

May 29, 2012

John H. Madigan
California Regional Water Quality Control Board
San Francisco Bay Region
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Oakland, CA 94612
jmadigan@waterboards.ca.gov
Submitted via electronic mail

Re: Comments on the Proposed NPDES Permit for South Bayside System Authority

Dear Mr. Madigan:

Thank you for the opportunity to comment on Tentative Order for the South Bayside System Authority's ("Permittee") Wastewater Treatment Plant and associated wastewater collection system, NPDES Permit No. CA0038369 ("Draft Permit"). San Francisco Baykeeper ("Baykeeper") submits these comments on behalf of our 2,300 members that live, work, and recreate in and around the San Francisco Bay. Baykeeper is a 501(c)(3) nonprofit organization with the mission of protecting the San Francisco Bay for the benefit of its ecosystems and surrounding communities. Please address the following concerns to ensure that the Draft Permit adequately protects water quality and public health in the Bay Area.

1. The Water Quality-Based Effluent Limitations for Ammonia Were Developed in the Absence of Readily Available Site-Specific Data.

The Draft Permit's water quality-based effluent limits ("WQBELs") for ammonia were reportedly based on data from the Regional Monitoring Program ("RMP"), collected near Yerba Buena Island, approximately 24 miles north of the Permittee's Treatment Plant.

The Draft Permit indicates that use of data from this distant monitoring station is appropriate because "San Francisco Bay is a very complex estuarine system with highly variable and seasonal upstream freshwater inflows and diurnal tidal saltwater inputs." Draft Permit, F-20. Use of unrepresentative sites for the purposes of a Reasonable Potential Analysis or for the development of effluent limits is inconsistent with state requirements. We request that site-specific data be utilized to develop effluent limitations for ammonia, and that effluent limits reflect the fact that the Lower South Bay is already nutrient enriched, prompting the Regional Board to require nearby treatment plants to achieve significant reductions in ammonia discharge.

Pursuant to the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, referred to as the State Implementation Policy ("SIP"), background water quality data must be "representative" of the ambient receiving water that will mix with discharges. SIP, page 5. This means that "preference should be given to ambient water column concentrations measured immediately upstream or near the discharge, but not within an allowed mixing zone for the discharge." SIP, page 18. Regional Board Staff feels

that data collected from Yerba Buena Island is in fact representative, though data collected by the United States Geologic Service (“USGS”) indicates that the nutrient characteristics of these sites are quite different. *See* Table 1, below. Further, Staff did not consider that the nutrient status of the Lower San Francisco Bay likely warrants restrictions on ammonia discharges from the Permittee. Instead, staff called for an average monthly effluent limit (“AMEL”) of 170 mg/L, which is among the highest numeric effluent limits for ammonia of any publically owned treatment works (“POTW”) in the region.¹ This is inconsistent with the Water Quality Control Plan for the San Francisco Bay (“Basin Plan”), which states that any wastewater with “particular characteristics of concern to beneficial uses to the San Francisco Bay south of the Dumbarton Bridge” must be prohibited. Basin Plan, Table 4-1 (Discharge Prohibition 2).

Table 1 contains average concentrations of nitrogen species, chlorophyll, and dissolved oxygen at USGS Monitoring Stations 30 and 18, based on routine sampling data from 2000 to 2012. Values of chlorophyll and dissolved oxygen are read from multiple depths at each site, and the values provided in Table 1 are averages across all depths. Point Blunt is approximately 3.7 miles north-west of Yerba Buena Island and is referenced here since this station is monitored more heavily than the other sites located closer to Yerba Buena Island. Monitoring Station 30 at Redwood Creek is approximately 1.5 miles south-east of the Permittee’s discharge point.

Table 1. Results of USGS monitoring in vicinity of the South Bayside Wastewater Treatment Plant and Yerba Buena Island (2000-2012)²

Station Number	Location	Season	Nitrate + Nitrite (mg/L)	Ammonium (mg/L)	Calculated Chlorophyll (mg/m3)	Calculated Oxygen (mg/L)
30	Redwood Creek	wet	3.67 (n=84)	0.12 (n=84)	9.22 (n=1,507)	8.25 (n=1,459)
		dry	1.78 (n=90)	0.05 (n=90)	9.01 (n=1,421)	7.27 (n=1,446)
18	Point Blunt	wet	2.02 (n=63)	0.09 (n=63)	3.46 (n=3,312)	7.85 (n=3,217)
		dry	1.86 (n=53)	0.08 (n=53)	5.45 (n=3,021)	7.24 (n=3,032)

Concentrations of nitrate plus nitrite are significantly higher during wet weather periods in the vicinity of the Treatment Plant, while chlorophyll is consistently higher year-round. Dissolved oxygen is inconsistent with the chlorophyll data, though this is likely a reflection of stratification and general uncertainty regarding nutrient dynamics in the San Francisco Bay Estuary. Recent analysis of water quality data collected by USGS from 1978 to 2009 showed a significant increase in water column chlorophyll-a per decade (30-50% per decade from Suisun to South Bay respectively) and a significant decline in dissolved oxygen concentrations (1.6 to 2.5% in

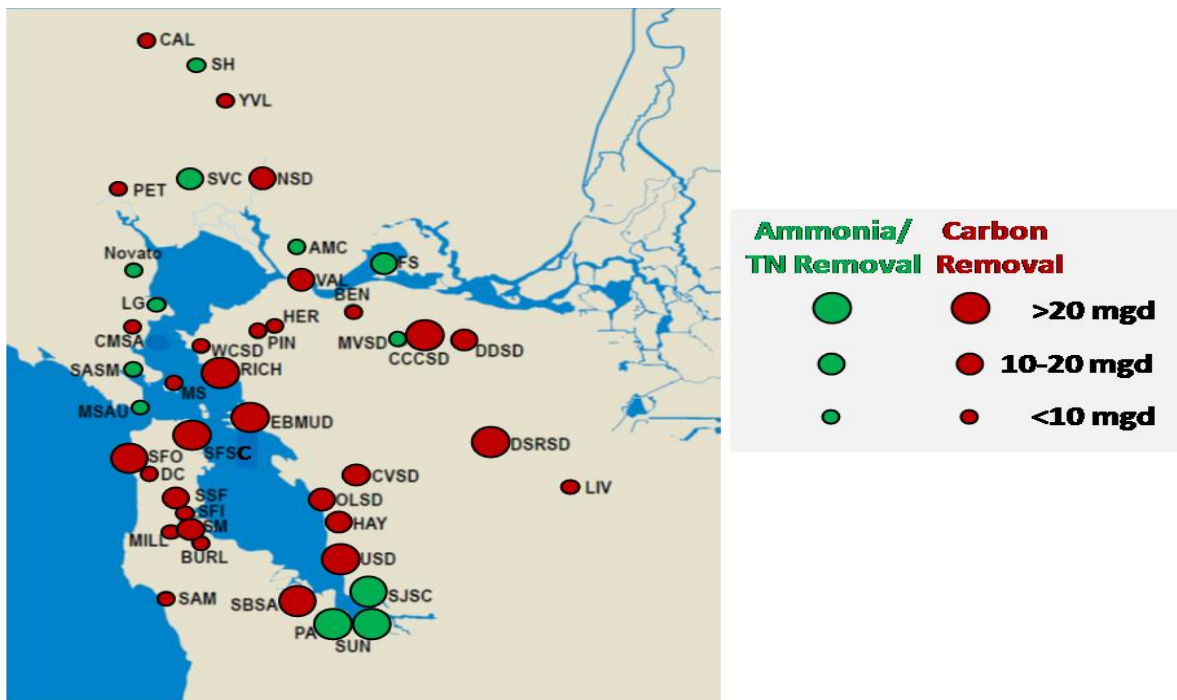
¹ Only the Sausalito-Marín Sanitation District has a higher AMEL of 180 mg/L.

² Based on data available at <http://sfbay.wr.usgs.gov/access/wqdata/>.

South Bay and Suisun Bay respectively).³ In addition, several peer reviewed studies from recent years have indicated that the historic resilience of the San Francisco Bay to the harmful effects of nutrient enrichment is weakening and that management actions are likely necessary.^{4,5,6}

For some time, the Regional Board has recognized the South Bay experiences nutrient enrichment and that poor circulation patterns, in comparison with the Central Bay, require ammonia removal efforts. These requirements have been applied in a seemingly arbitrary manner, especially since the Board requires only POTW in the Lower South Bay to reduce ammonia loads, even though the entire South Bay has experienced elevated chlorophyll concentrations and depressed dissolved oxygen. See Figure 1, below, as well as the interactive map of Region 2 ammonia discharges, available at <http://baykeeper.org/content/ammonia-discharges-san-francisco-bay-municipal-wastewater-treatment-plants>.

Figure 1. Map depicting POTWs in Region 2 subject to ammonia/total nitrogen removal



³ L. McKee, L. A. Gilbreath, J. Beagle, D. Gluchowski, J. Hunt and M. Sutula. 2012. *Draft Numeric Nutrient Endpoint Development for San Francisco Bay Estuary: Literature Review and Data Gaps Analysis*. Available at www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/planningtmdls/amendments/estuaryinne.shtml.

⁴ Cloern, J.E., A.D. Jassby, J.K. Thompson and K.A. Hieb. 2007. *A cold phase of the East Pacific triggers new phytoplankton blooms in San Francisco Bay*. *Proceedings of the National Academy of Sciences* 104 (47):18561-18565.

⁵ Dugdale, R.C., F.P. Wilkerson, V.E. Hogue and A. Marchi. 2007. *The role of ammonium and nitrate in spring bloom development in San Francisco Bay*. *Estuarine, Coastal and Shelf Science* 73:17-29.

⁶ McKee, L.J., Sutula, Gilbreath, A.N., Beagle, J., Gluchowski, D., and Hunt, J. 2011. *Numeric nutrient endpoint development for San Francisco Bay- Literature review and Data Gaps Analysis*. Southern California Coastal Water Research Project Technical Report No. 644. Available at www.sccwrp.org.

The three POTWs south of the Dumbarton Bridge at Sunnyvale, Palo Alto, and San Jose are required to reduce ammonia levels below 18 mg/L, 2.7 mg/L, and 3 mg/L, respectively. Despite being located in the vicinity of these plants, in an area known to be exhibiting signs of over-enrichment, the Draft Permit includes extremely high effluent limits for ammonia. Under the current permit (Order No. R2-2007-0006), the Permittee has no numeric effluent limit for ammonia and no nutrient data is readily available from the Permittee to determine whether significant process modifications would be necessary to reduce nitrogen loading to the San Francisco Bay. Consistent with permit requirements of other POTWs in the area, the Regional Board should take this opportunity to lower effluent limits consistent with the three neighboring facilities to the south.

2. The Effluent Limitations for Conventional and Non-Conventional Pollutants Should Not Vary by Season.

The Draft Permit includes two sets of very different effluent limitations for conventional and non-conventional pollutants based on the time of year, without any justification. Compare Table 6 (limits for May 1 through September 30), with Table 7 (limits for October 1 through April 30). In its current state, the effluent limitations for CBOD, TSS, and turbidity are double what they are during the dry season. The shift to more lenient effluent limitations during the wet season has not been shown to protect beneficial uses, and is not explained in the Fact Sheet for the Draft Permit. Insofar as the CWA declares that “it is the national goal that the discharge of pollutants into the navigable waters [is] to be eliminated by 1985,” the permit should retain the lower of the two standards for conventional and non-conventional pollutants, year-round. 33 U.S.C. § 1251(a)(1).

Thank you for considering Baykeeper’s comments. If you have any questions, please feel free to contact Abigail Blodgett at (415) 856-0444, extension 109.

Sincerely,



Staff Scientist, San Francisco Baykeeper



Abigail Blodgett
Legal Fellow, San Francisco Baykeeper