
State Water Resources Control Board

Division of Drinking Water

DATE: May 7, 2018

TO: Jeff Densmore, P.E.
Santa Barbara District Engineer

FROM: Jason Cunningham, E.I.T.
Water Resource Control Engineer, Santa Barbara District

SUBJECT: San Luis Obispo County Service Area 10A
Cayucos - 4010901
2018 Sanitary Survey Report
San Luis Obispo County

I. Introduction

On March 28, 2018, Mr. Jeff Densmore and Mr. Jason Cunningham of the Santa Barbara District, Division of Drinking Water (hereinafter known as "Division") of the State Water Resources Control Board (SWRCB) inspected the San Luis Obispo County Service Area 10A - Cayucos (hereinafter known as "District 10A"). Mr. Kyle James, Chief Plant Operator; and Mr. Justin Smith, Shift Plant Operator were in attendance. The last annual inspection was conducted by Ms. Ashley Jones on March 6, 2014.

The purpose of this sanitary survey report is to document the inspection of District 10A, to describe the facilities and operational practices as they exist today, and to describe any deficiencies needing follow-up.

1.1 Sources of Information

Information for this sanitary survey report was obtained from District 10A personnel, DDW files, and the 2018 Sanitary Survey of the water system.

1.2 Brief Description of System

The San Luis Obispo County Service Area 10A - Cayucos (District 10A) is classified as a community water system, located in San Luis Obispo County. According to the 2016 Electronic Annual Report (EAR), there are approximately 857 customers that are served through 768 service connections. District 10A purchases treated surface water and groundwater from the San Luis Obispo County Water District 10 – Cayucos Water Treatment Plant. District 10A's distribution system contains a single 210,000 gallon storage tank for the single pressure zone system.

II. INVESTIGATION FINDINGS

III. Area Served

District 10A is located in the city of Cayucos, which is located in San Luis Obispo County along Highway 1, between Highway 41 and Highway 46, north of the city of Morro Bay. According to the 2016 Electronic Annual Report (EAR), District 10A has 99.2% (762) of the service connection being residential and 0.8% (6) commercial. A map of the service area is provided in Attachment A.

3.2 Source of Supply

Purchased Water

District 10A has a 190 AF per year allocation and purchases water from San Luis Obispo County Service Area 10 – Cayucos Water Treatment Plant. District 10A maintains an 8-inch connection with a capacity of 800 gpm. The San Luis Obispo County Service Area 10 – Cayucos Water Treatment Plant water is composed of both treated surface water and groundwater. The surface water is filtered and disinfected in compliance with the SWTR requirements, and the groundwater is disinfected and generally blends with the treated surface water.

3.3 Adequacy of Supply

District 10A uses the purchased surface water from San Luis Obispo County Service Area 10 – Cayucos Water Treatment Plant to meet the water system demand. District 10A has the capability to purchase 800 gpm (1.152 MGD). According to the 2016 EAR, District 10A supplies water to approximately 857 persons through 768 service connections. Per the California Waterworks Standards all public water systems are required to record the production from their source on a monthly basis. The Maximum Day Demand (MDD) was calculated using the reported maximum month usage and a peaking factor of 1.5. The Peak Hour Demand (PHD) were calculated using the calculated maximum day demand and a peaking factor of 1.5. District 10A's average day, maximum day, and peak hour demands during the last six years are listed in Table 1.

Table 1: Production Data (2011-2016)

Year	Annual Production (MG)	Average Day Demand (gpm)	*Maximum Day Demand (gpm)	*Peak Hour Demand (gpm)
2017	41.3	78.6	145.8	218.8
2016	41.7	79.3	149.5	224.2
2015	40.0	76.1	138.0	207.0
2014	42.9	81.6	160.2	240.3
2013	44.9	85.4	164.2	246.4
2012	40.5	77.1	147.7	221.6
2011	41.3	78.6	152.8	229.1

*These values were estimated using peaking factors. Calculations with peaking factors are provided below.

$$\text{Average Day Demand (gpm)} = \frac{\text{Annual production (gallons)}}{\left(365 \frac{\text{days}}{\text{year}}\right) * \left(24 \frac{\text{hrs}}{\text{day}}\right) * \left(60 \frac{\text{min}}{\text{hr}}\right)}$$

$$\text{Max Day Demand (MDD)} = \text{Max Month (gpm)} * (1.5)$$

$$\text{Peak Hour (PHD)} = (\text{Max Day (gpm)}) * (1.5)$$

According to the California Waterworks Standards, public water systems should have water sources that have the capacity to meet the maximum day demand (MDD) at all times. District 10A has the capability to purchase 800 gpm, which is greater than the highest calculated MDD in the seven years of 164 gpm in 2013.

According to the California Waterworks Standards, a public water system serving less than 1,000 service connections, shall have storage capacity equal to or greater than the MDD, unless the system can demonstrate that it has an additional source of supply or has an emergency source connection that can meet the MDD requirement. District 10A has a total of 210,000 gallons of storage. Using the highest calculated PHD demand in the last seven years (164 gpm in 2013), District 10A could provide approximately 21 hours of storage. Therefore, District 10A does not provide enough storage capacity to meet the Division's MDD criteria. However, based on the 2013 EAR, District 10A did not report or project any water shortages. District 10A plans to add a second 210,000 gallon storage reservoir in the near future. This would increase their storage capacity to 420,000 gallons which would allow them to provide approximately 42 hours of storage. District 10A is preparing a permit amendment for the Division. District 10A needs to submit the preliminary plans for review and approval.

Drought Impact and Preparedness

The State will continue to update water conservation measures depending on current weather conditions. Therefore, the States measures continue to change based on current conditions. The Division recommends that District 10A stay informed by visiting the State's Water Conservation Portal at http://www.waterboards.ca.gov/water_issues/programs/conservation_portal/. The Division also recommends that District 10A conduct an ongoing well production and groundwater level monitoring program as well as ensuring any water conservation measures are achieved that are required by the State. The well production data shall be recorded on minimum of a monthly basis and reported in the EAR.

Groundwater Management

In 2014, California signed historic legislation for groundwater management throughout the State, specifically providing local agencies (also known as Groundwater Sustainability Agencies, or GSA's) the authority to manage groundwater basins and usage through the Sustainable Groundwater Management Act of 2014. This is important as groundwater levels are declining, water quality contamination is increasing, and the drought persists. GSA's located in high and medium priority basins in critical overdraft as identified by DWR need to develop groundwater sustainability plans by 2020 and adopt and implement the plan by 2040. GSA's are made up of local public water agencies such as Cities, Counties, Public Utility Districts, Community Services Districts, Irrigation Districts, Water Conservation Districts, etc. District 10A is encouraged to attend and engage in the local GSA meetings to provide input in the process.

3.4 Treatment

District 10A does not provide any additional treatment to the purchased water from the San Luis Obispo County Water District 10 – Cayucos Water Treatment Plant.

3.5 Storage Facilities

District 10A's storage consists of a single water storage reservoir (Reservoir 1). Reservoir 1 was constructed in 1973 and provides a storage capacity of 210,000 gallons. The steel reservoir is situated in a rural area and located above ground. The reservoir site is fenced. The reservoir is equipped with screened vents and an overflow. The reservoir is constructed of welded steel has epoxy internal coating and was last inspected and cleaned in 2013. The reservoir is equipped with a common inlet/outlet. District 10A recoated the exterior and interior of the reservoir and replaced the ladder, hatch and vent in 2011. The Division recommends that all storage tanks be cleaned and inspected at least once every five years.

3.6 Distribution System

The distribution system is made up of a single pressure zone ranging between 30 and 100 psi. Most mains consist of 4 to 8-inch asbestos cement, 2 to 8-inch PVC, and a few 1/2 to 1 inch steel. District 10A uses PVC pipe for new and replacement mains. District 10A maintains ten feet horizontal and one-foot vertical separation between water and sewer lines or it follows the Division's Guidelines for the Separation of Water and Sewer Mains. Maps of the distribution system are maintained and kept up to date. According to the 2016 EAR, District 10A reported 15 problems within the distribution system. One problem was related to a main break/ leak and the remaining 14 problems were related to service connection breaks/ leaks.

3.6.1 Lead Service Line Inventory Requirement

Existing law prohibits the use of any pipe, pipe or plumbing fitting or fixture, solder, or flux that is not "lead free" in the installation or repair of any water system or any plumbing in a facility providing water for human consumption. Senate Bill (SB) 1398 became effective on September 27, 2016, and added Section 116885 to the Health and Safety Code (HSC). HSC Section 116885 requires water systems to compile an inventory of known lead user service lines in use in its distribution system and identify areas that may have lead user service lines in use in its distribution by July 1, 2018. After completing the inventory, water systems are required to provide a timeline for replacement of known lead user service lines in the distribution system to the SWRCB. In addition, water systems with areas that may have lead user service lines in use in its distribution system must either determine the existence or absence of lead service lines in these areas and provide that information to the SWRCB, or provide a timeline for replacement of the user service lines whose content cannot be determined by July 1, 2020. The SWRCB must approve the replacement timeline.

3.6.2 Main Disinfection Program

New lines are disinfected and retained for 24 hours. Bacteriological tests are made after disinfection. Repairs to fractured mains are made under partial pressure or if a section of the line is replaced, all parts used and the fittings are swabbed with sodium hypochlorite and flushed in accordance with AWWA disinfection procedures.

3.7 Operation and Maintenance

District 10A's water system is classified as a D1 distribution system. Therefore, at minimum, District 10A must have a D1 certified distribution system operator to oversee all aspects of the water system. Mr. Kyle James, Chief Operator possesses a D2 operator license and Mr. Justin Smith, Shift Operator possesses a D2 operator license, which satisfies the D1 distribution classification.

Water systems shall utilize either certified distribution operators or treatment operators to make decisions addressing the following operational activities:

1. Operate pumps and related flow and pressure control and storage facilities manually or by using a system control and data acquisition (SCADA) system.
2. Maintain and/or adjust system flow and pressure requirements, control flows to meet consumer demands including fire flow demands and minimum pressure requirements.

Water systems shall utilize either certified distribution operators or treatment operators to make decisions addressing the following operational activities:

1. Determine and control proper chemical dosage rates for wellhead disinfection and distribution residual maintenance.
2. Investigate water quality problems in the distribution system.

DISTRIBUTION OPERATOR CERTIFICATION REQUIREMENTS

Regulations also require the chief distribution operator to have at least a D1 certification and the shift distribution operator to have at least a D1 certificate. Water systems shall utilize only certified distribution operators to make decisions addressing the following operational activities:

1. Install, tap, re-line, disinfect, test and connect water mains and appurtenances.
2. Shutdown, repair, disinfect and test broken water mains.
3. Oversee the flushing, cleaning, and pigging of existing water mains.
4. Pull, reset, rehabilitate, disinfect and test domestic water wells.
5. Stand-by emergency response duties for afterhours distribution system operational emergencies.
6. Drain, clean, disinfect, and maintain distribution reservoirs.

3.8 Cross-Connection Control Program

District 10A has an established cross-connection control program, which is run through the County of San Luis Obispo Environmental Health Department (SLO-EHD). John Williams is a certified Cross-Connection Specialist who is in charge of the program. SLO-EHD reviews the services on a routine basis and requires yearly testing of the backflow prevention devices installed in parks, industrial services, sewage treatment plants, recycled water facilities and other services. New services are evaluated for backflow prevention device requirements.

Each backflow device user receives a letter approximately one month in advance informing them that the device is due for annual testing. When the test is completed and no issue with the backflow device is noted, no follow up is needed until the device is due for testing again. In the event that the backflow device fails, District 10A informs the user and requires a test to be completed after the repair has been made. If the user does not have the device tested when due, District 10A sends a second letter reminding the user to have the device tested. If the user still does not test after the second letter, District 10A sends a third letter informing the user that the water will be shut off if the device is not tested.

Based on the 2016 EAR, District 10A is equipped with two backflow prevention devices and both of the backflow prevention devices were tested in 2016. District 10A reported that one of the backflow prevention devices failed and it was replaced.

3.9 Emergency Notification Plan

District 10A has an Emergency Notification Plan (ENP) dated January 7, 2016. The ENP lists Mark Chiramonte, Chief Plant Operator; Charles Christian, Water Systems Chemist; and Dean Benedix, Utilities Division Manager as the primary contacts in the event of an emergency. The ENP shall be updated whenever necessary, although DDW recommends submitting the ENP on an annual basis to ensure that the information remains current.

3.10 Emergency Response Plan

District 10A most recent version of the Emergency Response Plan (ERP) was completed in June 2010. At any time District 10A updates their ERP, a copy should be provided to the Division. The ERP lists the priorities and corrective actions that will be undertaken in event of emergencies such as major damage to system facilities, power failure, chlorination failure, water quality failure, water outage, pressure loss, etc. All consumers will be notified in event of hazards. A list of contractors is maintained who will be contacted immediately for repairs. All damages and needed repairs will be recorded. District 10A should provide the Division with an updated copy whenever changes are made to the ERP.

3.11 Bacteriological Sample Siting Plan (BSSP)

District 10A has a Bacteriological Sample Siting Plan (BSSP) on file with the Division dated November 18, 2016, and entails the collection of three samples per month. District 10A rotates between two sites. In the event of a positive total coliform bacteriological sample, District 10A has identified an upstream and downstream repeat sample location for both of the routine sites. The BSSP must be updated any time there is a change in the procedures used for bacteriological monitoring or at a minimum, once every ten years.

3.12 Complaints

District 10A maintains records of all complaints received and actions taken to correct the problems related to complaints. According to the 2016 EAR, there were no complaints reported by customers.

3.13 Consumer Confidence Report (CCR)

District 10A is required to distribute a CCR to each customer in their service area by July 1st of each year. A copy of the CCR for the year ending December 31, 2016 and the CCR certification form were submitted to the Division on May 16, 2017.

3.14 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 (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. District 10A submitted the 2016 EAR on August 31, 2018, and the Division deemed the EAR complete. The 2017 EAR became available in March 2018, and the 2017 EAR is not due until June 1, 2018.

IV. WATER QUALITY MONITORING

Since District 10A purchases treated surface water and groundwater from San Luis Obispo County Water District 10 – Cayucos Water Treatment Plant, only distribution system water quality monitoring is required. The distribution system monitoring is collected from sample sites within the distribution system. The sampling requirements and frequencies for the required monitoring is discussed in the following sections:

3.1 Distribution System Water Monitoring

For purposes of water quality monitoring, District 10A is classified as a community water system. This designation determines the chemical monitoring schedule for District 10A. All source water quality monitoring compliance is based on the Division's Water Quality Inquiry (WQI) database. All chemical water quality monitoring from the sources must be submitted to the Division via electronic data transfer (EDT). In order for EDT to work properly, District 10A must identify the samples with the correct primary station code. The past water quality monitoring results for District 10A are included in the WQI database.

3.2 Surface Water Treatment Rule (SWTR) Monitoring

District 10A is required to monitor for chlorine residual through the distribution system and maintain water quality complaints. District 10A sends a monthly report to the Division summarizing the required SWTR monitoring; during 2017 all of the distribution samples had a detectable chlorine residual and there were no water quality complaints.

3.3 Distribution Bacteriological Monitoring

Because District 10A receives continuously chlorinated water from San Luis Obispo County Service Area 10 – Cayucos Water Treatment Plant, District 10A is required to collect two monthly bacteriological samples from within the distribution system. All bacteriological monitoring shall be submitted directly to the Division by the 10th day of the following month. Since the last sanitary survey in 2014, the most recent positive total coliform bacteriological sample occurred in January 2018. District 10A collected three repeat sample results and they were absent for total coliform and *E. coli* bacteria. The following month, District 10A collected six routine samples from within the distribution system and the sample results were absent for total coliform and *E. coli* bacteria.

District 10A needs to ensure that five routine bacteriological samples are collected the following month that a positive total coliform sample result is found in a routine distribution system bacteriological sample. In addition, any time the system pressure drops below 5 psi, District 10A needs to provide a Boil Water Order (BWO – Tier 1 Public Notification) to all users of District 10A following notification of the event to the Division and the San Luis Obispo County Environmental Health Department. District 10A needs to remain on the BWO until special investigative bacteriological samples show that the water in the distribution system is free from coliform bacteria.

3.4 Lead and Copper Rule Monitoring

District 10A completed the seventh triennial lead and copper sample tap monitoring on August 14, 2017. The 90th percentile lead and copper concentrations were 0.0058 mg/L and 0.62 mg/L, respectively. The next triennial monitoring for lead and copper is required to be collected between the summer months of June 1st and September 30th of 2020. The lead and copper samples are to be collected as first-flush samples from the tap. District 10 needs to submit the results to the Division by October 1, 2020. A summary of the lead and copper tap monitoring results is provided below.

Table 2: Historical Lead and Copper Rule Monitoring

Sample Type	Date	# of samples required	# of samples Taken	90% Lead (mg/L) AL = 0.015 mg/L	90% Copper (mg/L) AL = 1.3 mg/L
1 st 6 month	10/1/1993	20	20	ND	1.07
2 nd 6 month	3/1/1994	20	20	ND	1.01
1 st Annual	8/1/1995	10	10	ND	0.80
2 nd Annual	9/1/1996	10	10	ND	0.93
1 st Triennial	9/1/199	10	10	ND	0.70
2 nd Triennial	8/27/2002	10	10	ND	0.11
3 rd Triennial	9/16/2005	10	10	ND	0.48
4 th Triennial	8/13/2008	10	11	ND	0.56
5 th Triennial	7/29/2011	10	10	ND	0.35
6 th Triennial	8/13/2014	10	10	ND	0.18
7 th Triennial	8/14/2017	10	11	0.0058	0.62
8th Triennial	10 Samples due in June, July, August, September 2020				

3.5 Stage 2 Disinfection Byproduct Monitoring

Since continuous chlorination treatment is provided, District 10A is required to comply with the Disinfection Byproduct (DBP) Rule. The Stage 2 DBP Rule took effect on October 1, 2013. To comply with the Stage 2 DBP Rule monitoring requirements, District 10A is required to collect one sample per quarter for trihalomethanes (TTHM) and haloacetic acids (HAA5) from the 3440 Gilbert and 3247 Ocean sampling locations. The results of Stage 2 DBP monitoring must be submitted to the Division via EDT. Table 3 summarizes the last monitoring completed for the Stage 2 DBPs. **District 10A is due to monitor for DBPs by May 31, 2018.**

Table 3: Last Results for Stage 2 DBP Monitoring.

PS Code	Sample Site Location	Sample Date	TTHM Result (µg/L)	HAA5 Result (µg/L)
4010901-002	3440 Gilbert	2/20/2018	57.3	12.0
401901-003	3247 Ocean	2/20/2018	48.6	10.1
Next monitoring due by May 31, 2018				

3.6 Maximum Residual Disinfection Level (MRDL)

District 10A needs to continue to submit the monthly system average chlorine residual to the Division on a quarterly basis. The Maximum Residual Disinfectant Level (MRDL) of 4.0 mg/L needs to be complied with based on a running annual average (RAA). The chlorine residual RAA is 1.24 mg/L.

V. SYSTEM APPRAISAL

The San Luis Obispo County Service Area 10A - Cayucos (District 10A) water supply facilities are in good sanitary condition and appear to be operating satisfactorily under competent supervision. District 10A uses purchased water from the San Luis Obispo County Water District 10 - Cayucos Water Treatment Plant to regularly meet system demand. District 10A's storage consists of a 210,000 gallon storage tank. Based on the production numbers reported in the EAR, District 10A does not have adequate storage capacity to meet the Division's MDD requirement. However, District 10A has not experienced any water shortages. Additionally, District 10A is in the planning phase of constructing an additional storage reservoir that is greater than 100,000 gallons. The purpose of the additional storage reservoir is to meet fire flow demand.

VI. CONCLUSION AND RECOMMENDATIONS

The San Luis Obispo County Service Area 10A - Cayucos must address the following items that were noted during the 2018 inspection and a subsequent file review:

1. By **July 1, 2018**, District 10A needs to compile an inventory of known lead user service lines in use in its distribution system and identify areas that may have lead user service lines in use in its distribution. The information needs to be submitted in the 2017 Electronic Annual Report.
2. By **May 31, 2018**, District 10A is due to monitor for DBPs at the 3440 Gilbert and 3247 Ocean sampling locations.

Report By: Jason Cunningham, E.I.T.
Water Resource Control Engineer

Attachment A: SLO CSA District 10A - Cayucos Map/ Inspection Photos – March 28, 2018

ATTACHMENT A

SLO CSA District 10A – Cayucos Map/ Inspection Photos – March 28, 2018