

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION**

**RESOLUTION No. R2-2016-0011**

**CONCURRENCE WITH FINDINGS OF THE  
NUTRIENT MANAGEMENT PLAN  
FOR THE  
LIVERMORE VALLEY GROUNDWATER BASIN**

WHEREAS, the California Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board), finds that:

1. On May 14, 2009, the State Water Resources Control Board (State Water Board) adopted the “Policy for Water Quality Control for Recycled Water” (Recycled Water Policy; Resolution No. 2009-01 as amended by Resolution No. 2013-03<sup>1</sup>). The Recycled Water Policy requires the State and Regional Water Boards to exercise the authority granted to them by the Legislature to the fullest extent possible to encourage the use of recycled water, consistent with State and federal water quality laws.
2. The Recycled Water Policy requires, among other things, that Salt and Nutrient Management Plans (SNMPs) be completed for all groundwater basins in California. It is the intent of the Recycled Water Policy that salts and nutrients from all sources be managed in a manner that ensures attainment of water quality objectives and protection of beneficial uses. The State Water Board found that the appropriate way to address salt and nutrient issues is through the development of regional or sub-regional salt and nutrient management plans rather than through imposing requirements solely on individual recycled water projects. The intent of the Recycled Water Policy is for local water and wastewater entities, together with contributing stakeholders, to develop a SNMP for each groundwater basin/sub-basin to assess water quality and evaluate strategies for complying with salt and nutrient water quality objectives.
3. The Zone 7 Water Agency (Zone 7) has actively managed groundwater in the Livermore Valley Groundwater Basin (California Department of Water Resources [DWR] Basin No. 2-10<sup>2</sup>, herein the Livermore Valley Basin) for over 50 years. The Livermore Valley Basin encompasses an area of approximately 66 square miles in eastern Alameda County, extending 14 miles east to west and three to six miles north to south. The Livermore Valley Basin is divided into four sub-basins<sup>3</sup> due to water quality and yield differences: the Main sub-basin, and the Northeast Fringe, North Fringe, and East Fringe sub-basins (Figure 1).
4. The Basin Plan designates the following existing beneficial uses for groundwater in the Livermore Valley Basin: Municipal and Domestic Supply, Industrial Service and Process Supply, and

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<sup>1</sup> State Water Resources Control Board. *Recycled Water Policy, Resolution 2009-01*. Amended by Resolution 2013-0003. January 2013.

<sup>2</sup> DWR (California Department of Water Resources). 2003. California’s Groundwater Bulletin 118 Update 2003. October 2003.

<sup>3</sup> The basins are herein referred to as sub-basins even though this is not a formal designation by DWR or within the San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan), California Regional Water Quality Control Board, San Francisco Bay Region, amended March 20, 2015.

Agricultural Supply. Table 3-7 in the Basin Plan specifies Water Quality Objectives (WQOs) for nitrate (as NO<sub>3</sub>, the primary nutrient of concern for the Livermore Valley Basin) in groundwater at 45 milligrams per liter (mg/L), for at least 90% of each year, in the Main and Fringe sub-basins.

5. Zone 7 developed a Nutrient Management Plan (NMP<sup>4</sup>,) for the Livermore Valley Basin with support and input from the Regional Water Board, the Alameda County Environmental Health Department (ACEH), the Alameda County Community Development Agency (Alameda CDA), Zone 7's Retailers (City of Livermore, City of Pleasanton, Dublin San Ramon Services District [DSRSD], and California Water Service), and other stakeholders. Zone 7 has filed a Notice of Exemption from the California Environmental Quality Act with the Alameda County Clerk-Recorder for the NMP.
6. The NMP was prepared as an addendum to Zone 7's Salt Management Plan (SMP) to address salt loading in the Livermore Valley Basin and to fulfill the requirements of the Regional Water Board's joint Master Water Recycling Permit (Order No. 93-159) and General Water Reuse Order (General Order No. 96-011). The SMP was approved by the Regional Water Board in 2005<sup>5</sup>. The SMP and the NMP are incorporated into Zone 7's Groundwater Management Plan (GMP) for the Livermore Valley Basin, which provides annual updates on the status of salt and nutrient management.
7. The NMP contains the following components in compliance with the Recycled Water Policy:
  - a) The NMP considers and proposes to manage nutrients from all sources, including recycled water projects, on a basin-wide basis in a manner that ensures attainment of WQOs and protects beneficial uses. The NMP finds that in 2013 the average nitrate concentrations in the Main and Fringe sub-basins were about 14 mg/L (compared to the nitrate water quality objective of 45 mg/L). This results in a baseline of 31 mg/L of existing assimilative capacity.
  - b) The NMP finds that recycled water projects in the Livermore Valley Basin are projected to increase from the current 4,500 acre feet per year (AFY) of recycled water applied as landscape irrigation to 7,300 AFY over the next 35 years. All projects will use tertiary-treated recycled water for landscape irrigation; none propose to use recycled water for direct aquifer recharge. Recycled water projects will offset an equivalent amount of potable water use. This offset is about 9 percent of the total potable water demand for the Livermore Valley Basin today and is projected to be 15% by 2050.
  - c) The NMP assesses changes in assimilative capacity related to recycled water projects and other nutrient sources. To predict future water quality conditions, Zone 7 used a mixing model and projected nutrient loading over a 35-year planning period (through 2050). Over that time, the model predicts that average nitrate concentrations will decrease in the Main and Northeast Fringe sub-basins, while increasing only slightly in the North and East Fringe sub-basins (by 3 mg/L, or 9% of assimilative capacity in the North Fringe sub-basin, and by 1 mg/L, or 3% of assimilative capacity in the East Fringe sub-basin). Furthermore, total nutrient loading associated with recycled water projects is less than 1% of the total loading from all other sources combined, including agricultural irrigation and fertilizer application, horse boarding facilities, and discharges from septic systems.

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<sup>4</sup> Nutrient Management Plan, Livermore Valley Groundwater Basin, Zone 7 Water Agency, July 2015.

<sup>5</sup> San Francisco Bay Regional Water Quality Control Board Basin Plan General Update, Resolution No. R2-2005-0062, November 2005.

- d) The NMP finds that use of tertiary-treated recycled water for landscape irrigation as currently exists, and as projected in the Livermore Valley Basin, will 1) contribute only a minimal increase (<1 mg/L) in groundwater nitrate concentrations at urban build-out, 2) not use more than 20% of the available assimilative capacity, collectively, as specified in the Recycled Water Policy, and 3) not cause groundwater quality to exceed Basin Plan WQOs.
- e) The NMP includes a significant stormwater recharge component. Zone 7 artificially recharges the Livermore Valley Basin using natural stormwater runoff and imported water from the State Water Project, which is stored in and released from Lake Del Valle, to local streams and former gravel quarry pits for percolation to aquifers. Stormwater capture comprises about 15 percent of the total basin artificial recharge. The NMP also encourages continued use of existing low-impact development practices to increase the capture and infiltration of stormwater on a local scale.
- f) The NMP includes a monitoring plan that is adequate to provide a reasonable, cost-effective means of determining if nutrient concentrations are consistent with applicable WQOs. The groundwater quality monitoring program focuses on the Main sub-basin where groundwater is pumped for municipal uses, but monitoring stations are also located to assess conditions in the fringe sub-basins. Zone 7 samples groundwater at least annually from all accessible groundwater wells in the program. Samples are analyzed by Zone 7's laboratory for metals and general minerals including nitrate and phosphate. Monitoring results will be reported in Zone 7's annual GMP reports. At the same time, Zone 7 will continue to compile and review data on the volume and quality of wastewater collected and recycled within the Livermore Valley watershed.
- g) The NMP includes implementation measures to sustainably manage nutrient loading. The largest sources of nutrient loading in the Livermore Valley Basin include agricultural and landscape irrigation/fertilizer application, horse boarding facilities, and onsite wastewater treatment systems (OWTS). The NMP proposes to address the first two sources through the use of "best management practices" (BMPs) such as applying fertilizers at agronomic application. The NMP proposes to address OWTS sources as follows: 1) continued implementation of Zone 7's Wastewater Management Plan (WMP) policies that limit new development served by an OWTS to a minimum of one rural residential equivalence per five acres, 2) Regional Water Board-issued Waste Discharge Requirements (WDRs) for winery and other commercial/industrial waste discharges, 3) Zone 7 support for implementation of Alameda County's OWTS regulations, including scrutiny of any variances, and 4) Zone 7 recommendations to ACEH for special criteria and performance measures for new and replacement OWTS with advanced nitrogen-reducing treatment to be incorporated into Alameda County's Local Agency Management Program (LAMP), which is currently under development. The State Water Board's OWTS Policy sets forth a deadline of May 2016 for local agencies to submit LAMPs for Regional Water Board review and approval. In addition, Zone 7 will continue tracking land use changes to refine potential changes in future salt and nutrient loading estimates.
- h) The NMP is consistent with the goals and requirements of State Water Board Resolution No. 68-16 "Statement of Policy with Respect to Maintaining High Quality of Waters in California" (State Antidegradation Policy). The use of recycled water will produce minor effects that will not result in a significant reduction of water quality, and, therefore, a complete antidegradation analysis is not required. The State Water Board finds in the Recycled Water Policy that "The

use of recycled water in accordance with this Policy [Recycled Water Policy], that is, which supports the sustainable use of groundwater and/or surface water, which is sufficiently treated so as not to adversely impact public health or the environment and which ideally substitutes for use of potable water, is presumed to have a beneficial impact.” Under this presumption, any change in groundwater quality from increasing the use of recycled water in the Livermore Valley Basin is consistent with providing maximum benefit to the people of the State.

8. The NMP also identifies ten local Areas of Concern (AOCs) within the Livermore Valley Basin (see Figure 1) that exhibit nitrate concentrations above the Basin Plan’s WQO (45 mg/L as NO<sub>3</sub>). These ten AOCs are believed to be vestiges of past agricultural land uses and processes and former municipal wastewater and sludge disposal practices; however, five of the areas are outside of municipal Urban Growth Boundaries where sewage disposal continues to be by OWTS. These include Happy Valley, Buena Vista, Mines Road, May School, and Greenville (Figure 1).
9. To address nitrate conditions in these areas, the NMP advocates an adaptive strategy that includes the following:
  - Zone 7 will recommend to ACEH special criteria in the five AOCs that are outside municipal urban growth boundaries to minimize nitrogen loading over time by requiring new or replacement OWTS with advanced nitrogen-reducing treatment when the opportunities arise.
  - Zone 7 will work with ACEH to develop an OWTS monitoring plan that may require that owners and developers install additional monitoring wells.
  - Zone 7 will identify data gaps and suggested locations and depths for new monitoring wells and/or soil borings for expedited groundwater sampling in the AOCs.
  - Zone 7 will continue to monitor groundwater quality and refine nitrate concentration maps to better understand the extent and source(s) of high nitrate concentrations in the AOCs and refine the extent of the special OWTS permitting areas.
10. A Substitute Environmental Document (SED) was prepared by the State Water Board for the Recycled Water Policy in accordance with the State Water Board’s certified regulatory program (Cal. Code Regs., Title 23, §§ 3775-3781). The State Water Board approved the Recycled Water Policy and the SED on May 14, 2009. Because the resolution falls within the scope of the Recycled Water Policy as analyzed by the State Water Board in the SED for the Recycled Water Policy, this resolution does not require further environmental review pursuant to CEQA (Pub. Res. Code § 21166). In addition, Zone 7 has filed a Notice of Exemption for the NMP. This resolution consists of only general descriptions of existing regulations and water quality information from the Livermore Valley NMP and does not include any regulatory changes. It therefore is not a “project” as defined in CEQA. There is no possibility that the activity in question may have a significant effect on the environment (Cal. Code Regs., Title 14, §§ 15378 and 15061, subd. (b)(3) and Cal. Code Regs., Title 23, § 3720).
11. Regional Water Board staff prepared and distributed for public comment this resolution on February 19, 2016. The resolution was distributed to Zone 7 and stakeholders for comment. No comments were received.
12. On March 9, 2016, the Regional Water Board, in a public meeting, heard and considered comments that pertain to the resolution.

NOW, THEREFORE, BE IT RESOLVED THAT, the San Francisco Bay Regional Water Board:

1. Recognizes the imperative for increased recycled water development and use in the San Francisco Bay Region and supports the proposed increase in recycled water use for landscape irrigation in the Livermore Valley Basin from 4,500 AFY today to 7,300 AFY by 2050;
2. Recognizes the benefits of developing and implementing salt and nutrient management plans for the preservation and/or enhancement of the quality of the Region's water resource;
3. Recognizes that Zone 7 has developed the Livermore Valley Basin NMP in a manner consistent with the Recycled Water Policy;
4. Recognizes that on a basin/sub-basin scale, water quality objectives are not exceeded, assimilative capacity for nutrients exists, and the recycled water projects will not use more than 20% of the assimilative capacity, collectively;
5. Recognizes that the NMP, including the identified steps to improve the understanding of water quality in the areas of high nitrate, provides an adequate, reasonable, and cost-effective means of monitoring and evaluating water quality to determine if nutrient concentrations are consistent with applicable water quality objectives;
6. Recognizes that there are ten localized AOCs, including five that are outside of municipal wastewater collection service areas, where shallow groundwater and domestic wells have been affected by high nitrate concentrations; these impacts are believed to be vestiges of past agricultural irrigation and fertilizer use and waste disposal practices and OWTS discharges;
7. Recognizes that the nitrate impacts within the localized AOCs do not appear to threaten the overall water quality of the basin/sub-basins;
8. Recognizes that Regional Water Board staff will work collaboratively with Zone 7 to investigate nitrate impacts within the localized AOCs;
9. Recognizes that the Regional Water Board will continue to permit, as appropriate, individual recycled water projects, regulate commercial/industrial waste discharges, and consistent with the OWTS Policy, regulate OWTS discharges;
10. Determines that at this time, existing implementation measures are adequate to ensure attainment of WQOs and protection of beneficial uses and that an implementation plan, pursuant to the Basin Plan, is not necessary because 1) water quality objectives are not exceeded or threatened to be exceeded on a basin/sub-basin scale, 2) assimilative capacity for nutrients (nitrate) exists, and 3) nutrient loading from all sources, including recycled water projects, is projected to have minimal effects on nitrate concentrations and assimilative capacity basin-wide;
11. Supports triennial review of the NMP, monitoring data, and new information by Regional Water Board staff to determine if an update to the NMP or any additional implementation actions are needed, based on changes in recycled water use, stormwater recharge quantities, or groundwater quality trends, on a basin/sub-basin scale or within the localized AOCs;

12. Supports the continued efforts of Zone 7's Salt and Nutrient Management Programs to implement its stated goal to "locally manage, protect, and enhance groundwater resources for all beneficial uses in a sustainable, environmentally sound, economical, and equitable manner for generations to come;" and
13. Recognizes that Regional Water Board staff will continue to work collaboratively with Zone 7 and other stakeholders to protect the beneficial uses of groundwater in the Livermore Valley Basin.

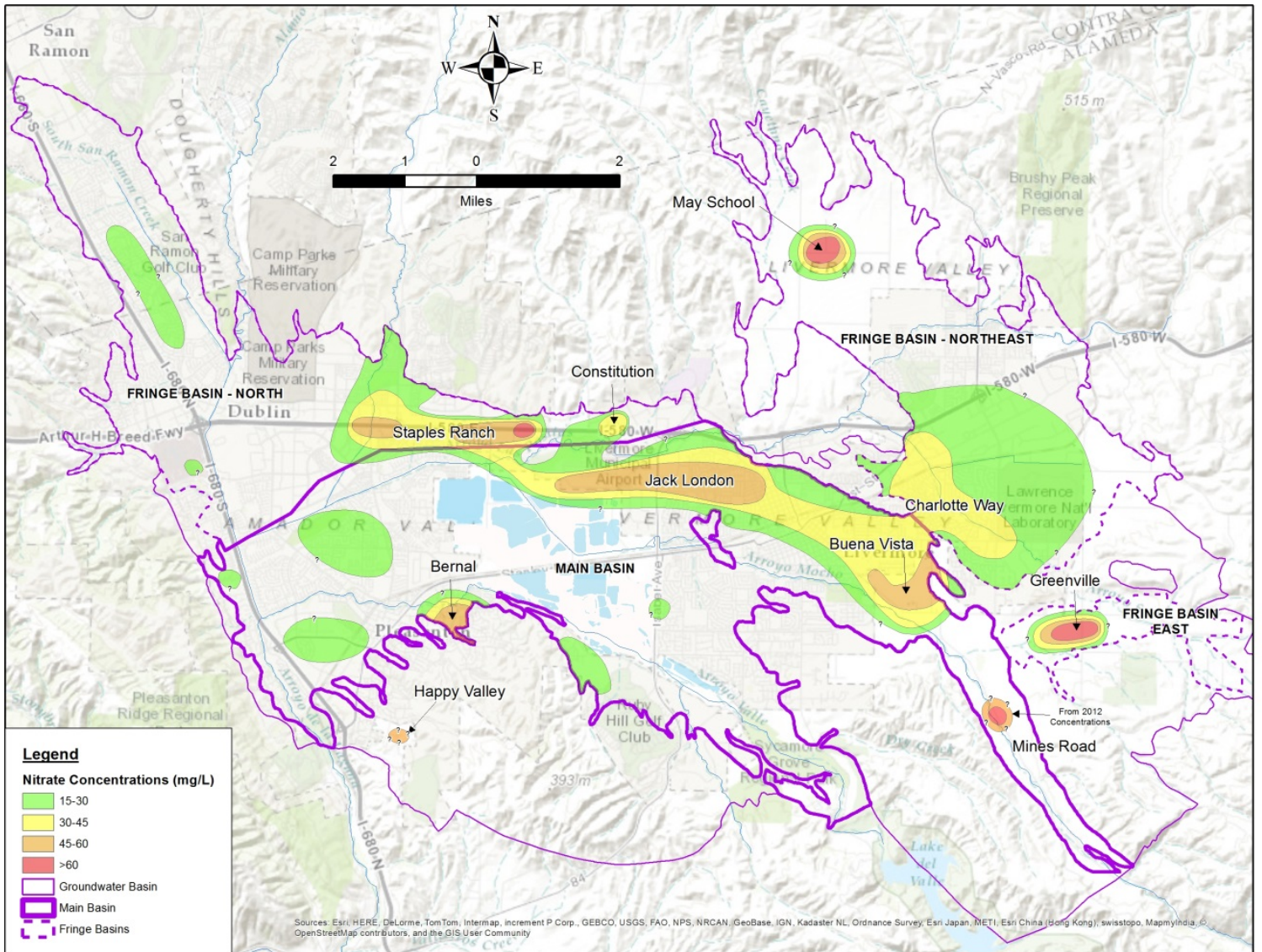
I, Bruce H. Wolfe, Executive Officer of the California Regional Water Quality Control Board, San Francisco Bay Region, do hereby certify that the foregoing is a full, true and correct copy of a resolution adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on March 9, 2016.

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Bruce H. Wolfe  
Executive Officer

Figure 1

### Livermore Valley Groundwater Basin Showing Sub-basins and Areas of Concern with Nitrate Concentrations in Upper Aquifer



(July 2015 Nutrient Management Plan, Livermore Valley Groundwater Basin, Zone 7 Water Agency)