Coastside County Water District

WS 4110011

2016 UPDATE TO THE WATERSHED SANITARY SURVEY

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TABLE OF CONTENTS

APPENDICES

I. INTRODUCTION

The Surface Water Filtration and Disinfection Treatment Regulations (SWTR), Section 64665, Title 22, California Code of Regulations (CCR) require that each supplier subject to the SWTR shall conduct a watershed sanitary survey once every 3 years and every 5 years for systems with outstanding performance. The Coastside County Water District (District) is an outstanding performance water district and currently utilizes surface water from Denniston Creek as a supply source. The District plans to use water from San Vicente Creek as a supply source but presently there are no facilities in place for use of that source. The District does have a non-perfected water right for diversion of surface water from San Vicente Creek and considers it to be a potential future water supply source.

Cabrillo Farms with superior right does divert some water from the San Vicente Creek to fill one of its ponds via a small structure that was constructed back in the 1970s. The District is currently in negotiations with the Department of Water Resources to perfect their water right to the San Vicente watershed. The District must obtain an extension of its permit to 2021 so that construction of permanent facilities and conveyance structures can take place. The progress for this project was delayed during the last period but is anticipated for the next period.

In 1996 the District prepared its initial watershed sanitary survey (WSS) for Denniston & San Vicente Creek watersheds. The Department of Public Health has on file the initial WSS as well as the 2001, 2006 and 2011 updates.

The current report, dated July 2016, is the required 5-year update of the sanitary survey report for the Denniston Watershed. The San Vicente Creek Watershed is not included, as the District has not utilized it during this update period. Future updates to the WSS will include the San Vicente Creek Watershed at such time as the District utilizes its surface waters.

II. FINDINGS, CONCLUSIONS & RECOMMENDATIONS

A. Findings and Conclusions:

1. The District currently diverts surface water from Denniston Creek at Denniston Reservoir, and the District plans on continuing these diversions.
2. The Peninsula Open Space Trust (POST) ownership of the valley floor area has changed to the Golden Gate National Recreation Area (GGNRA) and resulted in minor change in land usage. (Appendix A).
3. The Consultant performed a field investigation of potential contaminant sources. Ground survey found riparian vegetation intact along the Denniston Creek protecting the stream environment, and significant natural vegetative boarders surrounding the farm fields. A no entry into the riparian policy exists for the farm workers. No evidence of inappropriate use was discovered.

   Currently there are no known significant potential contaminant sources.
4. The current watershed control and management practices within the Denniston watershed including those of the District, GGNRA, and the tenant farmer have been reviewed and found adequate. (Appendices A and B)
5. The water quality of the surface water from Denniston Creek and the water produced by the Denniston Water Treatment Plant is in compliance with all state drinking water standards MCLs (maximum contaminant levels).
6. The current monitoring program for untreated water from Denniston Creek and for treated water from the Denniston WTP is in conformance with current regulations.
7. The District finished the construction phase of a new pretreatment process, along with upgrades to the chemical treatment system, at the Denniston WTP.

B. Recommendations:

1. The District should continue to annually evaluate methods to decrease the susceptibility of the Denniston Project facilities to damage from natural and human causes.

2. The District should maintain a channel through the wetland upstream of the water intake in order to maintain high quality water flow, provide for a consolidated area for sediment dredging and reduce road flooding. Hand clearing of plants is the preferred method to keep the channel clear and avoid habitat impacts (see Section 1, A.13.)

III. CHANGES SINCE 2011 UPDATE

There have been no significant changes in the Denniston watershed which affects water quality since the 2011 Update Report.

Section 1. Watershed and Water Supply System

A. Watershed:

1. Location -- No changes since the 2011 report.
2. Land Uses -- No significant changes since the 2011 report. The GGNRA opens the watershed above Denniston Creek to hiking, but no horse use is allowed on upland trails and biking. This is virtually the same use as POST but without the horses. The use is mostly by locals who know how to access the area and there is no indication of significant increase to the visitor base. The areas of access and use are the same, so the interest group remains the same except for the loss of the horse community.
3. Zoning -- -- No changes since the 2011 report.
4. Land Ownership -- -- POST changed to GGNRA since the 2011 report. The ownership change was 12/9/2011. The mission of the GGNRA is preservation of the watershed, view shed and ecological values through low impact use. The land is protected from planned golf links, subdivisions and ranchettes.
5. Population -- -- No changes since the 2011 report.
6. Topography -- -- No changes since the 2011 report.
7. Geology -- -- No changes since the 2011 report.
8. Soils -- -- No changes since the 2011 report.
9. Landslide Susceptibility -- No changes since the 2011 report.
10. Seismic Information -- -- No changes since the 2011 report.
11. Precipitation, Runoff and Flooding Potential -- -- No changes since the 2011 report. California has been in a prolonged drought but with some flashy storm events. Flooding of a small portion of access road to the treatment facility has occurred which resulted in additional creek brush clearing to aid flow. Rock may be brought in to raise the road bed.
12. Hydrology -- -- No changes since the 2011 report.

13. Reservoir Characteristics of Denniston Reservoir – As mitigation for the continuous sedimentation of the Denniston Reservoir the District undertook a small dredging project to clear accumulated material near the reservoir outlet and open a small channel to the reservoir inlet (Appendix C). No major water quality problems, such as taste and odor from algae blooms, have occurred within the past 5 years. However, the potential for algae issues was possible since the channel passing through Tule overgrowth upstream of the intake was closed and could not be reached by dredging. A permit through the CA Department of Fish and Wildlife was obtained and a hand cleared channel through the overgrowth was achieved. Clear water now passes through that reach lowering the risk of algae and bacteria influence.
14. Wetland Characteristics -- -- No changes since the 2011 report.
15. Groundwater Recharge -- -- No changes since the 2011 report.

B. Water Supply System:

1. History -- -- No changes since the 2011 report.
2. Service Area Characteristics -- -- No changes since the 2011 report.
3. Water Supply Sources -- -- No changes since the 2011 report.
4. Facilities -- -- The water treatment facility has been upgraded as projected in the 2011 report and the improvements have been signed off by the oversight agencies. .
5. Emergency Plans -- -- No changes since the 2011 report

Section 2. Potential Contaminant Sources in the Watersheds

Larry McCollum of LJMWQC conducted a basic field survey of the Denniston watershed and reservoir on May 19, 2010 to review the status of potential contaminant sources. Interviews of District staff were also utilized to confirm watershed conditions during the period covered by this update.

A. Potential Contaminant Sources -- No changes since the 2011 report.

B. Significance of Potential Contaminant Sources -- -- No changes since the 2011 report. That report concludes that there are no significant potential contaminant sources within the Denniston watershed area, and therefore the potential for contamination of this supply source is unlikely.

C. Anticipated Growth and Projected Changes in Sources of Contaminants -- -- No changes since the 2011 report. The report concludes that there are no known changes planned for the land in either of the watersheds, and because of zoning and planning policies most types of development would be extremely difficult. No changes in sources of contaminants are anticipated for the same reasons.

D. The current ownership of the valley floor was transferred by POST to the Golden Gate National Recreation Area (GGNRA) during the period of the last WSS update. The GGNRA provides very low impact recreation such as hiking in the watershed upstream of the intake. This is similar to the activities allowed by POST except horse riding is presently restricted.

Section 3. Watershed Control and Management Practices

This section contains a discussion of existing and recommended watershed management practices for protection of drinking water quality for the Denniston Watershed.

A. Water Agency Management Practices for the Denniston Watershed -- -- No changes since the 2011 report.

B. Other Agencies with Watershed Control Authority -- -- The changes since the 201 report are minor and positive since the new ownership by GGNRA.

C. Water Agency Coordination Measures -- -- No changes since the 2011 report.

D. Recommended Control Measures -- This update report concludes that the current control measures for the Denniston watershed appear adequate.

However, as with all of the District's facilities, it is recommended that the District continue to evaluate methods to decrease the susceptibility of the Denniston Project facilities to damage from natural and human causes. To this aim the District has instituted vegetation management immediately upstream of the

intake and will continue dredging as needed to reduce sedimentation at the intake. The dredged area provides room in the reservoir for upstream land erosion due to storm events.

Section 4. Water Quality

This section contains a summary and evaluation of collected water quality data. The District monitors both the untreated and treated water in conformance with DPH monitoring schedule received in 2010. See attached Appendix D for attached schedules.

A. Bacteriological – DHS does not require bacteriological samples collected from the Denniston source at the present time. Microbiological assessment as part of the LT2SWTR requirements determined placement in Bin 1.

B. Turbidity – In addition to the annual source samples, turbidity grab samples are collected daily at Denniston WTP Influent during periods that the plant is online. To mitigate the historic, periodic high turbidity attributed to the silt accumulation behind the Denniston dam, a dredging project was conducted as described in III.1.A.13, above and in Appendix C. The Denniston WTP is shut down during periods of high turbidity. An on-line turbidity meter is in place and monitors the influent turbidity constantly while the WTP is online.

C. Iron and Manganese – Plant influent and effluent are monitored weekly for Iron and Manganese. Confirmation samples are collected weekly and sent to a contract lab for analysis. Raw water manganese levels average 0.1 mg/l and iron 1.3 mg/l in the annual sampling during the period of this update. Treated water manganese and iron levels average ND in the treatment plant effluent.

D. pH -- pH grab samples are collected daily at Denniston WTP influent and effluent. The pH of the untreated water ranges from 6.7 – 7.7. Effluent pH is targeted at levels over 8.0 for corrosion control using the Langelier Saturation Index.

E. Temperature – The temperature of the untreated and treated water at Denniston WTP is analyzed daily and is used for CT calculations.

F. Organic Chemicals –There have been no hits for any SOCs or VOCs in the Denniston watershed during the period of this update.

G. Inorganic Chemicals – When the plant is on line, General Mineral and General Physical constituents are monitored monthly and Inorganic constituents are monitored annually. Aluminum and Iron continue to be monitored weekly. The raw water remains easy to treat and all constituents are reduced to levels below their respective MCL at the plant effluent. Improvements to the flash mixer in January 06 improved coagulation efficiency. At the time of this report, and with the acceptance of plans by DPH, Denniston WTP has undergone major upgrades to the chemical delivery and control, solids handling, SCADA and pretreatment systems. These changes are signed off and operating.

H. Radionuclides –Radium levels were below the DLR in all four quarters of samples collected in 2015.

Evaluation of Ability to Meet Surface Water Treatment Regulations Requirements:

A. SWTR/IESWTR/LT1ESWTR/Stage1D-DBPR -- The Denniston WTP is in compliance with the current regulations.

B. Filter Backwash Rule – The Denniston WTP has dealt with issues raised in the 2011 Update and is currently in compliance with the FBR.

Evaluation of Ability to Meet Future Surface Water Treatment Regulations Requirements:

A. LT2SWTR – The results of District sampling have place it in Bin 1.

B. Stage 2 DBPR -- The Denniston WTP has dealt with issues mentioned in the 2011 Update and will be compliant with the Stage 2 DBPR.