or County Agency for further guidance.

Reduced Monitoring:

If you have completed two consecutive 6-month Standard Monitoring periods and the 90th percentile levels do not exceed 0.005 mg/L for lead and 0.65 mg/L for copper, you may reduce the number of tap sample sites as shown in Table 1, under Reduced Monitoring, and reduce the frequency at which you sample to once every three years.

If you have completed two consecutive 6-month Standard Monitoring periods and the 90th percentile levels are greater than 0.005 mg/L for lead and 0.65 mg/L for copper, but do not exceed the lead or copper action levels, you may reduce the number of tap sample sites as shown in Table 1, under Reduced Tap Sampling. You may also reduce the frequency at which you collect the samples to annual monitoring for two years. Samples must be analyzed for both lead and copper.

After completing the last year of annual monitoring, if there has been no exceedance of the lead or copper action level, collect one set of samples once every three years during the month of June, July, August or September. Again, samples must be analyzed for both lead and copper.

SECTION 3. Tier Levels

Lead and copper tap samples must be collected from sampling locations that meet the following criteria:

Tier Level	Community Water Systems	Non-Transient Non-Community Water Systems
Tier 1	Single-family structures that - Contain copper pipes with lead solder installed after 1982; or - Contain lead pipes; or - Are served by a lead service line <i>If multiple-family residences comprise at least 20 percent of the structures served by a water system, the system may include these types of structures as "tier 1" sites in its sampling pool.</i>	Buildings that - Contain copper pipes with lead solder installed after 1982; or - Contain lead pipes; or - Are served by a lead service line
Tier 2 <i>(use this tier level only if there is an insufficient number of "tier 1" sampling sites)</i>	Buildings (including multiple-family residences) that - Contain copper pipes with lead solder installed after 1982; or - Contain lead pipes; or - Are served by a lead service line	Buildings that Contain copper pipes with lead solder installed before 1983
Tier 3 <i>(use this tier level only if there is an insufficient number of "tier 1" and "tier 2" sampling sites)</i>	Single-family structures that Contain copper pipes with lead solder installed before 1983	N/A
Representative	A system with an insufficient number of tier sites shall complete its sampling pool with "representative" sites (i.e. plumbing materials commonly found at other sites) throughout the distribution system.	

- Notes:
1. If lead service lines are present in the distribution system, at least half of the samples must come from the sites served by lead service lines
 2. Do not sample from homes or buildings that have point-of-use or point-of-entry treatment devices (e.g., water softener, carbon filter system, etc.)
 3. Each round of sampling should be conducted at the same sampling sites. If an original sampling site is not available, you should collect a tap sample from another site meeting the same Tier criteria as the original site, and complete/submit the **Lead and Copper Tap Sampling Site Change** form.

SECTION 4. How to Sample

Depending on the type of water system you operate, the following options are available for sample collection:

- You can collect the samples yourself using the procedures outlined below; or
- Residents of the water system can collect the samples for you. Letters are usually sent to find volunteers to participate in the sampling program. The attached sample collection instruction sheet must be sent to each participant. Residents collect the samples and complete the bottom portion of the instruction sheet. You collect the filled sample bottles and the completed instruction sheets from the residents. Sample bottles are then transported to the laboratory for analysis.

Sample Procedures:

- 1) Samples from residential housing are to be taken from a kitchen or bathroom cold-water faucet. Do not sample from faucets that have point-of-use treatment (e.g., water softener, carbon filter system, etc.). Samples from a non-residential building are to be collected from an interior tap from which water is typically drawn for consumption.
- 2) Each sample must be collected after the water has stood undisturbed in the pipes for at least 6 hours. It is best to collect the sample first thing in the morning.
- 3) Each sample must be one liter in volume and must contain the first water drawn from the faucet.
- 4) Remove the cap from the one-liter sample bottle, place the container directly below the faucet and gently open the cold-water tap. Fill the sample bottle to the line marked "1- liter or 1,000-ml" and turn off the water.
- 5) Tightly cap the sample bottle and complete the required information on the sample bottle label.
- 6) All samples must be analyzed by a laboratory certified by the State to perform drinking water lead and copper analyses.

SECTION 5. How to Calculate the 90th Percentile Lead and Copper Levels

Number of Tap Samples Collected	Determination of 90 th Percentile Lead and Copper Levels
5	Place results in ascending order and assign each sample a number, 1 for the lowest concentration. Average the 4 th and 5 th highest sample results to get the 90 th percentile level.
More than 5	Place results in ascending order and assign each sample a number, 1 for the lowest concentration. Multiply the total number of samples by 0.9. Round down to the nearest whole number if the decimal is 0.4 or lower and round up if the decimal is 0.5 or higher. The sample result that corresponds with the nearest whole number is the 90 th percentile.

SECTION 6. What to Do if You Exceed the Lead or Copper Action Level

If your 90th percentile lead or copper level exceeds the action level, you must contact your respective regulating agency (District office or County Agency) for further guidance.

SECTION 7. How to Report Your Sample Results

Upon completion of each sampling period, the following items must be submitted to your respective District Office or County Agency:

- A fully completed *Lead and Copper Tap Sample Results Reporting Form*
- A fully completed *Lead and Copper Tap Sampling Site Change Form*, if needed
- Laboratory copies of all sample results

SECTION 8. Monitoring Waivers

You may apply to the Division for a waiver to reduce the tap sampling frequency for lead and copper to **once every nine years**. If you meet the following materials and monitoring criteria for both lead and copper, a full waiver will be granted. If you meet the materials and monitoring criteria for only one of the chemicals, a partial waiver that covers only that chemical will be granted.

Materials Criteria:

- You must provide certification and documentation that the distribution system and service lines and all drinking water supply plumbing, including plumbing conveying drinking water within all residences and buildings connected to the system, satisfy the following:
- For lead, the system must be free of plastic pipes that contain lead plasticizers or plastic service lines that contain lead plasticizers, lead service lines, lead pipes, lead-soldered pipe joints, and leaded brass or bronze alloy fittings and fixtures, unless you can demonstrate that such fittings and fixtures will not leach lead into the drinking water.
- For copper, the system must be free of copper pipes and copper service lines.

Monitoring Criteria:

- You must have conducted standard tap sampling for at least one six-month period and demonstrate that the 90th percentile levels for all periods of tap sampling conducted since the water system became free of all lead-containing and/or copper-containing materials do not exceed 0.005 mg/L for lead and 0.65 mg/L for copper. You must continue monitoring at the required frequency (Standard Monitoring or Reduced Monitoring) until a waiver is granted.



State Water Resources Control Board

Division of Drinking Water

Lead and Copper Tap Sample Results Reporting Form

This form must be submitted by the public water system to the regulating entity (DDW District Office or County Agency) for each round of lead and copper sampling

Report Date: (mm/dd/yyyy)	
Water System Name:	
Water System Number:	
Water System Type:	☐ Community ☐ Non-Transient, Non Community
Monitoring Frequency:	☐ 6-month ☐ Annual ☐ Triennial
# of Samples Required:	
# of Samples Reported:	
	90th Percentile Level (mg/L)
Lead: <i>Action Level = 0.015 mg/L</i>	
Copper: <i>Action Level = 1.3 mg/L</i>	

	Sample Date	Sample Site Location/Address	Tier 1, 2, 3, or R	Result	
				Lead (mg/L)	Copper (mg/L)
01					
02					
03					
04					
05					
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Division of Drinking Water
Lead and Copper Tap Sample Results Reporting Form

Sampling Site Change

Each round of sampling should be conducted at the same sampling sites. If an original sampling site is not available, you should collect a tap sample from another site meeting the same Tier criteria as the original site.

You must complete/submit the *Lead and Copper Tap Sampling Site Change* form.

Notification of Results

As required by *40 Code of Federal Regulations Section 141.85(d)*, within 30 days of learning of the tap monitoring results, I notified the participants, by mailing or by another method approved by the State, of the lead sample results from their individual taps, provided an explanation of the health effects of lead, listed steps the consumer could take to reduce exposure to lead, provided contact information for the water utility, the maximum contaminant level goal for lead, action level for lead, and any definitions.

Notification was done on _____ by _____
(date)

- ☐ Direct Mail
☐ Posting in public area (NTNC systems only)
☐ Other (please specify below) _____
-

For general information on lead and copper tap sampling, you can refer to the *SWRCB Lead and Copper Tap Sample Results Guidance Document*. If you have any questions or comments, please contact your regulating entity (Division of Drinking Water District or County Agency).

SIGNATURE:	DATE:
NAME (Print):	TITLE:

Division of Drinking Water
Lead and Copper Tap Sample Results Reporting Form

				Result	
	Sample Date	Sample Site Location/Address	Tier 1, 2, 3, or R	Lead (mg/L)	Copper (mg/L)
21					
22					
23					
24					
25					
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Division of Drinking Water
Lead and Copper Tap Sample Results Reporting Form

	Sample Date	Sample Site Location/Address	Tier 1, 2, 3, or R	Result	
Lead (mg/L)				Copper (mg/L)	
61					
62					
63					
64					
65					
66					
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State Water Resources Control Board
Division of Drinking Water
Lead and Copper Tap Sampling Site Change Form



This form is to be completed and submitted with the Lead and Copper Tap Sample Results Reporting Form if any sampling site(s) are changed, with exception of the first period of tap sampling

Water System Type: ☐ Community ☐ Non-Transient, Non-Community

	Original Sampling Site	New Sampling Site
Address/Location:		
Tier Level:	☐ Tier 1 ☐ Tier 2 ☐ Tier 3 ☐ Representative	☐ Tier 1 ☐ Tier 2 ☐ Tier 3 ☐ Representative
Reason for sampling site change:		

	Original Sampling Site	New Sampling Site
Address/Location:		
Tier Level:	☐ Tier 1 ☐ Tier 2 ☐ Tier 3 ☐ Representative	☐ Tier 1 ☐ Tier 2 ☐ Tier 3 ☐ Representative
Reason for sampling site change:		

	Original Sampling Site	New Sampling Site
Address/Location:		
Tier Level:	☐ Tier 1 ☐ Tier 2 ☐ Tier 3 ☐ Representative	☐ Tier 1 ☐ Tier 2 ☐ Tier 3 ☐ Representative
Reason for sampling site change:		

SIGNATURE:	DATE:
NAME (Print):	TITLE: