Appendix C

Response to Comments

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

RESPONSE TO WRITTEN COMMENTS

On Tentative Order for
San Jose/Santa Clara Water Pollution Control Plant and
City of San Jose and City of Santa Clara Wastewater Collection Systems
Santa Clara County

The Regional Water Board received written comments on a tentative order distributed for public comment on June 16, 2014, from the City of San Jose and the Bay Area Clean Water Agencies.

Regional Water Board staff has summarized the comments shown below in *italics* (paraphrased for brevity) and followed each comment with staff's response. For the full content and context of the comments, refer to the comment letters.

This document also contains staff-initiated revisions.

All revisions to the tentative order are shown with underline text for additions and strikethrough ~~text~~ for deletions.

City of San Jose

San Jose Comment 1

San Jose says Table 4, footnote 3, would require it to report positive residual chlorine readings at least weekly due to meter maintenance and calibration, power surges, and other occurrences that cause false-positive readings. *The previous order required reporting top-of-the-hour readings. San Jose claims the new language incentivizes discontinuing continuous chlorine monitoring.*

Response to San Jose Comment 1

We revised Table 4, footnote 2 to return to the previous order's "on-the-hour" reporting but added a requirement to also describe in the monitoring report transmittal letter any valid "between-the-hour" excursions. This addition is consistent with the 2004 compliance strategy developed between Regional Water Board staff and the Bay Area Clean Water Agencies. The strategy's sole intent was, by limiting the number of potential violations subject to mandatory minimum penalty to just one per hour, to not discourage dischargers from monitoring chlorine continuously. This puts those monitoring continuously at no more risk of mandatory minimum penalties than those monitoring hourly.

As stated in the strategy, the Regional Water Board reserves the right to use all other valid results from continuous monitoring for discretionary enforcement purposes. It is thus appropriate for the tentative order to require reporting "between-the-hour" valid chlorine levels that exceed the effluent limit so that Regional Water Board staff can evaluate the circumstances and determine if

discretionary enforcement is warranted. The tentative order does continue to limit San Jose's exposure to mandatory minimum penalties consistent with the 2004 strategy.

San Jose is advised that the revised tentative order does not require reporting false-positive readings or any values that do not represent effluent discharge conditions or to report such values as violations of the effluent limit. Reported data should only reflect verified results. San Jose should evaluate its maintenance logs, operations logs, backup meters, and other documentation to screen out false-positive readings. San Jose may choose to include false-positive results in self-monitoring report cover letters and provide a brief summary of the reason(s) for the false positive determination. This practice generally should apply to any invalidated data, not just for chlorine. This is because doing so provides for full transparency and will assist staff if raw data records are audited during future inspections. Moreover, if previously reported results are subsequently found to be invalid, San Jose should follow Attachment G, Regional Standard Provisions, section V.C.1.a.(5) to invalidate those results, and, if appropriate, we will take measures to have the official database corrected.

We revised Table 4, footnote 2 as follows:

> [2] Effluent residual chlorine concentrations shall be monitored continuously or, at a minimum, every hour. The Discharger shall describe all excursions of the chlorine limit in the transmittal letter of self-monitoring reports as required by Attachment G section V.C.1.a. ~~report for each day the maximum residual chlorine concentration observed following dechlorination using all values measured during that day. However, i~~If monitoring continuously, the Discharger shall report through data upload to CIWQS, from discrete readings of the continuous monitoring every hour on the hour, the maximum for each day and any other discrete hourly reading that exceed the effluent limit, and, for the purpose of mandatory minimum penalties required by Water Code section 13385(i), compliance shall be based only on these discrete readings ~~from the continuous monitoring every hour on the hour~~. The Discharger shall retain continuous monitoring readings for at least three years. The Regional Water Board reserves the right to use all continuous monitoring data for discretionary enforcement.
>
> The Discharger may elect to use a continuous on-line monitoring system for measuring or determining that residual dechlorinating agent is present. This monitoring system may be used to prove that anomalous residual chlorine exceedances measured by on-line chlorine analyzers are false positives ~~and are not violations of this total residual chlorine limit~~ and are not valid total residual chlorine detections because it is chemically improbable to have chlorine present in the presence of sodium bisulfite. If Regional Water Board staff finds convincing evidence that chlorine residual exceedances are false positives, the exceedances are not violations of this Order's total chlorine residual limit.

We also revised the tentative order to correct and clarify the definition of "Continuous/H" in Monitoring and Reporting Program Table E-3. Continuous monitoring for compliance with the instantaneous chlorine residual effluent limitation is best for process control. However, the revised tentative order allows hourly monitoring when continuous monitoring is infeasible (e.g., during maintenance). Specifically, we revised the Monitoring and Reporting Program Table E-3 note (Abbreviations) as follows:

> Continuous/H = measured continuously (or, if infeasible, at least hourly) and recorded and reported daily ~~hourly on the hour~~

San Jose Comment 2
San Jose points out incomplete text in Receiving Water Limitation V.B.1 (Dissolved Oxygen).

Response to San Jose Comment 2
We revised the tentative order as follows:

> The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.

San Jose Comment 3
San Jose objects to receiving water monitoring requirements that are in addition to participation in the Regional Monitoring Program (RMP). *San Jose asserts that the RMP already collects sufficient receiving water data and that additional monitoring will not generate useful information. It points out that its effluent ammonia concentrations are among the lowest in the San Francisco Bay Region and low enough that there is no reasonable potential to exceed the Basin Plan's un-ionized ammonia water quality objectives. San Jose requests removal of the permit-specific receiving water monitoring requirements. Alternatively, San Jose recommends less frequent monitoring split between wet and dry seasons and high and low tidal cycles.*

Response to San Jose Comment 3
We agree for the most part. As explained below, we revised the tentative order to move the receiving water monitoring location to an RMP monitoring station, to require more frequent monitoring over a much shorter period or allow another alternative to maximize flexibility, and to eliminate the requirements to monitor hardness and standard observations. We also revised the tentative order to allow San Jose to conduct the monitoring on its own, to rely on the RMP, or to propose an alternative approach that serves the same purpose. For example, the U.S. Geological Survey is considering working with the RMP to monitor nearby waters, and San Jose could work with these parties to ensure that similar data are collected.

The revised tentative order focuses on RMP monitoring station C-3-0 because the reasonable potential analysis is based, in part, on data from this location and because the most recent RMP data for this location were collected in 2002. By the time of the next permit reissuance, these RMP data will be at least 17 years old. Future reasonable potential analyses should be based on more current conditions.

The revised tentative order also focuses on RMP monitoring station C-3-0, not closer to the outfall, because a conservative analysis demonstrates that undiluted effluent would not contain un-ionized ammonia concentrations above water quality standards. Ammonia exists in ionized and un-ionized forms, and the fraction taking each form depends on pH, temperature, and salinity. The toxic un-ionized ammonia fraction is much higher after discharge due to receiving water conditions. However, even at nearly worst-case pH, temperature, and salinity conditions at monitoring station C-3-0, the total ammonia concentration in undiluted effluent would not contain un-ionized ammonia concentrations above water quality standards.

We eliminated the requirement to monitor receiving water hardness because the typical hardness is likely to remain well above 400 mg/L. The median hardness in waters near RMP monitoring station C-3-0 is about 1,100 mg/l. The California Toxics Rule recommends against using values above 400 mg/L to calculate freshwater quality objectives, so additional hardness monitoring is unwarranted.

We eliminated the requirement to monitor standard observations because such observations would not provide useful information if conducted at the revised, more distant monitoring location.

Our revisions to the tentative order are shown below.

We revised Monitoring and Reporting Program Table E-1 as follows:

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description
Influent	INF-001	At any point in the Plant headworks at which all waste tributary to the treatment system is present, and preceding any phase of treatment. *Latitude 37.4327, Longitude -121.9484*
Effluent	EFF-001	At any point in the Plant outfall, following treatment, including disinfection, and before contact with receiving water, where all waste tributary to Discharge Point No. 001 is present. *Latitude 37.4398, Longitude.-121.9581*
Receiving Water	RSW-001	At any point in the vicinity of RMP monitoring station C-3-0 or another location acceptable to the Executive Officer. ~~A point in Artesian Slough within 500 feet down gradient of Discharge Point 001~~
Biosolids	BIO-001	Biosolids (treated sludge)

We revised Monitoring and Reporting Program section VI (Receiving Water Monitoring Requirements), including Table E-4, as follows:

> The Discharger shall continue to participate in the Regional Monitoring Program, which collects data on pollutants and toxicity in San Francisco Bay water, sediment, and biota. The Discharger shall also monitor receiving waters at Monitoring Location RSW-001 as follows:

Table E-4. Receiving Water Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Salinity	ppt	Grab	[1] ~~1/Quarter~~
~~Hardness~~ [1]	~~mg/L as $CaCO_3$~~	~~Grab~~	~~1/Quarter~~
Temperature	ºC	Grab	[1] ~~1/Quarter~~
pH	standard units	Grab	[1] ~~1/Quarter~~
Total Ammonia Nitrogen	mg/L	Grab	[1] ~~1/Quarter~~
~~Standard Observations~~ [2]	~~–~~	~~–~~	~~1/Quarter~~

Unit Abbreviations:

ppt = parts per thousand
mg/L = milligrams per liter
ºC = degrees Celsius

Sampling Frequency:

[1] ~~1/Quarter =~~ Once per calendar month for a year ~~quarter~~ or at a frequency acceptable to the Executive Officer that is representative of the receiving water and seasonal variability.

~~Footnotes:~~

~~[1] Hardness monitoring is not required at Monitoring Location RSW-001.~~

~~[2] Standard observations are specified in Attachment G section III.C.~~

The Discharger may conduct this receiving water monitoring on its own or rely upon equivalent data obtained following another alternative approach through the RMP or coordination with others. Before pursuing an alternative approach, the Discharger shall first obtain written concurrence from the Executive Officer that the alternative approach is equivalent to the monitoring described above. The Discharger shall then submit the data in a report with its application for permit reissuance.

We revised Fact Sheet section VII.A.4 as follows:

Receiving Water Monitoring. The Discharger is required to continue participating in the RMP, which involves collecting data on pollutants and toxicity in San Francisco Bay water, sediment, and biota. This monitoring is necessary to characterize the receiving water and the effects of the discharges authorized in this Order. The Discharger is also required to monitor receiving water in the vicinity of RMP monitoring station C-3-0, or at another location acceptable to the Executive Officer, to provide data necessary for reasonable potential analyses.

We revised Fact Sheet Table F-9 as follows:

Table F-9. Monitoring Requirements Summary

Parameter	Influent INF-001	Effluent EFF-001	Biosolids BIO-001	Receiving Water
⋮	⋮	⋮	⋮	⋮
Oil and Grease	---	1/Quarter	---	
pH	---	1/Day	---	[2] ~~1/Quarter~~
Turbidity	---	1/Day	---	
⋮	⋮	⋮	⋮	⋮
Enterococcus	--	5/Week	---	Support RMP
Temperature	---	1/Day	---	[2]
~~Dissolved Oxygen~~	~~—~~	~~1/Day~~	~~—~~	
~~Dissolved Sulfides (if DO<5 mg/L)~~	~~—~~	~~1/Day~~	~~—~~	
Ammonia, Total	---	1/Month	---	[2] ~~1/Quarter~~
~~Ammonia, Unionized~~	~~—~~	~~1/Month~~	~~—~~	
Copper, Total Recoverable	---	1/Month	---	Support RMP
⋮	⋮	⋮	⋮	⋮
Remaining Priority Pollutants	---	2/Year	---	
Salinity				[2]
Standard Observations	---	1/Week	---	~~1/Quarter~~

Parameter	Influent INF-001	Effluent EFF-001	Biosolids BIO-001	Receiving Water
VOC	2/Year	2/Year	2/Year	
BNA	2/Year	2/Year	2/Year	
Metals[1]	1/Month	1/Month	2/Year	
⋮	⋮	⋮	⋮	⋮

Footnote:

[1] The metals are arsenic, cadmium, chromium, lead, mercury, nickel, selenium, silver, and zinc.

[2] Once per calendar month for a year or at a frequency acceptable to the Executive Officer that is representative of the receiving water and seasonal variability.

San Jose Comment 4

San Jose asks that the exception to Basin Plan Discharge Prohibition 1 described in Fact Sheet section VI.A.2 (Exception to Shallow Water and Dead-End Slough Discharge Prohibition) be based on "net environmental benefits," not "equivalent protection." *San Jose acknowledges that the State Water Board denied the exception based on "net environmental benefits" in 1990 due to concerns about nutrients and metals in the discharge and the potential for the freshwater discharges to harm saltwater marshes. San Jose contends that, in the subsequent 24 years, its treatment has improved, and saltwater marshes are stable and growing, in part due to salt pond restoration. San Jose maintains that its discharge protects and enhances beneficial uses in the area. While acknowledging that changing the rationale for the exception would have no practical regulatory effect, San Jose believes doing so would acknowledge its treatment improvements and support for water quality and other scientific studies. San Jose concludes that its effluent quality and the health of the receiving water are markedly better than 1990 conditions.*

Response to San Jose Comment 4

We did not revise the tentative order. We agree that San Jose's effluent quality and the health of its receiving waters are much better than they were in 1990. We also agree that aquatic and terrestrial life appears to be thriving near its outfall. However, San Jose has not demonstrated conclusively that its discharge offers *net* environmental benefits when compared to conditions that would exist without the discharge. Indeed, comparing existing conditions to conditions that might exist without the discharge is difficult, if not impossible. Since 1990, the Regional Water Board has reserved the finding of "net environmental benefits" for cases where benefits would not exist but for the discharge (e.g., constructed wetlands).

The finding that San Jose achieves an equivalent level of environmental protection by alternate means is easily justified. Moreover, it acknowledges San Jose's treatment improvements. San Jose continues to protect water quality by providing advanced secondary treatment and removing more biochemical oxygen demand (BOD_5), suspended solids (TSS), and ammonia than many other plants. The revised tentative order also acknowledges San Jose's support for water quality and other scientific studies by removing the requirements for salt marsh vegetative assessments and routine updates to the South Bay Action Plan.

Bay Area Clean Water Agencies (BACWA)

BACWA Comment 1

BACWA prefers that all receiving water monitoring be conducted through the RMP. *BACWA objects to piecemeal receiving water monitoring conducted by individual dischargers. BACWA is concerned that dischargers may be asked to undertake more receiving water monitoring while still contributing to the RMP, and would like to better understand the Regional Water Board's intentions.*

Response to BACWA Comment 1

Many NPDES permits, particularly those for shallow water discharges, require some specific receiving water monitoring in addition to RMP participation. These requirements are not new. In this case, although the previous order did not require additional monitoring, such monitoring is necessary now because the most recent RMP data collected near the discharge dates back to 2002. Future reasonable potential analyses should be based on more current conditions. We revised the tentative order to allow monitoring to be conducted through the RMP or another effort serving the same purpose. See our response to San Jose Comment 3.

Staff-Initiated Changes

In addition to making minor editorial and formatting changes, we revised Fact Sheet section II.D to include collection system compliance information as follows:

> The Discharger violated its effluent limitations once during the previous order term on December 19, 2011, when it reported an instantaneous maximum total residual chlorine concentration of 0.47 mg/L. The effluent limitation was 0.0 mg/L. The Regional Water Board assessed a mandatory minimum penalty and the problem has not recurred.
>
> To the extent that some sanitary sewer overflows (SSOs) reached waters of the U.S., the Discharger would have violated Prohibition III.D. The table below shows each Discharger's SSO rates (total SSOs per 100 miles of collection system) along with the medians for the county and region for large systems (those greater than 100 miles):

Table F-3. SSO Rates (total SSOs/100 miles of sewer)

(Values based on CIWQS data analysis completed in June 2014)

	System (miles)	2011	2012	2013
City of San Jose	2,281	8.6	8.1	5.4
City of Santa Clara	272	1.1	1.8	2.6
Santa Clara County median (of eight systems)	---	3.4	2.5	3.3
Regional median	---	4.0	4.6	4.5

> Because the City of San Jose's SSO rates were greater than the county and regional medians, Regional Water Board staff audited its collection system operations in 2010 and issued a notice of violation on January 3, 2011. The notice of violation identified deficiencies primarily in grease hot spot identification, SSO followup investigation, and operator training. Regional Water Board staff conducted a followup audit in February 2014, found that the City of San Jose had improved its program in these areas, and identified additional deficiencies primarily in meeting notification and certification requirements to the State and in ensuring adequate legal authority to enforce some city ordinances. The City of San Jose responded with its plan to address each deficiency and appears on track to do so. The most recent data in the table above show a decline in SSO rates since the 2010 audit.

We corrected computation errors that do not affect the outcome of the reasonable potential analysis. Specifically, we revised Fact Sheet section IV.C.3.e.ii(d) as follows:

> **Two Approaches.** According to the Technical Support Document, the reasonable potential analysis can be performed based on the RWC projected using effluent data (the steps summarized above) or actual measured RWCs. Both values may be compared directly with the Basin Plan un-ionized objectives.
>
> **(1) Analysis Based on Effluent Data.** Effluent monitoring data for total ammonia from April 2009 through November 2013 were used. Un-ionized ammonia concentrations were calculated using the pH and temperature data collected for the same samples. There were 58 data points (n=58). The MEC was 0.017 mg/L expressed as un-ionized ammonia (as nitrogen). The confidence interval was set at 95%. The percentile represented by the MEC (P_n) was calculated to be 0.95, indicating that the MEC represented the 95th percentile of all observed ammonia effluent data. With the upper bound set at the 99th percentile, the R value was determined to be ~~1.09~~ 1.15 (Cp_n was ~~1.231~~ 1.310 and $C_{upper\ bound}$ was ~~1.347~~ 1.576), and the projected RWC was ~~0.022~~ 0.019 mg/L, which is less than the Basin Plan un-ionized ammonia acute objective of 0.4 mg/L.
>
> Annual medians of the effluent data were used for comparison with the chronic objective, which is an annual median. The highest running annual median from the effluent data was calculated and compared with the annual median objective. No projection is needed to establish the central tendency of the data. The maximum annual median, ~~0.0120~~ 0.010 mg/L, is less than the annual median objective of 0.025 mg/L. Therefore, the effluent data do not indicate reasonable potential.
>
> **(2) Analysis Based on Receiving Water Data.** Monitoring data from the San Jose Slough RMP Station (C-3-0) and the Discharger's subsequent monitoring at the same location (SB04) were collected for total ammonia, pH, salinity, and temperature. These data were used to convert the un-ionized ammonia

> objectives into total ammonia objectives. The maximum daily un-ionized ammonia RWC was 0.15 mg/L, which is less than the acute water quality objective of 0.40 mg/L. The highest un-ionized ammonia receiving water annual median concentration of 0.014 ~~0.015~~ mg/L is less than the chronic objective of 0.025 mg/L. Therefore, there is no reasonable potential for ammonia based on the receiving water data.

We corrected errors in chronic toxicity screening requirements. Specifically, we revised Fact Sheet section IV.C.6.d as follows:

> **Screening Phase Study**. The MRP requires the Discharger to conduct a chronic toxicity screening phase study, as described in Appendix E-1, prior to permit reissuance. The Discharger's November 2013 *Chronic Toxicity Screening Study*, ~~chronic toxicity screening study~~ consisting ~~consisted~~ of 13 chronic tests, ~~and~~ concluded that only *Ceriodaphnia dubia* was sensitive to the Plant's effluent. ~~Because the Discharger experienced pathogen interference at times using *Ceriodaphnia dubia*, the Discharger will use *Pimephales promelas* for routine monitoring~~. Therefore, the Discharger will use *Ceriodaphnia dubia* for routine monitoring.