State Water Resources Control Board

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Arnold Schwarzenegger
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May 8, 2007

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Laurie Kemper, Supervising Water Resource Control Engineer
Alan Miller, Senior Water Resource Control Engineer
California Regional Water Quality Control Board, Lahontan Region
2501 Lake Tahoe Boulevard
South Lake Tahoe, CA 96150

Dear Mr. Coupe, Ms. Kemper, and Mr. Miller:

PROPOSED SETTLEMENT BETWEEN COUNTY SANITATION DISTRICTS NO. 14 AND 20 OF LOS ANGELES COUNTY AND THE REGIONAL WATER QUALITY CONTROL BOARD, LAHONTAN REGION – RESPONSE TO COMMENTS AND QUESTIONS OF ADVISORY TEAM

Please find attached to this letter the responses of the Prosecution Team and the Districts to the Advisory Team Comments, Questions, And Suggested Findings Concerning Proposed Settlement dated April 20, 2007. The document was prepared jointly by the Prosecution Team and the Districts.

For ease of use, please also find attached a copy of the memorandum to which this document responds.

Please feel free to contact me or Ms. Granquist if we can provide anything further.

Sincerely,

Steven H. Blum
Senior Staff Counsel
Counsel to Prosecution Team

Nicole E. Granquist

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Attachments

cc: IP Mailing List

Prosecution Team and Districts' Responses to Advisory Team's April 20, 2007 Comment Letter Regarding Proposed Settlement

1. Response to Comment I.A.:

The Advisory Team's comment contains a typographical error in the phrase the "1993 WDRs for District 14 are in Board Order No. 6-93-18 (rescinded 2000)." The reference to District 14 in that phrase is incorrect; the reference should have been to District 20. The Advisory Team is correct, however, that the 1993 WDRs for District 20 are contained in Board Order No. 6-93-18. The reference to Board Order No. 6-93-31 on page 4 of the proposed Administrative Civil Liability (ACL) Order, in the first full paragraph under "Facts – District 20," is a typographical error, and will be corrected to properly reference Board Order No. 6-93-18.

2. Response to Comment I.B.:

The Prosecution Team and District 20 do not believe any revisions to Finding 8 on page 10 of the proposed ACL Order are necessary. The Prosecution Team and District 20 appreciate the Advisory Team's suggestions; however, the first and second listed discharge prohibition in the Advisory Team's comment letter should not be included in the proposed ACL Order (the third listed discharge prohibition is already included in existing Finding 8) for the reasons set forth below.

The first discharge prohibition applies to the discharge of waste that causes violation of any narrative water quality objective in the Basin Plan, including the non-degradation objective. The first discharge prohibition suggested by the Advisory Team duplicates, in part, the discharge prohibition already cited in Finding 8 of the proposed ACL Order. There is limited data upon which to draw conclusions about the period of ground water degradation. For these reasons, the first prohibition was not included in the proposed ACL Order.

The second discharge prohibition applies to the discharge of waste that causes violation of any "numeric" water quality objective in the Basin Plan. As discussed in Finding 7 of the proposed ACL Order, the District has caused or contributed to violations of narrative water quality objectives in the Basin Plan (*i.e.,* the narrative chemical constituents water quality objective, which incorporates by reference the MCLs). For this reason, the second discharge prohibition was not included.

Finally, the Advisory Team's inclusion of the phrase "with a significant period of degradation occurring in violation of the narrative Nondegradation Objective before 1990" is not supported by evidence in the administrative record. The enhanced ground water monitoring program was commenced by District 20 in 1987 to determine existing and monitor future concentrations of constituents in ground water, including nitrogen.

3. Response to Comment I.C.:

The Prosecution Team and District 20 respectfully decline to make the change suggested. The liability in the proposed ACL Order includes a component for degradation (*see* Finding 4). However, there is limited data upon which to draw conclusions about the period of ground water

degradation. Therefore, citing this violation in the proposed ACL Order would not result in increasing the potential maximum liability.

4. Response to Comment I.D.2. – 4.:

Response to Comment I.D.1.:

Yes, Findings 5 through 9 include a discussion of each violation that separately accounts for violations impacting a water resource and for missed compliance deadlines. The following table summarizes the information.

Provision Violated	Affect on Water Resource or Missed Compliance Dates
District No. 14 – Cease and Desist Order	
I.A.	Missed Compliance Dates
I.B.	Missed Compliance Dates
I.C.	Missed Compliance Dates
I.D.	Missed Compliance Dates
District No. 14 – Waste Discharge Requirements	
II.B.4.	Missed Compliance Dates
District No. 20 – Waste Discharge Requirements	
I.C.3.	Water Resource
I.C.5.	Water Resource
I.D.2.	Water Resource
I.D.6.	Water Resource
District No. 20 – Basin Plan	
Prohibition	Water Resource
District No. 20 – Cease and Desist Order	
I.A.	Water Resource
I.B.	Water Resource
District No. 20 – Cleanup and Abatement Order	
1.1.2.	Missed Compliance Dates
1.2.3.	Water Resource
1.3.2	Water Resource

Response to Comment I.D.2.: A higher administrative civil liability in the range of $8.7 million to $26 million would have a negative impact on the Districts' rate payers, as sewer service rates would need to be increased to fund payment of the increased liability. The Prosecution Team and the Districts have agreed upon a proposed penalty amount, and do not believe that speculation regarding different or higher administrative civil liability amounts provides benefit to the process. Over the course of eight years (2003 - 2011), sewer service rates will already increase by 414% and 437% in District 14 and 20's service areas, respectively.

Response to Comment I.D.3.: Payment of any administrative civil liability will be borne by the Districts' rate payers.

Response to Comment I.D.4: The Prosecution Team and the Districts believe that the proposed settlement will serve to deter violations by the Districts. If approved by the Regional Board, Districts 14 and 20 will become the recipient of one of the largest administrative civil liability orders in the State of California's history. Neither District favors being in this position and both will work diligently to avoid repetition. The substantial penalty proposed by the Prosecution Team and the Districts provides a deterrent for any public agency in a way that recouping the entire economic benefit provides a deterrent to a private company.

The Districts believe it is important to accept responsibility, progress as expeditiously as possible toward final compliance, and restore good faith between the Regional Board, Districts, and the public. The Districts are committed to providing the Regional Board, the Districts' rate payers, and the public with high quality, environmentally sound wastewater treatment and beneficial reuse of produced recycled water. Through the process of negotiating the proposed settlement, the Districts and Regional Board staff were able to more thoroughly communicate regarding many aspects of the Districts' operations, and both the Districts and Regional Board staff have gained insight into the other's respective concerns and constraints, which the Districts and the Prosecution Team believe will lead to successful collaboration and cooperation in the future.

5. Response to Comment I.E.:

Response to Comment I.E.1: The text of the findings for the "Ability to pay" and "Effect on ability to continue in business" factors was inadvertently deleted. Findings will be restored, in accordance with the Prosecution Team and Districts' responses to Comments I.E.2. and I.E.3. below.

Response to Comment I.E.2.: The Prosecution Team and the Districts appreciate the Advisory Team's suggested findings. The Prosecution Team and Districts will revise the findings for the "Ability to pay" factor to state, "The proposed liability represents a settlement between the Parties, and the Districts have the ability to pay the proposed liability."

Response to Comment I.E.3.: The Prosecution Team and the Districts appreciate the Advisory Team's suggested findings. The Prosecution Team and Districts will revise the findings for the "Effect on ability to continue in business" factor to state, "The proposed liability represents a settlement between the Parties, and the proposed liability will not prohibit the Districts from continuing in business."

6. Response to Comment I.F.:

Response to Comment I.F.1.: No. The Water Board staff costs have been incurred over many years. Water Board staff have not tracked these costs, and therefore cannot quantify actual staff costs. Because of the varied and overlapping issues associated with these Districts, it is not possible to differentiate those costs specifically used for evaluation of the violations and preparation of the proposed ACL Order. Therefore, it has been estimated that at least $50,000 in staff costs have been expended in this effort. The settlement includes $3.8 million for a SEP and $200,000 for non-SEP payments. The $152,000 that is currently allocated to the WDPF was calculated by subtracting the cost of the independent engineer ($48,000) from the $200,000 that the parties negotiated. The parties are now proposing an amendment to the settlement that will

place the entire $200,000 into the WDPF.

Response to Comment I.F.2.: The Prosecution Team and District 20 do not believe that the suggested language would be appropriate to include in the proposed ACL Order. Outside of the conduct leading to the instant proposed ACL Order, District 20 does not present a history of violations. The parties believe that "prior history of violations" in Water Code section 13351 is intended to address violations outside of the action at issue. All of the other factors (*e.g.,* susceptibility to cleanup, nature extent & gravity of the discharge) relate to the action that is the subject of the pending liability.

7. Response to Comment I.G.:

Response to Comment I.G.1.: The Prosecution Team respectfully rejects this suggestion. While the discharge has rendered the upper layer of the ground waters in the vicinity of District 20's disposal area unfit for the municipal beneficial use, the ground waters in this area are not currently being used for that purpose. Additionally, the pollution is currently being remediated, so the loss of this potential beneficial use will be temporal.

Response to Comment I.G.2.: The Prosecution Team respectfully rejects the suggestion. The basis for this position is that the language in the proposed ACL Order is the result of a negotiated settlement. The Prosecution Team believes the original language is adequate to support the proposed liability. Some of the suggested language discusses issues related to ground water cleanup, and, since a final cleanup remedy has not yet been considered by the Water Board, that language is speculative.

8. Response to Comment I.H.:

Response to Comment I.H.1.: The 525 ton value cited from the July 2005 status report was an estimate based on assumptions that are now revealed as being overly conservative, and do not represent current, actual conditions. Even with the extension of the existing cease and desist order schedule to June 18, 2010, less nitrogen will be transported to ground water than originally reported due, primarily, to two factors: (1) the atmospheric conditions (the last few years have been below average rainfall years, thus, less rainfall to saturate the soil and transport nitrogen); and (2) District 20 and its agricultural advisors have optimized agricultural practices, to a far greater extent than originally predicted, reducing the amount of recycled water applied in excess of agronomic rates and available excess nitrogen that can be transported to ground water.

District 20 has evaluated interim treatment methods to reduce nitrogen prior to discharge; however, in order to implement any interim methods, the District must first undertake its facilities planning process and comply with the California Environmental Quality Act, and subsequently finance, bid, design, and construct any such interim treatment methods. The amount of time necessary to implement any interim treatment facilities at this point coincides with the timeframe by which the final facilities necessary for compliance will be complete. For this reason, District 20 believes its resources are best focused on achieving final compliance as expeditiously as possible.

Response to Comment I.H.2.: As a result of additional data generated by District 20's ongoing monitoring program, new monitoring wells, and additional exploration conducted with the

construction of extraction wells, the area of contamination that was originally identified in the February 9, 2005 status report has been further refined. District 20's October 13, 2006 quarterly report contains information revising the extent of ground water that contains nitrogen above 10 mg/L.

While it is difficult to pinpoint the exact date by which the concentration of nitrogen in ground water will be below 10 mg/L, based on modeling performed pursuant to Cleanup and Abatement Order No. R6V-2003-056 and Regional Board Resolution No. R6V-2005-0010, and assuming the deadline for final compliance is extended to June 18, 2010 as set forth in the proposed Cease and Desist Order, District 20 expects the concentration in ground water to be below 10 mg/L between 2010 and 2015 over most of the site (some areas currently above 10 mg/L will be below 10 mg/L in 2010-2011).

Response to Comment I.H.3.: Through 2007, District 20 will expend approximately $10 million, and will expend an additional $1.6 million through 2015, responding to Cleanup and Abatement Order No. R6V-2003-056 and Regional Board Resolution No. R6V-2005-0010 to remove nitrate to meet the 10 mg/l standard. Please see response to Comment I.H.2. to address the timing aspect of the Advisory Team's request.

Response to Comment I.H.4.: No, the concentration of nitrogen in the ground water will not get worse before it gets better if the proposed settlement is approved. Assuming the proposed settlement is approved, modeling performed by District 20 still indicates that the ground water pollution will not expand through 2009, and will significantly decrease in nitrogen concentrations beginning in 2010. Due to atmospheric conditions, and District 20's improved irrigation efficiencies, and even assuming that total excess nitrogen in calendar years 2007 through 2010 equals the limits prescribed in Table 2 of the proposed CDO, District 20 estimates a 29% reduction in total excess nitrogen from the amount originally estimated in July 2005. Please also see responses to Comment I.H.1. and I.H.2.

Response to Comment I.H.5.: District 20 evaluated an aggressive pump and treat approach to ground water cleanup (the "restore background conditions" scenario) as part of the Containment and Remediation Plan submitted to the Regional Board in September 2004 pursuant to Cleanup and Abatement Order No. No. R6V-2003-056. The scenario modeled involved the construction and operation of 25 extraction wells at the site, followed by treatment and percolation (reintroduction of treated water to ground via land spreading and subsequent percolation, as opposed to the construction of injection wells). The estimated cost for this approach was approximately $151 million. Based on the model, over a twenty-year period, most of the ground water at the site would be retuned to approximately 2 mg/L, but some areas would still contain concentrations of nitrogen significantly more than 2 mg/L.

Response to Comment I.H.6.: District 20 submitted a Containment and Remediation Plan in September 2004. After several modifications, the Regional Board approved the plan as an interim cleanup plan, which District 20 is currently implementing pursuant to Cleanup and Abatement Order No. R6V-2003-056 and Regional Board Resolution No. R6V-2005-0010 so that ground water concentrations will be restored to at or below 10 mg/L by approximately 2015. The Regional Board has not yet adopted final cleanup requirements; therefore, the Prosecution Team and District 20 do not understand the Advisory Team's reference to the "cleanup plan

currently being developed."

Response to Comment I.H.7.: No, the Supplemental Environmental Project (SEP) is not being promoted as a future means to eliminate nitrogen that would, in combination with applied water from the cleanup (if that occurs), exceed the nitrogen requirements in the currently-available land areas. Phase IB or Phase II of the Antelope Valley Recycled Water Project will be complete after District 20 completes the construction and start-up of its storage impoundments, pump station, force main, and upgraded treatment facilities. District 20's new facilities reduce nitrogen concentrations in the recycled water, and control the use of nitrogen at the reuse site. The SEP is not a factor for District 20's compliance.

9. Response to Comment I.I.:

Response to Comment I.I.1.: The SEP satisfies the California Legislature's repeated findings and declarations regarding the use of recycled water, wherever possible, to replace scarce potable water supplies and to meet the future water requirements of the state, especially where recycled water can replace potable water use by a public agency, such as the Cities of Lancaster and Palmdale. *See* Water Code §§13510 ("It is hereby declared that the people of the state have a primary interest in the development of facilities to recycle water containing waste to supplement existing surface and underground water supplies and to assist in meeting the future water requirements of the state"), 13511 ("The Legislature finds and declares that a substantial portion of the future water requirements of the state may be economically met by beneficial use of recycled water. The Legislature further finds and declares that the utilization of recycled water by local communities for domestic, agricultural, industrial, recreational, and fish and wildlife purposes will contribute to the peace, health, safety, and welfare of the people of the state"), 13512 ("It is the intention of the Legislature that the state undertake all possible steps to encourage development of water recycling facilities so that recycled water may be made available to help meet the growing water requirements of the state"), 13350 ("The Legislature hereby finds and declares that the use of potable domestic water for nonpotable uses, including, but not limited to, cemeteries, golf courses, parks, highway landscaped areas, and industrial and irrigation uses, is a waste or an unreasonable use of the water…"), 13351 ("A person or public agency, including a state agency, city, county, city and county, district, or any other political subdivision of the state, shall not use water from any source of quality suitable for potable domestic use for nonpotable uses, including cemeteries, golf courses, parks, highway landscaped areas, and industrial and irrigation uses, if suitable recycled water is available…"), 13552.2, 13552.4, 13576, and 13577 ("This chapter establishes a statewide goal to recycle a total of 700,000 acre-feet of water per year by the year 2000 and 1,000,000 acre-feet of water per year by the year 2010"). The Prosecution Team and the Districts appreciate the Advisory Team's suggestions regarding incorporating information regarding similar local regulations and/or policies, and will do so, if identified.

Response to Comment I.I.2.: The purpose of the Antelope Valley Recycled Water Project is to beneficially use recycled water. The existing and potential users of recycled water are described in Figure No. 2 in Attachment B to the proposed ACL Order. Additional information regarding the Antelope Valley Recycled Water Project can be found at the following website: http://www.ladpw.org/wwd/avirwmp/docs/19_AV%20Facilities%20Planning%20Report-2006-4-271.pdf.

Response to Comment I.I.3.: The Districts were formed under the County Sanitation District Act, passed in 1923 by the California State Legislature, and found at Health & Safety Code sections 4700-4857. The Districts are independent special districts funded by sewer service rate payers. The Antelope Valley Recycled Water Project has numerous participating agencies. One of these, the Los Angeles County Waterworks District No. 40, Antelope Valley, was formed pursuant to Division 16 of the California Water Code, sections 55000, *et seq*., and is also considered an independent special district. Another participant, Palmdale Water District, is also an independent special district formed pursuant to the irrigation district provisions of the Water Code, Water Code sections 20500 *et seq*. Thus, the relationship of recycled water supplier to user, when referencing the County Sanitation District and County Water Districts, is not within the same County government structure.

Response to Comment I.I.4.: The Prosecution Team and the Districts believe the proposed ACL Order already contains all the information sought by the Advisory Team in this comment. The proposed ACL Order specifies when payments will be made to the account (see proposed ACL Order at section 3.a., page 21), and under what conditions the funds may be withdrawn (see proposed ACL Order at section 3.c., page 22). Thus, no further changes to the proposed ACL Order will occur in response to this comment.

Response to Comment I.I.5: The Prosecution Team and the Districts will consider extending the July 1, 2013 date by which funds must be distributed to the SEP.

Response to Comment I.I.6: A federal appropriations request for portions of the SEP project (including Phase IB) was submitted by the SEP project proponents in March 2007. The SEP project proponents plan to circulate a draft Integrated Regional Watershed Management Plan and apply for state grant funds by August 2007. Securing state grant funding depends, in part, on the applicant's ability to certify the availability of some level of matching funds. If the proposed settlement is approved in May 2007, the SEP funds provided by the Districts can be used by the project proponents as matching funds in state grant applications.

The proposed $3.8 million represents, at a minimum (without accrued interest, which will also be devoted to the SEP), 11.4% or 18.8% of the funding necessary for Phase IB (expected to cost $28 million) or Phase II (the extension to areas in the City of Palmdale is expected to cost $17 million), of the SEP, respectively. Thus, other funding sources, including federal, state, or other grant money, is needed to complete Phase IB or Phase II.

Response to Comment I.I.7.: Other projects were considered, however the Antelope Valley Recycled Water Project was selected by the Districts for the SEP because the funds will be used for tangible local improvements, and the project satisfies the California Legislature's desire to promote the use of recycled water, as discussed above.

Response to Comment I.I.8.: The Districts' payments into the trust account or other impoundment account, and the payment from the trust account or other impoundment account to the SEP are already set forth in the proposed ACL Order. Given the detailed requirements of the proposed ACL Order, the Prosecution Team and the Districts do not believe alternative dispute resolution procedures are necessary to include in the proposed ACL Order.

10. Response to Comment II.A.:

The Consultant was requested to evaluate the compliance schedules in both the 2004 Cease and Desist Orders and those proposed by the Districts as part of settlement discussions. The Consultant used the term "industry standard"; therefore, it would not be appropriate to use a different term to describe the same concept. The Consultant used his "best professional judgment" in reporting the industry standard for a specific activity. The term "industry standard" and "best professional judgment" are two different concepts. The Consultant was asked to evaluate the time needed by the District to complete various tasks. The evaluation also sought a comparison of that time to the schedules in the adopted 2004 Cease and Desist Order and those currently proposed by the District. As discussed during the March 2007 hearing, the projects on the critical path were given the closest scrutiny. The Consultant concluded that it would not be possible to reduce the compliance time sufficiently to make any difference in stopping the overflows, because a reduction of at least one year is necessary to accomplish earlier compliance.

11. Response to Comment II.B.:

Response to Comment II.B.1.:

Response to Comment II.B.2.: The Consultant was requested to evaluate the compliance schedules in both the 2004 Cease and Desist Orders and those proposed by the Districts as part of settlement discussions. The Consultant used the term "industry standard"; therefore, it would not be appropriate to use a different term to describe the same concept. The Consultant used his "best professional judgment" in reporting the industry standard for a specific activity. The term "industry standard" and "best professional judgment" are two different concepts. The Consultant was asked to evaluate the time needed by the District to complete various tasks. The evaluation also sought a comparison of that time to the schedules in the adopted 2004 Cease and Desist Order and those currently proposed by the District. As described during the March 2007 hearing, reductions in time to complete projects was either not possible or would not result in earlier compliance due to the seasonal nature of agricultural application and the timing of completion of the facilities.

Response to Comment II.B.2.:

The two findings are not inconsistent. Finding No. 5 describes the sequencing of farming practices and facility construction that are intended to be interim measures to reduce the discharge of nitrogen to crops at levels which exceed the agronomic needs of the crops. As indicated in the last paragraph of Finding No. 5.b., District 20 will complete the first storage ponds in February 2010. This will allow District 20 to cease discharging above the water needs of the crops. However, due to crop rotations in place at that time, some crops (grain crops) will not be able to use all of the nitrogen that is applied at the water needs of the crop between February 2010 and June 2010. As indicated in Finding No. 6, District 20 will be able to achieve compliance with its waste discharge requirements in June 2010. The ability to store effluent will allow District 20 to irrigate more acres of alfalfa in the summer of 2010 and modify its cropping rotation. After June 2010, District 20 will be able to irrigate crops at agronomic rates for both water and nutrient needs.

Response to Comment II.B.3.: The Prosecution Team and District 20 appreciate the Advisory Team's comments; however, the Prosecution Team and District 20 do not believe that information characterizing the mass and concentration of nitrogen in the ground water and vadose zone must be included in the proposed Cease and Desist Order for District 20. If the Advisory Team would like to review the estimated mass and concentration of nitrogen in the ground water, please review Supplement 2 to District 20's Containment and Remediation Plan submitted on September 29, 2005. Please note that the modeling results in Supplement 2 are based on slightly different assumptions than current operations and projections; however, the assumptions used in Supplement 2 are more conservative than existing conditions. *See also* responses to Comment I.H.1. and I.H.2.

Response to Comment II.B.4.: Interim Standards II.A., and the allowable excess nitrogen values set forth in Table 2, differ substantially from the allowable excess nitrogen values set forth in sections I.B. – I.F. of existing Cease and Desist Order No. R6V-2004-0039. The excess nitrogen values set forth in section I.B. – I.F. of the existing Cease and Desist Order pertain only to the bottom half of Section 9 and Pivots 6,7, and 8 of Section 10 (the land application with a crop areas[1]). *See* Cease and Desist Order No. R6V-2004-0039 at section I, "Immediate Corrective Measures," page 6, first full paragraph. Interim Standards II.A. pertain to those same sections, as well as the remaining area of Section 10, the western one-half portion of Section 11, three-quarters of Section 14, all of Section 15, and one-quarter of Section 16 (the land application with a crop and agricultural reuse areas). *See* proposed Cease and Desist Order at Finding 5.b. ("the interim requirements (see Table 2) are based on the loading predicted in the 2007 annual cropping plan …").

The values set forth in Table 2 were calculated using a nitrogen balance, which includes, among other things, harvest yields, crop uptake of nitrogen, and leaf tissue nitrogen content. The nitrogen balance approach is consistent with Irrigation With Reclaimed Municipal Wastewater, A Guidance Manual, California State Water Resources Control Board Report Number 84-1 wr., July 1984, Chapter 12, entitled "Fate of Wastewater Constituents In Soil and Ground water: Nitrogen and Phosphorous." These values are then adjusted annually based on the actual annual average effluent nitrogen concentration and the actual precipitation, as described in Finding 5.b. and sections II.A.1. and 2. of the proposed Cease and Desist Order, as both of these factors affect District 20's ability to attain the allowable excess nitrogen values set forth in Table 2. If District 20 were subject to the proposed Cease and Desist Order in 2006, District 20 would have calculated a compliance value of 142 tons. While excess nitrogen discharges will occur under any agricultural farming operation, District 20 is taking steps, through optimization of its agricultural practices, to further reduce excess nitrogen discharges, so as to comply with the values set forth in Table 2 in 2007, should the proposed settlement proposal be approved by the Regional Board. District 20 expects to fully comply with the values set forth in Table 2.

Response to Comment II.B.5.: With respect to the Advisory Team's notation that "Table 2 values and amounts of nitrogen actually discharged since 2004 compare unfavorably to nitrogen limits under existing Orders," and the Advisory Team's suggestion for "findings to explain the

[1] Until District 20's storage impoundments, pump station, and force main are complete, District 20 must apply recycled water to the land application with a crop area above agronomic rates during the winter and early spring months, as the atmospheric conditions drastically reduce agronomic rates (sometimes to zero).

basis for higher mass limits," please see the response to Comment II.B.4.

The subsequent evaluation requested by the Advisory Team is difficult, if not impossible, to undertake. Monitoring and Reporting Program 6-00-57-A01, adopted in February 2004 and initiated by District 20 in April 2004, set forth the monitoring requirements necessary to conduct the type of calculations sought. Furthermore, prior to 2005, District 20 engaged in land disposal, and the data District 20 now gathers for its land application with a crop and agricultural reuse operations is not available before 2004. With respect to the period between 2004 and 2006, the amount of excess nitrogen discharged by District 20 was 215 tons (2004), 111 tons (2005), and 27 tons (2006) (in Section 9 and Pivots 6,7, and 8 of Section 10, as noted above), as compared to the allowable excess nitrogen under Cease and Desist Order No. R6V-2004-0039 of 188 tons (2004), 99 tons (2005), and 80 tons (2006). With respect to the period between 2007 and 2010, Table 2 in the proposed Cease and Desist Order for District 20 sets forth the allowable excess nitrogen discharges until final compliance is reached. District 20 will use its best efforts so that excess nitrogen actually discharged will be below the proposed allowable excess nitrogen requirements.

Response to Comment II.B.6.: District 20's Containment and Remediation Plan, submitted in September 2004, and Supplement 2 submitted in September 2005, addressed excess nitrogen in the vadose zone soil and its travel time. The travel time for nitrogen in the vadose zone to ground water was conservatively estimated as anywhere from one year (under portions of section 9 before spray irrigation systems were installed) to greater than ten years (under controlled reuse). Some hydrogeologists estimate there are no return flows from agricultural reuse areas due to the depth of ground water, interbedded layers of clay, and other factors. It is important to remember that the amount of nitrogen lost past the root zone does not directly correlate to nitrogen that might reach ground water. Denitrification occurs during the period of time it takes for transport (which can be in excess of ten years). Furthermore, the District expects even less nitrogen reaching ground water due to District 20's changes to disposal and agricultural practices. District 20 ceased land disposal in 2005. Continued optimization of land application with a crop and agricultural reuse, and shifting to full agricultural reuse in 2010 without the need to apply above agronomic rates due to increased storage, greatly reduces the amount of nitrogen to the vadose zone, and the amount of nitrogen that can move from the vadose zone to ground water.

Response to Comment II.B.7.: The conceptual model of the site attributes nitrogen losses to the atmosphere through 2 processes. Ammonia present in recycled water is volatized upon application to the site. The volatization rate is estimated at 25%, which has been agreed upon by Regional Board staff and District 20 as a conservative value based on the literature. Additional nitrogen losses occur in the vadose zone as a result of natural micro-biological processes. This nitrogen loss is estimated using the model in District 20's Containment and Remediation Plan, submitted on September 14, 2004.