

Appendix C

Response to Comments

California Regional Water Quality Control Board
San Francisco Bay Region

RESPONSE TO WRITTEN COMMENTS

On Tentative Order for
Palo Alto Regional Water Quality Control Plant and City of Palo Alto Wastewater Collection System
Palo Alto, Santa Clara County

The Regional Water Board received written comments from the City of Palo Alto and the Bay Area Clean Water Agencies on a tentative order distributed for public comment. Regional Water Board staff has summarized the comments shown below in *italics* (paraphrased for brevity) and followed each comment with staff's response. Revisions are shown with strikethrough ~~text~~ for deletions and underline text for additions. For the full content and context of each comment, refer to the comment letters.

CITY OF PALO ALTO

Palo Alto Comment 1

Palo Alto requests that the effluent limit for fecal coliform be adjusted to account for natural bacterial die-off in the receiving water and to reflect the revised boundary of Palo Alto Baylands Nature Preserve. It submitted a technical memorandum, dated April 14, 2014, supplementing the January 2014 "Dilution Study for Palo Alto Regional Water Quality Control Plant's Discharge to South San Francisco Bay and Matadero Creek." It also submitted a revised vicinity map to more closely depict the boundary of the preserve.

Response to Palo Alto Comment 1

We agree. We reviewed the additional information and conclude that the study, which assumes a first order decay of coliform bacteria, is consistent with the guidelines established in the 2001 U.S. EPA *Protocol for Established Pathogen TMDLs*. We also conclude that the mortality rate, assumed at 1.0 per day, is conservative. Given that the effluent fecal coliform is attenuated by at least 7:1 before leaving the Palo Alto Baylands Nature Preserve and that harvesting shellfish for human consumption is prohibited within the preserve, we conclude that the shellfish harvesting beneficial use is protected beyond the preserve by effluent limits derived from the Basin Plan water quality objectives adjusted for 7:1 attenuation. We revised section IV.C.2 of the tentative order as follows:

- 2. Fecal Coliform.** The median fecal coliform density of all effluent samples collected within a calendar month shall not exceed 98 ~~28~~ MPN/100 mL, and the 90th percentile value of the last eleven samples shall not exceed 301 ~~86~~ MPN/100 mL.

We also revised Fact Sheet section IV.B.2.h, paragraph 2, as follows:

The fecal coliform effluent limits in this Order will not result in unacceptable adverse impacts because they are derived from the fecal coliform water quality objectives listed in Basin Plan Table 3-1. The limits (median fecal coliform density not to exceed 98 ~~28~~ MPN/100 mL and 90th percentile not to exceed 301 ~~86~~ MPN/100 mL) allow effluent fecal coliform concentrations to be seven times ~~twice~~ the Basin Plan objectives (median

fecal coliform density not to exceed 14 MPN/100 mL and 90th percentile not to exceed 43 MPN/100 mL). The Discharger has submitted an amended dilution study, dated April 14, 2014, which demonstrates ~~has demonstrated~~ that effluent fecal coliform bacteria at Discharge Point No. 001 is attenuated ~~diluted~~ by at least 7:1 ~~2:1~~ before leaving the Palo Alto Baylands Nature Preserve (which surrounds the outfall) and entering the main body of South San Francisco Bay (see section IV.C.4.a of this Fact Sheet and the vicinity map in Attachment B). The study takes into account natural bacterial die-off in the receiving water and amends the estimated attenuation of fecal coliform bacteria shown in Palo Alto's January 2014 Dilution Study for Palo Alto Regional Water Quality Control Plant's Discharge to South San Francisco Bay and Matadero Creek.

Harvesting shellfish for human consumption is prohibited within the preserve. In March 2014, a Supervising Ranger with the preserve confirmed that the only shellfish harvesting within the preserve is performed by researchers for scientific purposes. Because fecal coliform discharged at Discharge Point No. 001 would be diluted to concentrations achieving the Basin Plan water quality objectives before reaching any portion of South San Francisco Bay where shellfish harvesting for human consumption could potentially occur, the fecal coliform limits in this Order will not result in unacceptable adverse impacts on the shellfish harvesting beneficial use.

Palo Alto Comment 2

Palo Alto requests that when initiating a permit modification antidegradation and/or anti-backsliding analyses be required only if they are necessary. It contends that not all permit modifications warrant the completion of antidegradation and antibacksliding analyses.

Response to Palo Alto Comment 2

We disagree. Antidegradation and antibacksliding must be considered in connection with all discharge permits. Antibacksliding analyses are required to ensure effluent limitations are as stringent as previous limitations as required by the Clean Water Act. Similarly, antidegradation analyses are required to comply with the Act and need not be extensive if there will be no lowering of water quality.

Palo Alto Comment 3

Palo Alto requests a clarification of section VI.C.2.b.i of the tentative order, which requires Palo Alto to report detailed monitoring information within 30 days of receipt of analytical results. It requests the time limit be extended to 45 days if the 30-day requirement is not a rolling requirement, in other words analytical results received toward the end of a calendar month such as on March 29 may be submitted with the monitoring report due May 1.

Response to Palo Alto Comment 3

We agree. We revised section VI.C.2.b.i of the tentative order as follows:

- i. Routine Reporting.** The Discharger shall, within 45 ~~30~~ days of receipt of analytical results, report the following in the transmittal letter for the appropriate self-monitoring report:
 - (a)** Indication that a sample for this characterization study was collected; and ...

Palo Alto Comment 4

Palo Alto requests the receiving water monitoring station RSW-001 be moved to where the Palo Alto Sailing Station is located. It also requests that the receiving water monitoring station RSW-002 be removed. It contends that monitoring at the sailing station provides a representative sample for both the South San Francisco Bay and Matadero Creek receiving waters.

Response to Palo Alto Comment 4

We partly agree. We modified the location description for RSW-001 as requested but did not remove the receiving water monitoring station RSW-002. The sailing station is situated in South San Francisco Bay, which is a marine environment. It does not represent the estuarine environment of Matadero Creek in the vicinity of Discharge Point No. 002. Hardness monitoring of Matadero Creek, for example, cannot be conducted using samples collected at RSW-001. We revised Table E-1 of the MRP as follows:

Table E-1. Monitoring Locations

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description
:	:	:
Effluent	EFF-002	A point following treatment, including disinfection, and before contact with the receiving water, where only effluent to be discharged to Discharge Point No. 002 is present
Receiving Water	RSW-001	A point in South San Francisco Bay located at the Palo Alto Sailing Station in the unnamed channel within 500 feet of Discharge Point No. 001
Receiving Water	RSW-002	A point in Matadero Creek within 500 feet downgradient of Discharge Point No. 002
:	:	:

Palo Alto Comment 5

Palo Alto requests that the tentative order be consistent about whether it should monitor BOD₅ or CBOD₅. It points out that Palo Alto currently measures BOD₅ but has been reporting the results in self-monitoring reports as CBOD₅. It requests that the limits and requirements related to CBOD₅ and BOD₅ contain footnotes allowing BOD₅ to be monitored for compliance with CBOD₅ limits.

Response to Palo Alto Comment 5

We changed CBOD₅ to BOD₅ throughout the tentative order but, for clarity, did not provide the option of monitoring either BOD₅ or CBOD₅. We revised Fact Sheet section IV.B.2 as follows:

- a. ~~CBOD₅ and TSS.~~ The ~~CBOD₅ and TSS~~ effluent limitations are a monthly average of 10 mg/L, ~~and~~ a maximum daily of 20 mg/L, and a removal efficiency of 85 percent. These limits, although numerically unchanged, are more stringent than those in the previous order. (The previous order limits were expressed as CBOD₅.) These limits are technologically feasible standards for the advanced wastewater treatment technologies used at the Facility. These limits, including the 85 percent removal requirements, are unchanged from the previous order and are technologically feasible standards for the advanced wastewater treatment technologies used at the Facility. The Discharger has monitored BOD₅ instead of CBOD₅ throughout the previous order term. Monitoring data show that the Discharger has been able to consistently comply with these limitations.

b. TSS. The TSS effluent limitations are a monthly average of 10 mg/L and a maximum daily of 20 mg/L. These limits, including the 85 percent removal requirements, are unchanged from the previous order and are technologically feasible standards for the advanced wastewater treatment technologies used at the Facility. Monitoring data show that the Discharger has been able to consistently comply with these limitations.

cb. Oil and Grease. The oil and grease effluent limitations are a monthly average of 5 mg/L and a maximum daily of 10 mg/L. These effluent limitations are unchanged from the previous order. Monitoring data show that the Discharger has been able to consistently comply with these limits.

Palo Alto Comment 6

Palo Alto requests that the effluent flow for Discharge Point Nos. 001 and 002 be monitored separately.

Response to Palo Alto Comment 6

We agree. We revised Monitoring and Reporting Program (MRP) Table E-3 as shown below. These revisions include changes made in response to Palo Alto Comments 7, 8, 9, and 11.

Table E-3. Effluent Monitoring at Monitoring Location EFF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MGD/MG	Continuous	Continuous/D ^[9]
<u>Temperature</u>	°C	<u>Grab</u>	<u>1/Month</u>
BOD ₅	mg/L	C-24	1/Week ^[9]
⋮	⋮	⋮	⋮
Turbidity	NTU	Grab	1/Week ^[9]
Fecal Coliform	MPN/100 mL ^[4]	Grab	<u>1/Quarter</u> 2/Week ^[6,9]
Enterococcus ^[5]	MPN/100 mL ^[4]	Grab	<u>2/Week</u> 1/Quarter ^[2,6]
Acute Toxicity ^[7]	% Survival	Flow through	1/Quarter
⋮	⋮	⋮	⋮

Unit Abbreviations:

MGD = million gallons per day

MG = million gallons

°C = degrees Celsius

mg/L = milligrams per liter

⋮

Sampling Frequency

Continuous/D = measured continuously, and recorded and reported daily

~~Continuous/H = measured continuously, and recorded and reported hourly on the hour~~

1/Day = once per day

⋮

Footnotes:

^[1] The total flow for Discharge Point Nos. 001 ~~and 002~~ shall be monitored continuously and the following information shall be reported in monthly self-monitoring reports:

- Daily average flow rate (MGD)
- Monthly average flow rate (MGD)
- Total Monthly flow volume (MG)
- Maximum and minimum daily average flow rates (MGD)

Reported flows may be adjusted to reflect water recycling.

The Discharger shall also provide start and end times, duration, and total flow (MG) of any flow diversion around fixed film reactors or dual media filters as described in Fact Sheet section IV.A.1. These data shall be submitted as an attachment to the self-monitoring reports (SMRs) and not be comingled with routine monitoring data.

- [2] If monitoring continuously, the minimum and maximum pH values for each day shall be reported in self-monitoring reports.
- [3] Each oil and grease sampling and analysis event shall be conducted in accordance with U.S. EPA Method 1664A.
- [4] Results may be reported as Colony Forming Units (CFU)/100 mL if the laboratory method used provides results in CFU/100 mL.
- [5] The Discharger shall monitor for enterococci using U.S. EPA-approved methods, including, for example, the IDEXX Enterolert method.
- [6] The minimum monitoring frequency shall be once per quarter. If the fecal coliform enterococcus effluent limitation is exceeded, the Discharger shall conduct 2/Week accelerated sampling for at least three consecutive months. If full compliance is demonstrated after the three month period, the Discharger may return to the 1/Quarter sampling frequency.
- [7] Acute bioassay tests shall be performed in accordance with MRP section V.A.
- [8] Chronic bioassay tests shall be performed in accordance with MRP section V.B.
- [9] Monitoring shall occur at least once per event when diverting flows around fixed film reactors or dual media filters as described in Fact Sheet section IV.A.1 for at least 64 hours. The sample collection shall be grab. These data shall be submitted as an attachment to the SMRs and not be comingled with routine monitoring data.

Palo Alto Comment 7

Palo Alto requests that effluent monitoring during a diversion be required only if the diversion lasts more than 6 hours. It explains that during the previous order term the plant conducted 10 diversions, with some events lasting up to 8 hours, but it recorded no exceedance of any effluent limitation. Palo Alto requests that diversion monitoring be reported separately from routine monitoring. It also requests that only enterococcus, not fecal coliform, be monitored during a diversion.

Response to Palo Alto Comment 7

We agree. We revised MRP Table E-3 as shown above in response to Palo Alto Comment 6.

Palo Alto Comment 8

Palo Alto requests that the specified method for oil and grease be EPA Method 1644A rather than EPA Method 1644.

Response to Palo Alto Comment 8

We agree. We revised MRP Table E-3 as shown above in response to Palo Alto Comment 6.

Palo Alto Comment 9

Palo Alto requests that routine bacteria monitoring be conducted with enterococcus rather than fecal coliform, and that the reduced monitoring frequency apply instead to fecal coliform. It contends, among other things, that enterococcus is a more human-specific pathogen and therefore a more representative and protective bacteria indicator to monitor for on a more regular basis.

Response to Palo Alto Comment 9

We revised MRP Table E-3, as shown above in response to Palo Alto Comment 6, to require routine enterococcus bacteria monitoring and reduce the monitoring frequency for fecal coliform.

Beneficial uses of South San Francisco Bay include shellfish harvesting and water contact recreation, among others. For shellfish harvesting, the Basin Plan contains water quality objectives for fecal coliform. For water contact recreation, the Basin Plan contains water quality objectives for both fecal coliform and enterococcus. Since shellfish harvesting is potentially more sensitive to fecal coliform than water contact recreation (see Basin Plan Table 3-1), limits to protect shellfish harvesting are typically more stringent than those to protect water contact recreation. However, this tentative order takes into

account natural bacterial die-off within the Palo Alto Baylands Nature Preserve (see response to Palo Alto Comment 1). As a result, the fecal coliform limits (median 98 MPN/100 ml and 90th percentile 301 MPN/100 ml) are roughly equivalent to the fecal coliform water quality objectives for water contact recreation; thus, by inference, they are also roughly equivalent to the enterococcus limits derived from the Basin Plan water contact recreation objectives. In other words, only one bacterial indicator need be monitored routinely, and because we have no preference for one or the other, enterococcus monitoring is sufficient.

Palo Alto Comment 10

Palo Alto requests a reduction in the monitoring frequency for whole effluent chronic toxicity from monthly to quarterly. It contends that the monthly requirement is inconsistent with Basin Plan Table 4-5 and that the requirements in other permits in the Region mandate quarterly or bi-annual monitoring.

Response to Palo Alto Comment 10

We disagree. Basin Plan Table 4-5 does not specify maximum monitoring frequencies for whole effluent chronic toxicity. It stipulates minimum monitoring requirements. Given that San Francisco Bay south of the Dumbarton Bridge is a unique water body with a limited capacity to assimilate wastewater, it is appropriate that Palo Alto continue conducting whole effluent chronic toxicity tests monthly. This requirement is consistent with those for other South Bay dischargers, including the City of Sunnyvale and the City of San Jose and City of Santa Clara Joint Powers Authority.

Palo Alto Comment 11

Palo Alto requests removal of Continuous/H from the footnotes of Table E-3. It points out that the Continuous/H sampling frequency is not listed for any of the parameters in the table.

Response to Palo Alto Comment 11

We agree. We revised MRP Table E-3 as shown above in response to Palo Alto Comment 6.

Palo Alto Comment 12

Palo Alto requests that the language describing sampling requirements for whole effluent chronic toxicity be clarified to indicate that composite samples may be collected on alternate days or consecutive days.

Response to Palo Alto Comment 12

We agree. We revised MRP section V.B.1.a of the tentative order as follows:

- a. **Sampling.** The Discharger shall collect 24-hour composite effluent samples at Monitoring Location EFF-001 (samples may be taken from final effluent prior to disinfection) for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, the Discharger shall collect 24-hour composite samples on alternating consecutive days.

Palo Alto Comment 13

Palo Alto requests that the methodology for whole effluent chronic toxicity include a reference to the U.S. EPA test protocol applicable to the test species.

Response to Palo Alto Comment 13

We agree. We revised MRP section V.B.1.d as follows:

d. Methodology. Sample collection, handling, and preservation shall be in accordance with U.S. EPA protocols. In addition, bioassays shall be conducted in compliance with the most recently promulgated test methods, as shown in Appendix E-1. These are *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, currently third edition (EPA-821-R-02-014) and *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, currently fourth edition (EPA-821-R2-02-013). If these protocols prove unworkable, the Executive Officer and the Environmental Laboratory Accreditation Program may grant exceptions in writing upon the Discharger's request with justification. ...

Palo Alto Comment 14

Palo Alto requests that the incinerator ash monitoring requirements in MRP Table E-6 not include volatile organic compounds (VOC) and base/neutral and acid extractable organic compounds (BNA). It also points out some typographical errors in Table E-6.

Response to Palo Alto Comment 14

We agree. We revised Table E-6 as follows:

Table E-6. Pretreatment and Incinerator Ash Monitoring

Constituents	Sampling Frequency			Sample Type	
	Influent INF-001 ^[6]	Effluent EFF-001 ^[6]	Incinerator Ash ASH-001	Influent and Effluent	Incinerator Ash
VOC ^[1]	2/Year	2/year	--- 2/year	Grab	--- Grab ^[7b]
BNA ^[2]	2/year	2/year	--- 2/year	Grab	--- Grab ^[7b]
Metals and Other Elements ^[3]	1/Month	1/Month	2/Year	C-24 ^[7a]	Grab ^[7b]
Chromium (VI) ^[4]	1/Month	1/Month	2/Year	Grab	Grab ^[7b]
Mercury ^[5]	1/Month	1/Month	2/Year	Grab	Grab ^[7b]
Cyanide, Total	1/Month	1/Month	2/Year	Grab	Grab ^[7b]

Footnotes:

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^[2] BNA: base/neutrals and acid extractable organic compounds

^[3] Metals and other elements are arsenic, cadmium, chromium (VI), copper, lead, nickel, selenium, silver, and zinc.

^[4] The Discharger may choose to monitor and report total chromium instead of hexavalent chromium. Samples collected for total chromium measurements may be 24-hour composites.

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Palo Alto Comment 15

Palo Alto requests that the language regarding petition requirements when a discharger decreases flows to local watercourses be removed from Fact Sheet section I.B. Palo Alto does not believe the requirement discussed in the Fact Sheet applies to its facility, citing State Water Board's interpretation http://www.swrcb.ca.gov/water_issues/programs/grants_loans/water_recycling/waterrightsrequirements.shtml. It points out that South San Francisco Bay and Matadero Creek are not designated for municipal or domestic supply and there are no water rights holders near the vicinity of the discharge. Palo Alto believes the State Water Board's requirement discourages development of new recycled water projects.

Response to Palo Alto Comment 15

Section 1211 of the California Water Code requires that before making a change in the point of discharge, place of use, or purpose of use of treated wastewater, the owner of the treatment plant must seek approval from the State Water Board by filing a Petition for Change. The State Water Board explains on its website that this requirement does not apply to changes in the discharge or use of treated wastewater that do not result in decreasing the flow in any portion of a watercourse. For this reason direct discharges to bays and estuaries are excluded. We deleted from Fact Sheet section I.B as follows:

- B.** The Discharger is regulated pursuant to National Pollutant Discharge Elimination System (NPDES) Permit No. CA0037532. It was previously subject to Order No. R2-2009-0032 (previous order), which was adopted on April 8, 2009, and expired on May 31, 2014. The Facility discharges treated wastewater to South San Francisco Bay and Matadero Creek, both of which are waters of the United States. Attachment B provides maps of the area around the Facility. Attachment C provides a flow schematic.

~~The Discharger must file a petition with the State Water Resources Control Board (State Water Board), Division of Water Rights, and receive approval for any change in the point of discharge, place of use, or purpose of use of treated wastewater that decreases the flow in any portion of a watercourse. The State Water Board retains the jurisdictional authority to enforce such requirements under Water Code section 1211.~~

Palo Alto Comment 16

Palo Alto requests a clarification in Fact Sheet section II.A.2 to make clear that the plant receives wastewater from the East Palo Alto Sanitary District, not the City of East Palo Alto.

Response to Palo Alto Comment 16

We agree. We revised Fact Sheet section II.A.2 as follows:

- 2. **Collection System.** The City of Palo Alto wastewater collection system is a 100 percent separate sanitary sewer system consisting of approximately 200 miles of pipes ranging from 6 inches to 72 inches in diameter and one small lift station. Outside the City of Palo Alto, wastewater is conveyed to the plant by several satellite collection systems servicing owned and operated by the following: East Palo Alto Sanitary District, Stanford University, and cities of Mountain View, Los Altos, and Los Altos Hills, East Palo Alto, and Stanford University.

Palo Alto Comment 17

Palo Alto requests the removal of the paint filter test requirement from MRP Table E-9. It points out that it sends incinerator ash to a hazardous waste landfill, not a municipal landfill. Therefore, the paint filter test requirement of Attachment G, section III.B.2, does not apply. Palo Alto also requests that Fact Sheet Table F-9 be modified to reflect the requested change and to correct a typographical error.

Response to Palo Alto Comment 17

We agree. We revised Fact Sheet Table F-9 as follows:

Table F-9. Monitoring Requirements Summary

Parameter	Influent INF-001	Effluent EFF-001	Effluent EFF-002	Receiving Water RSW-001	Receiving Water RSW-002	Incinerator Ash ASH-001
⋮	⋮	⋮	⋮	⋮	⋮	⋮
€BOD ₅	1/Week	1/Week	---	---	---	---

TSS ⁽¹⁻²⁾	1/Week	1/Week	---	---	---	---
CBOD ₅ and TSS percent removal	---	1/Month	---	---	---	---
⋮	⋮	⋮	⋮	⋮	⋮	⋮
Turbidity	---	1/Week	---	---	---	---
Fecal Coliform	---	1/Quarter 2/Week	---	Support MRP	---	---
Enterococcus Bacteria	---	2/Week 1/Quarter	---	Support MRP	---	---
Total Ammonia Nitrogen	---	1/Month	---	1/Quarter	1/Quarter	---
⋮	⋮	⋮	⋮	⋮	⋮	⋮
Hardness	---	---	---	1/Quarter	1/Quarter	---
Temperature	---	1/Month	---	1/Quarter	1/Quarter	---
Volatile Organic Compounds	2/Year	2/Year	---	---	---	2/Year
Base/Neutrals Acid Extractable Organic Compounds	2/Year	2/Year	---	---	---	2/Year
Metals and Other Elements Non-Metallie Elements	1/Month	1/Month	---	---	---	2/Year
Metric tons/year	---	---	---	---	---	Attach. G §III.B.1
Paint filter test	---	---	---	---	---	Attach. G §III.B.2

BAY AREA CLEAN WATER AGENCIES

Bay Area Clean Water Agencies Comment 1

Bay Area Clean Water Agencies requests that the language regarding petition requirements when a discharger decreases flows to local watercourses be removed from, or explicitly qualified in, Fact Sheet section I.B. It does not believe the requirement discussed in the Fact Sheet apply to Palo Alto or any other municipal Bay or Estuary discharger in the region. It points out that South San Francisco Bay and Matadero Creek are not designated for municipal or domestic supply and there are no water rights holders near the vicinity of the discharge. It believes the State Water Board's requirement discourages development of new recycled water projects.

Response to Bay Area Clean Water Agencies Comment 1

See our response to Palo Alto Comment No. 15.

REGIONAL WATER BOARD STAFF-INITIATED REVISIONS

We revised section VI.C.1 of the tentative order as follows:

1. Reopener Provisions

The Regional Water Board may modify or reopen this Order prior to its expiration date in any of the following circumstances as allowed by law:

- a. If present or future investigations demonstrate that the discharges governed by this Order have or will have a reasonable potential to cause or contribute to, or will cease to have, adverse impacts on water quality or beneficial uses of the receiving waters.

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The Discharger may request a permit modification based on any of the circumstances above. With any such request, the Discharger shall include antidegradation and anti-backsliding analyses.

~~With the consent of the Discharger, the Executive Officer may make minor modifications to this Order for the purposes set forth in 40 C.F.R. section 122.63.~~

In addition, besides making minor editorial and formatting changes, we added a temperature monitoring requirement to MRP Table E-3 to facilitate future reasonable potential analysis for ammonia. Temperature data are needed to calculate un-ionized ammonia concentrations. This revision is shown in our response to Palo Alto Comment No. 6.