

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION
MEETING OF FEBRUARY 13 AND 14, 2008
VICTORVILLE, CALIFORNIA**

ITEM: 10

SUBJECT: PUBLIC HEARING – CONSIDERATION OF A CEASE AND DESIST ORDER FOR VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY, REGIONAL WASTEWATER TREATMENT PLANT FOR VIOLATIONS OF WASTE DISCHARGE REQUIREMENTS CONTAINED IN BOARD ORDER NO. 6-99-58 AND R6V-2008-(PROPOSED), SAN BERNARDINO COUNTY

CHRONOLOGY: November 17, 1999 Waste Discharge Requirements (WDRs) (Board Order No. 6-99-58)

ISSUES: The renewed NPDES permit contains new effluent limits that may be violated by the Victor Valley Wastewater Reclamation Authority (Discharger). The Discharger has also violated receiving water limits in its existing WDRs. Should the Regional Board adopt the proposed Cease and Desist Order requiring the Discharger to comply with interim limits and milestone compliance dates until final compliance is achieved?

DISCUSSION: The Discharger treats municipal wastewater from the Victor Valley area at its Regional Wastewater Treatment Plant (facility). The facility is located along the west side of the Mojave River, north of Victorville. Item No. 9 of your agenda is a proposed order renewing the NPDES permit for discharge from the facility to the Mojave River. The facility's discharge of secondary-treated wastewater to percolation ponds is regulated under Board Order No. 6-99-58. The Discharger treated a flow of 12.3 MGD at their facility in 2007. Construction of new facilities will be completed in 2011 bringing the total average daily flow capability up to 22 MGD.

Board Order No. R6V-2008-(Proposed) contains new effluent limits for ammonia–nitrogen and nitrate–nitrogen. The existing effluent quality threatens to violate these new effluent limits. The Discharger needs time to complete the 22 MGD expansion. When completed, the plant will have improved nitrogen removal technology and be able to meet the new permit effluent limits. This Proposed Enforcement Order contains the following construction and plant performance time schedules.

Begin construction	October 1, 2009
Complete construction	September 1, 2011
Attain compliance with final permit limits	May 1, 2012

The Proposed Enforcement Order also contains interim performance-based concentration limitations for ammonia-nitrogen and nitrate-nitrogen using actual plant performance from January 2001 to March 2006 (the same period used to calculate new interim effluent limitations for toxic constituents in the new permit).

The Discharger has improved treatment plant operational performance for nitrogen removal in 2007. This Proposed Enforcement Order also incorporates an average annual discharge concentration for total nitrogen to ensure the 2007 performance level is maintained until the final nitrate-nitrogen and ammonia-nitrogen limitations must be met (May 1, 2012).

The Discharger began using its south percolation ponds in 2002. The Discharger violated Board Order No. 6-99-58 beginning January 2003 when groundwater quality exceeded the water quality objective for nitrate of 10 mg/L as N. Over time the nitrate concentrations in groundwater have decreased to their current range of 7.4 to 8.6 mg/L (November 2007).

The Mojave River is a discharge dominated stream in the vicinity of the treatment plant discharge point. Since 2001, the effluent quality has periodically exceeded the drinking water standard of 10 mg/L for nitrate-nitrogen. The Basin Plan includes the drinking water standards as receiving surface water quality objectives. Therefore, whenever the effluent quality exceeds the nitrate-nitrogen drinking water standard, the Discharger also violates the receiving water quality objective.

The new permit effluent limits will ensure this receiving water limit is not violated. However, because the Mojave River loses its surface flow by percolation into groundwater, the discharge has likely caused groundwater downstream of the discharge location to have elevated nitrate concentrations.

To address groundwater pollution, the Proposed Enforcement Order requires the Discharger to determine the extent of groundwater pollution and develop a cleanup plan as follows.

Submit Investigation Work Plan	July 28, 2008
Submit Investigation Report	August 28, 2009
Submit Remediation Plan	February 15, 2010

RECOMMENDATION: Adoption of the proposed Cease and Desist Order.

Enclosures:

1. Proposed Cease and Desist Order
2. VVWRA Comments on Tentative Order
3. Water Board staff Responses to VVWRA Comments

ENCLOSURE 1

10-0003

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

**CEASE AND DESIST ORDER NO. R6V- 2008-(PROPOSED)
WDID NO. 6B360109001**

**VIOLATIONS OF WASTE DISCHARGE REQUIREMENTS
FOR
VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
REGIONAL WASTEWATER TREATMENT PLANT**

San Bernardino County

The California Regional Water Quality Control Board, Lahontan Region (Water Board) finds that:

1. Discharger and Facility

The Water Board adopted Orders prescribing Waste Discharge Requirements (WDR) for the Victor Valley Wastewater Reclamation Authority (Discharger), a Publicly Owned Treatment Works (POTW). The Discharger owns the Regional Wastewater Treatment Plant (facility) located along the west side of the Mojave River (see Attachment A). The facility is a 14.0 MGD tertiary facility consisting of primary, secondary activated sludge, and tertiary treatment processes.

The facility is not designed to remove nitrogen. However, the Discharger operates the facility with the strategy of removing biodegradable matter and minimizing the overflow of solids in the secondary effluent. With this strategy, the Discharger regularly nitrifies the wastewater to remove ammonia.

The Discharger proposes facility improvements that will increase the facility capacity to 22 MGD, add membrane bioreactor (MBR) technology with anoxic tanks, replace the present chlorination system with ultra-violet disinfection technology, and replace sludge dewatering basins with mechanical processes. The Mojave River receives surface discharge of treated wastewater and the Upper Mojave River Valley Groundwater Basin receives infiltration from the percolation ponds.

2. Permit History

- a. The Water Board adopted Board Order No. 6-99-58, National Pollutant Discharge Elimination System (NPDES) Permit No CA 0102822, on November 17, 1999. That Order prescribes requirements for the tertiary treated discharge of 8.3 MGD to the Mojave River, and a secondary treated discharge of 1.2 MGD to percolation ponds.
- b. The Water Board adopted Board Order No. R6V-2008-(PROPOSED), NPDES No. CA0102822, on February 14, 2008, prescribing requirements for

the tertiary treated discharge of 14 MGD to the Mojave River. Board Order No. R6V-2008-(PROPOSED) replaces those portions of Board Order No. 6-99-58 that regulate the discharge to the Mojave River. All other portions of Board Order No. 6-99-58 remain in effect for the regulation of the discharge to groundwater via percolation ponds.

3. Waste Discharge Requirements — Order No. 6-99-58

Board Order No. 6-99-58 contains Discharge Specifications I.B.1 and I.D.4 which state:

I. Discharge Specifications

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"B. Receiving Water Limitations

1. This discharge shall not cause a violation of any applicable water quality standard for receiving water adopted by the Regional Board.

⋮

"D. General Requirements and Prohibitions

1. The discharge shall not cause a pollution as defined by Section 13050(l) of the California Water Code, or a threatened pollution."

4. Nitrate Standard in Ground Water

The Water Quality Control Plan for the Lahontan Region (Basin Plan) adopted by the Regional Board (and effective on March 31, 1995) establishes water quality objectives for the protection of beneficial uses. The Basin Plan requires that ground waters designated as a Municipal and Domestic Supply (MUN) do not contain concentrations of chemical constituents in excess of the Maximum Contaminant Level (MCL) based upon drinking water standards specified in provisions of title 22, California Code of Regulations. The MCL for nitrate is specified in California Code of Regulations, title 22, section 64431, Table 64431-A (Inorganic Materials). The MCL for nitrate is 10 mg/L as N.

5. Definition of Pollution

Section 13050 of the California Water Code (CWC) defines pollution as "*an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects ... the waters for beneficial uses.*"

6. Violation of WDR — Order No. 6-99-58

a. Nitrate-Nitrogen in Groundwater

The discharge of wastes (effluent) by the Discharger to the percolation ponds has caused elevated concentrations of nitrate-nitrogen in underlying groundwater. The effluent contains contaminants, including total nitrogen (organic, ammonia and nitrate-nitrogen) that have migrated to the underlying groundwater. The concentration of nitrate-nitrogen in groundwater beneath and immediately downgradient of the percolation pond is tabulated in Attachment B. The Discharger initiated discharge to the south percolation ponds in 2002. By January 2003, nitrate-nitrogen concentrations in groundwater monitoring wells near the ponds increased from background (<0.2 to 0.8 mg/L)¹ to above 10 mg/L (see Attachment B, South Percolation Pond Groundwater Monitoring Data). Nitrate-nitrogen concentrations in recent groundwater results (July 2007) range from 7.4 mg/L to 8.6 mg/L.

1) Violation of Water Quality Objective (Discharge Specification I.B.1)

The discharge has caused nitrate-nitrogen concentrations in underlying groundwater to exceed or threaten to exceed a water quality objective in the Basin Plan. Discharge Specification No. I.B.1, contained in Board Order No. 6-99-58 prohibits the violation of water quality standards for receiving water. This receiving water limit is the primary drinking water MCL.

2) Condition of Pollution (Violation of Discharge Specification I.D.4)

The Basin Plan describes beneficial uses for waters of the Lahontan Region. The Basin Plan states that the beneficial uses of groundwater beneath the disposal and reuse sites include the beneficial use of municipal and domestic supply (MUN). The discharge has caused groundwater immediately down gradient of the disposal site to exceed the drinking water standard for nitrate-nitrogen. As such, the affected groundwater is no longer useable for drinking or domestic supply. This alteration is unreasonable because the aquifer is currently used for drinking water and the portion of the aquifer affected by the discharge is no longer suitable for this beneficial use. The discharge has therefore unreasonably affected the water for MUN beneficial use and caused a condition of pollution. Since the discharge has caused a condition of pollution, it also has caused a violation of Discharge Specification No. I.D.4.

¹ VVWRA, Annual Discharge Monitoring Report for Calendar Year 2002, Board Order 6-99-58.

b. Nitrate–nitrogen discharge to the Mojave River

Effluent data of the discharge to the Mojave River for the period January 1, 2001 to November 30, 2007 were compared to the receiving water objective. The receiving water objective for nitrate–nitrogen is the primary MCL for drinking water, 10 mg/L as N. Because the Mojave River is a discharge dominated surface water, the discharge violates the Basin Plan whenever the nitrate–nitrogen concentration in the discharge exceeds 10 mg/L as N. These data are presented in Attachment C, Surface Water Nitrate.

7. WDR — Order No. R6V-2008-(PROPOSED)

Board Order No. R6V-2008-(PROPOSED) which is a renewed NPDES permit, contains effluent limitations for the discharge to the Mojave River (Discharge Point 001), which state:

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

1. Final Effluent Limitations – Discharge Point 001

- a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the attached MRP.

Constituent	Units	Average Monthly	Maximum Daily
Ammonia–Nitrogen	mg/L	0.8	1.5
	lbs/day	93.4	175
Nitrate–Nitrogen	mg/L	8.2	11.3
	lbs/day	957	132

8. Threatened Violation of NPDES Permit — Order No. R6V-2008-(PROPOSED)

The Discharger's current facility cannot meet the new effluent limitations for ammonia–nitrogen and nitrate–nitrogen constituents specified in Section IV.A.1.a of Board Order No. R6V-2008-(PROPOSED). The Discharger proposes to design and construct facility improvements to achieve compliance with the new permit limits. However, compliance will not be achieved until facility improvements are constructed and operational.

9. Interim Limits

The method for development of maximum daily interim ammonia–nitrogen and nitrate–nitrogen effluent limitations is based on the method used for California Toxic Rule constituents. The method is explained in the State Implementation Plan for Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, 2005 (SIP), Section 2.2.1. This policy only applies to toxic constituents. For consistency, the same method used for toxic constituents was applied in this Order.

In developing the maximum daily interim limitations, sampling and laboratory variability is accounted for by establishing interim limits that are based on normally distributed data where 99.9% of the data points will lie within 3.3 standard deviations of the mean (Basic Statistical Methods for Engineers and Scientists, Kennedy and Neville, Harper and Row). Where actual sampling shows a sample result that exceeds the proposed 3.3-standard deviation interim limit, the observed maximum effluent concentration is used for the maximum interim effluent limitation. Based on the following river discharge monitoring data from January 2001 to March 2006, the basis for the selected effluent limitation is the maximum observed concentration.

Item	Units	Ammonia–Nitrogen	Nitrate–Nitrogen
No. of data points	—	1212	258
Mean	mg/L	2.0	9.6
Std Dev	mg/L	1.11	1.61
3.3 x Std Dev	mg/L	3.7	5.3
Mean + (3.3 × Std Dev)	mg/L	5.7	14.9
Coefficient of Variation	—	0.6	0.2
Observed maximum effluent concentration	mg/L	15.9	16.0
Selected maximum daily limit	mg/L	15.9	16.0
Basis		Max eff conc	Max eff conc

In addition to maximum daily limits, average monthly interim effluent limitations are needed to assure that the discharger will operate the facility to keep concentrations of ammonia–nitrogen and nitrate-nitrogen within the capability of the facility. The Water Board used the preceding river discharge monitoring data as a basis for the average monthly interim limitations. The monthly average interim effluent limitations are based on normally distributed data at the 95% percentile, using the mean as the long-term average. Based on the assumed sample frequency of one effluent sample per week for ammonia–nitrogen and nitrate-nitrogen, the long-term average multipliers for ammonia-nitrogen and nitrate-nitrogen, are 1.55 and 1.17, respectively (from the State Implementation Policy for Toxic Constituents). Therefore, the calculated interim monthly average limitations are the following:

Monthly Average Limit, Ammonia-nitrogen: $2.0 \text{ mg/L} \times 1.55 = 3.1 \text{ mg/L}$
Monthly Average Limit, Nitrate-nitrogen: $9.6 \text{ mg/L} \times 1.17 = 11.2 \text{ mg/L}$

This Cease and Desist Order also contains an interim limit on the concentration of total nitrogen that can be discharged to the Mojave River and percolation ponds over a 12 month period. The existing treatment plant does not include wastewater treatment for nitrogen removal and facilities that provide nitrogen removal will not be constructed until 2009-2011. The Discharger proposes a limit of 98 lbs total nitrogen per million gallons (11.75 mg/L) over a 12-month period. The interim total nitrogen limit is based on 2007 plant performance data, 10.6 mg/L, plus a factor of 11% to allow for variability.

Establishing an interim limit for total pounds of nitrogen discharged based on plant performance in 2007 provides a total nitrogen limit for both the river and pond discharge, and requires that the discharger operate the treatment plant to optimize effluent quality using the existing treatment facilities.

10. Long-Term Corrective Action

The Discharger submitted a schedule to complete facility improvements. Following the completion of construction, the Discharger needs time to operate the new equipment to optimize facility operation and performance. The time schedule provided by the Discharger² is the following:

Begin construction of nitrification/denitrification and plant-wide facility improvements	<u>October 1, 2009</u>
Complete construction	<u>September 1, 2011</u>
Meet final effluent limitations prescribed in Section IV.1.a of Board Order No. R6V-2008-(PROPOSED)	<u>May 1, 2012</u>

11. California Water Code

CWC Section 13301 states, in part: *"When a regional board finds that a discharge of waste is taking place or threatening to take place in violation of requirements or discharge prohibitions prescribed by the regional board or the state board, the board may issue an order to cease and desist and direct that those persons not complying with the requirements or discharge prohibitions (a) comply forthwith, (b) comply in accordance with a time schedule set by the board, or (c) in the event of a threatened violation, take appropriate remedial or preventive action."*

² Reference NPDES application 1-7-08, and amendments thereto.

12. Submittal of Technical Reports

Pursuant to California Water Code section 13267, subdivision (a), the Water Board may investigate the quality of any waters of the state within its region in connection with any action relating to any plan or requirement authorized by this division. The need for a technical report pursuant to California Water Code section 13267, subdivision (b) must bear a reasonable relationship to the benefits to be obtained from the report. In compliance with California Water Code section 13267, subdivision (b), the Water Board is required to provide a written explanation with regard to the need for the report and shall identify the evidence that supports requiring the person to provide the report. The Water Board is requiring the reports described below.

a. Pollution Prevention

The Board is requiring in this Order that the Discharger prepare and implement a pollution prevention plan pursuant to Water Code section 13263.3, subdivision (d)(1). The purpose the plan is to set strategies and goals, using pollution prevention techniques, public outreach, or other innovative and alternative approaches, for reduction of waste constituents into the Discharger's facility. The purpose of implementing the plan involves periodic assessment of progress for achievement of the developed goals.

b. Quarterly Project Status Reports

The purpose of these reports is to keep the Water Board informed of progress towards meeting the effluent limits of the new NPDES permit, towards compliance with the existing WDRs and compliance with this Order.

c. Nitrate in Groundwater - Occurrence and Movement

Water Code section 13267 subdivision (b) requires the following:

" . . . that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region . . . that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring reports which the regional board requires"

These data are needed to fully determine the nitrate-nitrogen concentration in groundwater as the result of discharge to the percolation ponds and any other areas where facility discharges affect groundwater, including groundwater located up-gradient and down-gradient of the ponds. Information is needed from the Discharger to identify the source(s), and to quantify the vertical and lateral extent of nitrate-nitrogen in the affected groundwater.

13. Mandatory Minimum Penalty Exemption

The Discharger is exempt from the mandatory minimum penalties under California Water Code Section 13385 (h) and (i) for violations of ammonia-nitrogen and nitrate-nitrogen effluent limitations, provided that the discharge is in compliance with the interim effluent limits and the Discharger complies with the time schedules in this Order. This exemption is allowed when the discharger meets all of the requirements specified in California Water Code Section 13385 (j)(3).

- a. *"(A) The cease and desist order or time schedule order is issued on or after July 1, 2000, and specifies the actions that the discharger is required to take in order to correct the violations that would otherwise be subject to subdivisions (h) and (i)."*

This Order is issued after July 1, 2000. The Order specifies facility improvement actions that the Discharger must take to correct the violations.

- b. *"(B) The regional board finds that, for one of the following reasons, the discharger is not able to consistently comply with one or more of the effluent limitations established in the waste discharge requirements applicable to the waste discharge:*

(i) The effluent limitation is a new, more stringent, or modified regulatory requirement that has become applicable to the waste discharge after the effective date of the waste discharge requirements ... "

Effluent limitations for ammonia-nitrogen and nitrate-nitrogen are **new** effluent limitations. The Discharger cannot consistently meet the ammonia-nitrogen and nitrate-nitrogen effluent limitations with their existing treatment facility.

- c. *"(C) The regional board establishes a time schedule for bringing the waste discharge into compliance with the effluent limitation that is as short as possible, taking into account the technological, operational, and economic factors that affect the design, development, and implementation of the control measures that are necessary to comply with the effluent limitation. For the purposes of this subdivision, the time schedule may not exceed five years in length ... If the time schedule exceeds one year from the effective date of the order, the schedule shall include interim requirements and the dates for their achievement. The interim requirements shall include both of the following:*

(i) Effluent limitations for the pollutant or pollutants of concern.

(ii) Actions and milestones leading to compliance with the effluent limitation."

This Order specifies interim effluent limitations for ammonia-nitrogen and nitrate-nitrogen, interim tasks, and completion of the interim tasks. Also, this Order specifies facility improvement actions and a final compliance date. The final compliance date is less than five years and is as short as possible, given both the magnitude of construction and complexity of the proposed treatment technology.

- d. *"(D) The discharger has prepared and is implementing in a timely and proper manner, or is required by the regional board to prepare and implement, a pollution prevention plan pursuant to Section 13263.3."*

This Order requires the Discharger to implement a Pollution Prevention Plan.

14. California Environmental Quality Act

This enforcement action is being taken to enforce provisions of the California Water Code and, as such, it is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, section 21000 et seq.) in accordance with California Code of Regulation, title 14, section 15308.

15. Notification of Interested Parties

The Water Board notified the Discharger and interested parties of a public hearing scheduled for the Water Board meeting on February 13, 2008. During the public hearing conducted at this meeting, the Water Board heard and considered all comments related to the proposed Order.

16. Petitions

Any person adversely affected by this action of the Water Board may petition the State Water Resources Control Board (State Water Board) for review of this action. The petition must be received by the State Water Board, Office of Chief Counsel, PO Box 100, Sacramento, CA 95812-0100, within 30 days of the date on which this action was taken. Copies of the law and regulations applicable to filing petitions are available at the SWRCB web page: (http://www.waterboards.ca.gov/wqpetitions/wqpetition_inst.html) and will be provided on request.

IT IS HEREBY ORDERED that, in accordance with Section 13301 of the California Water Code, the Discharger shall cease and desist from violating and threatening to violate Discharge Specifications described in I.B.1 and I.D.4 of Board Order No. 6-99-58 and in IV.A.1.a of Board Order No. R6V-2008-(PROPOSED), and shall comply with the following schedule, and the following interim effluent limitations. Additionally, the Discharger shall, in accordance with Section 13267 of the California Water Code, submit technical reports as required.

I. INTERIM LIMITS

A. The Discharger shall meet the following Interim Effluent Limitations — Discharge Point 001.

Constituent	Units	Average Monthly	Maximum daily
Ammonia-nitrogen	mg/L	3.1	15.9
Nitrate-nitrogen	mg/L	11.2	16.0

B. The pounds of total nitrogen in effluent discharged to both the percolation ponds and to the Mojave River combined must not exceed 98 lbs total nitrogen per million gallons (11.75 mg/L) per 12-month period from May 1 to April 30 of each year. May 1, 2008 to April 30, 2009 shall be considered the first 12-month period, May 1, 2009 to April 30, 2010 shall be considered the second twelve month period, and so on. The interim limit on total pounds of nitrogen discharged per million gallons shall remain in effect for each 12-month period until compliance with final effluent limits is achieved.

II. POLLUTION PREVENTION PLAN IMPLEMENTATION

The Discharger must implement a Pollution Prevention Plan by **July 30, 2008**.

III. COMPLIANCE MILESTONES

The Discharger shall meet the following compliance milestones:

Start construction of nitrification/denitrification and plant-wide facility improvements	October 1, 2009
Complete construction	September 1, 2011
Attain final compliance with effluent limitations prescribed in Section IV.A.1.a of Board Order No. R6V-2008 (PROPOSED)	May 1, 2012

IV. REPORTING REQUIREMENTS

Pursuant to Section 13267 of the California Water Code, the Discharger must submit the following reports:

A. Pollution Prevention Plan

By **July 1, 2008**, the Discharger shall submit the Pollution Prevention Plan containing the elements listed in Water Code Section 13263.3(d)(3).

B. Quarterly Project Progress Report

Beginning **April 15, 2008**, and continuing on a quarterly basis until achievement of compliance with the ammonia-nitrogen and nitrate-nitrogen effluent limitations in Board Order No. R6V-2008-(PROPOSED). The Discharger shall submit a project progress report. The project progress report shall include:

1. The status of planning, design, construction of facility improvements to achieve compliance with the ammonia-nitrogen and nitrate-nitrogen effluent limitations in IV.A.1.a of Order No R6V-2008-(PROPOSED) and implementation of any measures necessary to achieve compliance with this Cease and Desist Order. This shall include an analysis of the progress made to date towards completing facility improvements described in Finding 1 of this Order or alternative methods of compliance. The analysis must include a statement indicating whether or not the progress to date is sufficient to complete the facilities according to the dates listed in Section III of this Order. If non-compliance with any interim effluent limit or other requirement is noted, the report must include the reasons for the actual or expected non-compliance, steps being implemented by the Discharger to minimize the period of non-compliance or to make-up the lost time, and an estimate of the additional time needed to achieve compliance and a detailed description of the reason(s) that this additional time is warranted.
2. A description of any other actions that have been implemented and/or proposed to be implemented to achieve compliance.
3. A list of any compliance dates that the Discharger anticipates it will not meet, the reason that the Discharger anticipates it will not meet the dates, and projected new dates of compliance.
4. Flow and nitrogen effluent data and calculations for the current annual period that began on the preceding May 1, to include the following:
 - a. The average daily flow (MGD) discharged to the percolation ponds, in MGD, for each month.
 - b. The average monthly concentration (mg/L) of Kjeldahl-Nitrogen, Nitrite-Nitrogen, Nitrate-Nitrogen, and Total Nitrogen discharged to the percolation ponds, for each month.
 - c. The average daily flow (MGD) discharged to the Mojave River, in MGD, for each month.

- d. The average monthly concentration (mg/L) of Kjeldahl-Nitrogen, Nitrite-Nitrogen, Nitrate-Nitrogen, and Total Nitrogen discharged to the Mojave River, for each month.
- e. Calculation of the average total nitrogen discharge concentration for the current annual period that began on the preceding May 1, using the following equation:

$$\begin{array}{l} \text{Average Total} \\ \text{Nitrogen} \\ \text{Concentration, mg/L} \end{array} = \frac{\Sigma(Q_p \times C_p \times 8.34) + \Sigma(Q_r \times C_r \times 8.34)}{8.34 \times \Sigma(Q_p + Q_r)}$$

where:

- Q_p = the average daily pond discharge flow in a month, MGD
 C_p = the average monthly total nitrogen pond discharge concentration in a month, mg/L
 Q_r = the average daily discharge flow in a month, MGD
 C_r = the average monthly total nitrogen river discharge concentration, mg/L
8.34 = a conversion factor, lbs-L/mg-Mgal

5. Beginning with the **July 15, 2009** Quarterly Report, and in each **July 15** report thereafter, include flow and nitrogen effluent data and calculations as specified in IV.B.4.a to IV.B.4.e, for the annual period that ended on the preceding April 30.
6. Provide a table of average monthly and maximum daily effluent concentrations (determined at location EFF-001) for ammonia-nitrogen and nitrate-nitrogen along with an evaluation with respect to Interim Effluent Limitations contained in Section I.A. of this Order.

C. Groundwater Investigation Work Plan

By **July 28, 2008**, the Discharger shall submit a Groundwater Investigation Work Plan (Work Plan). The Work Plan shall identify methods to verify predicted nitrate-nitrogen movement over time. The Work Plan shall describe methods and procedures to establish the nature and full lateral and vertical extent of elevated nitrate caused by the discharge greater than natural background. Methods include, but are not limited to, installation or designation of groundwater monitoring wells at sufficient locations and depths to verify the magnitude and movement of nitrate-nitrogen in groundwater. The Work Plan shall identify and describe tasks for completing the site investigation report. The Work Plan shall also include an inventory of existing supply and monitoring wells within areas affected by the elevated nitrate plume. The inventory of wells shall include, where available, well owner, type, location, top elevation, screen interval, and casing diameter. The inventory shall also include copies of the

California Water Code section 13751 well filings with the Department of Water Resources.

The Work Plan shall be signed by a California registered geologist, or by a California registered professional engineer with competence in groundwater hydrogeology. All work associated with preparation of the Work Plan shall be performed by or under the direction of a California registered geologist, or a California registered professional engineer with competence in groundwater hydrogeology.

D. Groundwater Investigation

By **August 28, 2009**, the Discharger shall submit a Groundwater Investigation Report. In this report, the Discharger shall delineate and describe the lateral and vertical occurrence and the predicted movement of nitrate-nitrogen in groundwater above background.

E. Nitrate Remediation Plan

By **February 15, 2010**, the Discharger shall submit a Nitrate Remediation Plan. In this Plan, the Discharger shall propose remedial actions and proposed cleanup levels consistent with State Board Resolution 92-49 (Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304).

The Groundwater Investigation Workplan and Report and Nitrate Remediation Plan shall be signed by a California registered geologist, or by a California registered professional engineer with competence in groundwater hydrogeology. All work associated with preparation of the Groundwater Investigation Report, including data collection, shall be performed by or under the direction of a California registered geologist, or a California registered professional engineer with competence in groundwater hydrogeology.

F. Pollution Prevention Plan Implementation Status Report

Beginning **January 15, 2009**, and continuing on an annual basis until achievement of compliance with the ammonia-nitrogen and nitrate-nitrogen effluent limitations in the WDR, the Discharger shall submit the Pollution Prevention Plan Implementation Status Report. The report will describe the measures implemented and the results, in a quantitative manner, of the implemented measures during the previous year. The report shall also describe the measures that will be implemented and the expected performance in the current calendar year.

Failure to comply with the terms or conditions of the Order may result in additional enforcement action by the Regional Board. The Executive Officer is authorized to initiate, as needed, referral of this matter to the Attorney General of the State of California for the imposition of Civil Liability for failure to comply with this Order, injunctive relief, or for any other legal action, as he may deem appropriate.

I, Harold J. Singer, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on February 14, 2008.

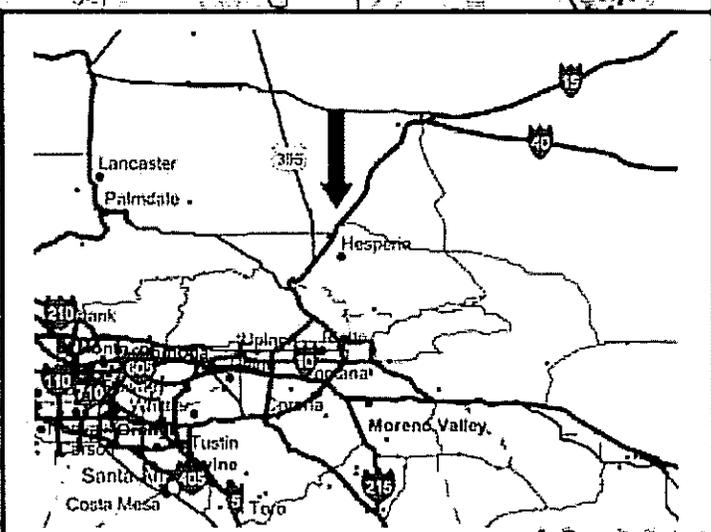
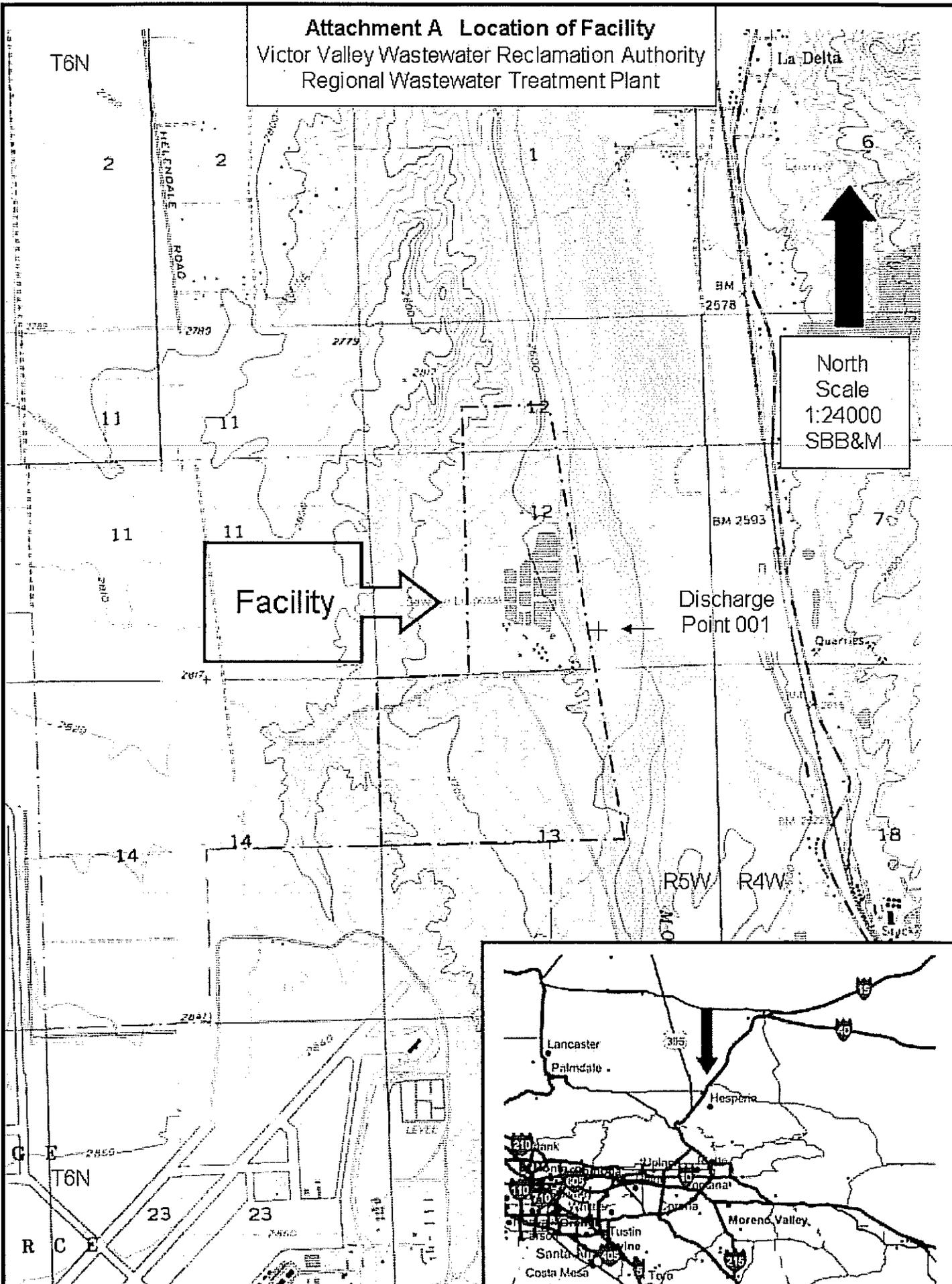
HAROLD J. SINGER
EXECUTIVE OFFICER

Attachment A - Location of Facility
Attachment B - South Percolation Pond Groundwater Monitoring Data
for Nitrate-Nitrogen
Attachment C - Surface Water Nitrate

ENF2008/VVWRA-CDO/(R6V-2008-PROPOSED VVWRA-CDO)JC/rp

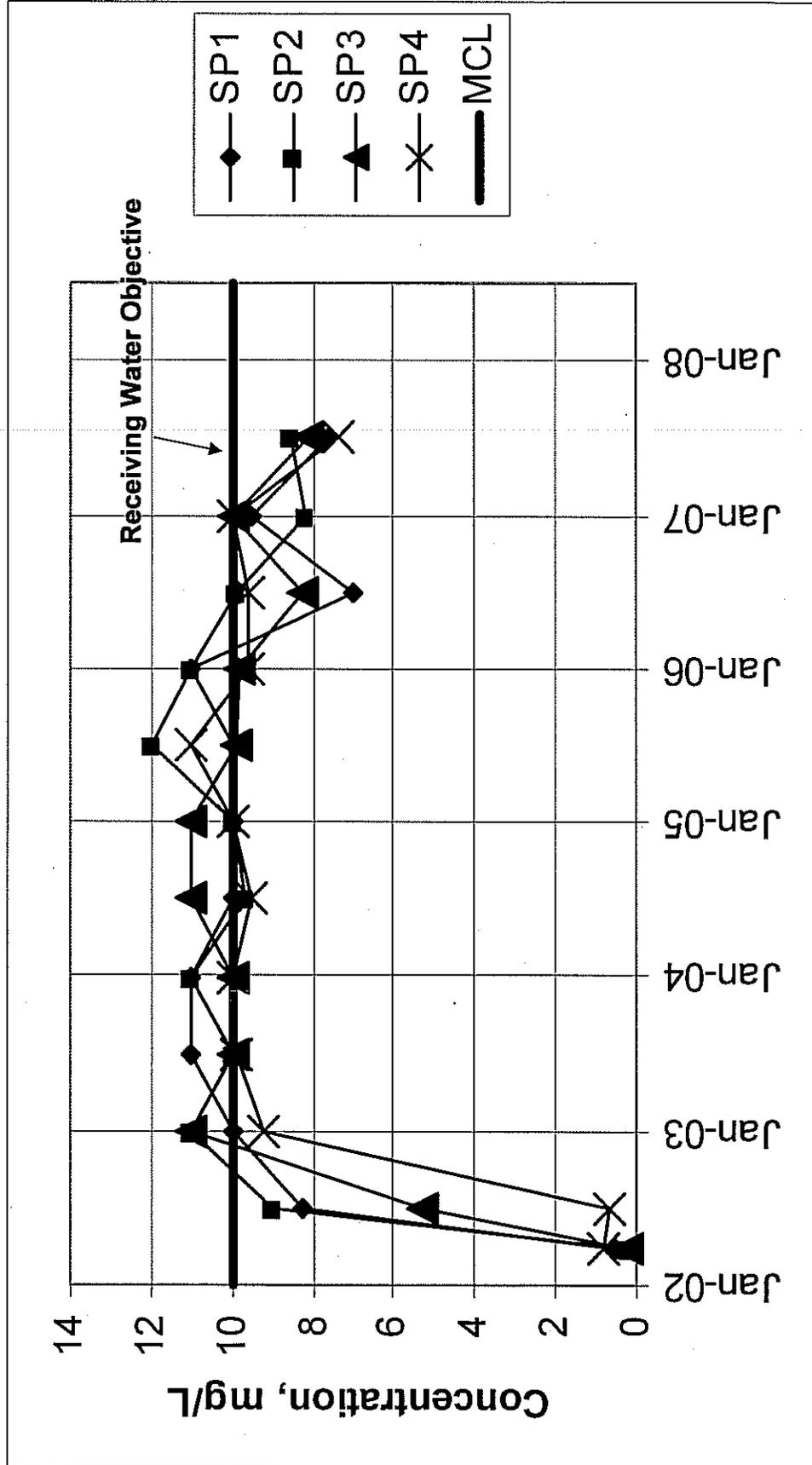
PROPOSED

Attachment A Location of Facility
Victor Valley Wastewater Reclamation Authority
Regional Wastewater Treatment Plant



South Percolation Pond Groundwater Monitoring Data for Nitrate-Nitrogen Victor Valley Wastewater Reclamation Authority Regional Wastewater Treatment Plant

Attachment B Groundwater
Victor Valley Wastewater Reclamation Authority
Regional Wastewater Treatment Plant

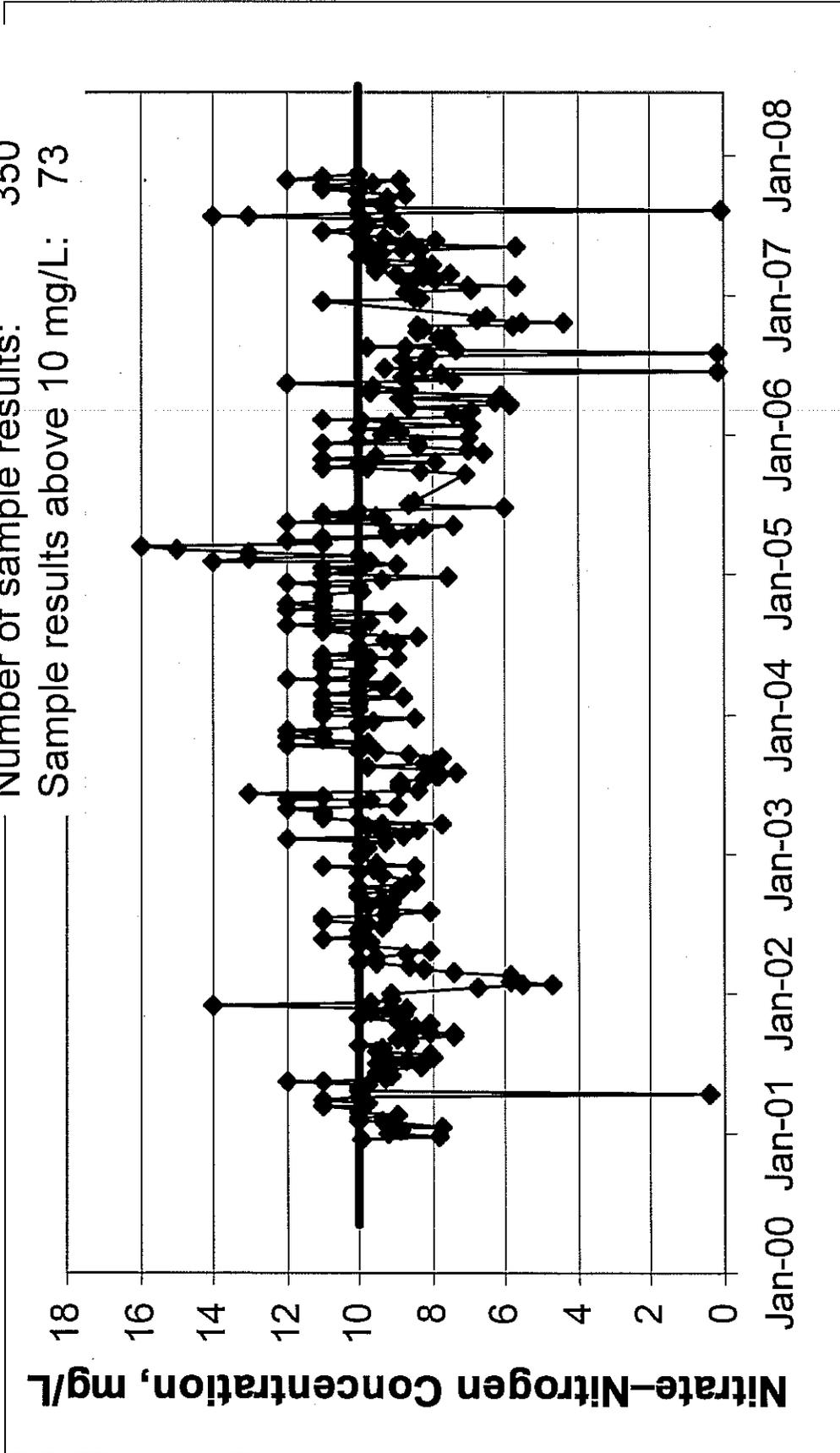


Source: Discharger Self-Monitoring Reports

Attachment C Surface Water Nitrate
Victor Valley Wastewater Reclamation Authority
Regional Wastewater Treatment Plant

Surface Water Nitrate-Nitrogen

Number of sample results: 350
Sample results above 10 mg/L: 73



10-0020

River Discharge Concentration
Receiving Water Objective for Nitrate-Nitrogen, 10 mg/L

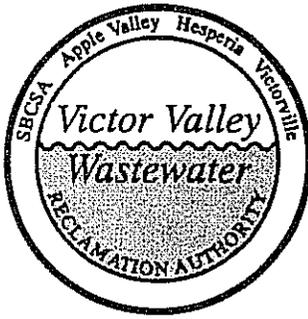
River Discharge Data Sources:

1/1/01 to 3/31/06: U:\Mojave\Jay\VVWRAINPDES Permit 7-26-06\VVWRA Interim Limits Based on All Data- with Nitrate Outliers Removed (tetratech).xls
Size 216 kBytes Last Saved 7/26/2006 4:30:50 PM

4/1/06 to 11/30/07: Discharger Self Monitoring Reports

ENCLOSURE 2

10-0021



Victor Valley Wastewater Reclamation Authority

A Joint Powers Authority and Public Agency of the State of California

15776 Main Street, Suite 3 • Hesperia, California 92345

Telephone: (760) 948-9849 • Fax: (760) 948-9897

e-mail: mail@vwwra.com

24 January 2008

Lahontan Region Water Quality Control Board
Mr. Jehiel Cass
Victorville Branch Office
14440 Civic Drive, Suite 200
Victorville, CA 92392-2306

1/210

CRWQCB REG 6	
Rec'd	JAN 24 2008
MC	HAND DEL
File	

Re: VVWRA WDID No. 6B3600109001
Comments on Cease and Desist Order

6B360109001
(VictorValleywwra)

Dear Mr. Cass,

Victor Valley Wastewater Reclamation Authority (VVWRA) wishes to extend its deepest thanks to the staff of the Lahontan Region Water Quality Control Board (LRWQCB) for their efforts on the Cease and Desist Order. There are seven attachments to this letter for your consideration.

The attachments include:

1. The first addresses VVWRA's specific comments to the Cease and Desist Order which includes six attachments
 - a. VVWRA Nitrogen levels in Secondary and Tertiary Effluent
 - b. RBF Flow Projection Analysis, November 2007
 - c. HDR Technical Memorandum on Phase II Rehabilitation and Upgrades Project Implementation, January 2008
 - d. Addendum to Antidegradation Analysis for Expansion of the Regional Wastewater Treatment Plant – River Discharge, January 2008
 - e. VVWRA CDO Recommendation for Proposed Total Nitrogen Limit
 - f. VVWRA Memo, Action Plan Interim Nitrate Limits, December 2007

Finally, given the short time that VVWRA has been provided to respond to the tentative Cease and Desist Order, VVWRA reserves the right to raise both legal and factual issues at the hearing on this matter. These comments by VVWRA on the tentative CDO are not meant to be exclusive or preclude VVWRA from (1) supplementing these comments, prior to, or at the hearing of this matter; and/or, (2) raising other issues prior to, or at, the hearing on this matter. VVWRA understands that if its comments are incorporated in to the CDO, VVWRA will not be subject to any penalties, minimum, mandatory or otherwise, as long as it complies with the terms of this CDO, its NPDES permit and WDR permit.

10-0022

Thank you for your time and consideration of these documents, if you have additional questions please contact me at your earliest convenience.

Sincerely,

A handwritten signature in black ink, appearing to read "Logan Olds", with a long horizontal flourish extending to the right.

Logan Olds
General Manager

10-0023

VVWRA

Cease and Desist Order Review

24 January 2008

1. Page 4, #8 Completion of construction for Phase 3B of the WWTP expansion, which includes nitrification and denitrification (NdN), will be complete in April of 2011. VVWRA requests that the operational date used for compliance occur in April of 2012.

The reasons are as follows:

- a. Membrane bio-reactors (MBR), ultraviolet disinfection (UV), new headworks, gas system, belt filter presses, modifications to the primary clarifiers and air bays represent significant changes in operations from conventional activated solids to biological nutrient reduction utilizing MBR. It will take time to retrain VVWRA staff on the significant changes to the wastewater treatment plants (WWTP) operation.
- b. The process modeling for Phase 3 is based on valid assumptions relating to flow and mass loadings as well as temperature. As you are aware NdN is very temperature dependent. Existing facilities have significant issues as the temperature cools in November through March resulting in poor settling and foaming. It is our belief that MBR will eliminate settling issues however the mixed liquor concentrations will be tripled. VVWRA staff is concerned how this may impact foaming. The data also clearly show reductions in nitrification during winter due to the colder temperatures. This is compounded by low alkalinity in the wastewater. Compliance during winter months is the most difficult time period for VVWRA operations.
- c. The existing flow is low in alkalinity. It is anticipated that the MBR process will eliminate VVWRA's need to add chemicals however staff remains skeptical. The reduced alkalinity may impact the bacteria responsible for conversion during NDN.
- d. The proposed design and construction schedule is very aggressive by industry standards. Furthermore, construction schedules are rarely completed on time. If the project is not completed in April of 2011 it is likely that startup will occur during the third or fourth quarter. This would mean that achieving compliance would occur while the temperatures are cooling and VVWRA staff recently received a new facility and are training on the new equipment.

10-0024

- e. If the Lahontan Regional Board decides to implement a November 2011 date for compliance. VVWRA will be forced to address each time delay in the quarterly reports and request that the CDO be reopened and revised.
2. Page 5, final paragraph ".....facilities that provide nitrogen removal will not be constructed until 2009-2010" Please revise per the attached schedule which indicates that construction will occur from the fourth quarter of 2009 through the second quarter of 2011, or 2009-2011.
3. Page 5, final paragraph states:

"The interim limit for total pounds of nitrogen discharged included in this Order is based on past plant performance using annual pounds discharged data from calendar year 2005."

- a. VVWRA and Lahontan staff have reviewed the 2005 data set (Attachment 1). Although VVWRA staff has made significant improvements in the operation of the facility it was never designed for nitrification de-nitrification (NdN). An analysis of the numbers indicates an improvement of 1.1 mg/L between 2005 and 2007. Despite increased flows efficiency has improved however this is not sufficient to accommodate growth.
- b. Attachment 2 is the Flow Projection Analysis prepared by RBF Consulting in November of 2007. Figure 4 of that document indicates that in 2011 influent flows will be between 16 and 21 mgd. Given that VVWRA will not have NDN facilities on line until mid to late 2011 this would then imply that given current operational parameters VVWRA will continue to discharge an annual average of 89 pounds total nitrogen per million gallons treated (Attachment 1). This would then mean that at 12mgd the facility would release approximately 193 tons/year of total nitrogen. Extrapolating this value for 16 mgd would equal 260 tons/year of total nitrogen released. This value exceeds the total nitrogen annually discharged in 2005 by 58 tons.
- c. On an interim basis VVWRA cannot increase efficiency without constructing significant new facilities to achieve the same levels of total nitrogen released in 2005. These facilities will be constructed during Phase 3B and placed on line in 2011 (Attachment 3, HDR Memo)

"An increase in influent flows to the treatment plant is expected to occur between now and November 1, 2011, when final effluent limits become effective."

- a. Please refer to the Flow Projection Analysis prepared by RBF Consulting in November of 2007 (Attachment 2).
- b. The Addendum to Antidegradation Analysis for Expansion of the Regional Wastewater Treatment Plant – River Discharge submitted in January of 2008

pages 6-10 indicate that the level of treatment provided by existing facilities will remain consistent throughout that timeline (Attachment 4).

- c. In practice VVWRA does not have the authority to restrict growth to the Member Agencies which would reduce total nitrogen loadings.

“Establishing an interim limit for total pounds of nitrogen discharged based on plant performance in 2005 provides the discharger with some allowance to accommodate growth until the new nitrogen removal facilities are built and operation, and still requires that the discharger operate the treatment plant to optimize effluent quality using the existing treatment facilities”

- a. Conceptually it was hoped by VVWRA and Lahontan staff that this would prove true. An analysis of the reported values indicates that this assumption was incorrect and cannot be used to accommodate for increases in flow volumes (Attachment 1).
 - b. VVWRA proposes that a value of 98 lbs/day/MG of total nitrogen per million gallons of flow be utilized to determine compliance (Attachment 5). For comparison in 2007, 193 tons of total nitrogen were discharged, if using 98 lbs/day/MG this would equal 211 tons for a difference of 18 tons per year to account for operational issues.
 - c. Please recall that to upgrade existing facilities (Phase 3B) it will be necessary to remove approximately 1/3 of the air bay tankage to perform the improvements. Yet VVWRA is proposing to meet the same levels of total nitrogen discharged currently.
 - d. VVWRA Operation and Maintenance staff also have several ideas to improve the efficiency of existing operations to further reduce total nitrogen levels (Attachment 6). Although staff cannot quantify the improvements in total nitrogen in mg/L, VVWRA remains committed to expending the significant resources necessary.
4. Page 6, #10, please refer to #1 above for discussion requesting change from November 2011 to April 2012.
 5. Page 8, I. B. “The pounds of total nitrogenmust not exceed **98 POUNDS/DAY/MG** per 12 month period.....”. Please refer to #3 above for discussion.
 6. Pages 8 through 11 please revise the following:
 7. II. Change the date for implementation of a Pollution Prevention Plan from April 1, 2008 to July 30, 2008. VVWRA anticipates it will take about 1 and ½ months to receive proposals and award a contract for preparation of the plan and approximately three months to prepare the plan. VVWRA anticipates it will take a total of one month for the

Regional Board to review and approve the plan and for VVWRA to take the steps necessary to initiate implementation of the plan.

8. IV.A. Change the date for submission of the Pollution Prevention Plan from March 17, 2008 to July 1, 2008 for the reasons cited in II above.
9. IV.C. Change the date for submission of a Groundwater Investigation Work Plan from March 28, 2008 to July 28, 2008. VVWRA anticipates it will take about 1 and ½ months to receive proposals and award a contract for preparation of the work plan and approximately three months to prepare the work plan.
10. IV.D. Change the date for submission of the Groundwater Investigation Report from February 17, 2009 to August 28, 2009. VVWRA anticipates that it will take the Regional Board approximately one month to review the Work Plan submitted under IV.C and then approximately 12 months to complete the work plan tasks and produce a final investigation report.
11. IV.E, Change the date for submission of the Nitrate Remediation Plan from May 15, 2009 to February 15, 2010. VVWRA anticipates that it will take the Regional Board approximately one month to review the Groundwater Investigation Report and approximately 1 and ½ months for VVWRA to receive proposals and award a contract for development of a remediation plan, and then about 4 months to develop the remediation plan.

10-0027

ENCLOSURE 3

(WILL BE SUBMITTED UNDER SEPARATE COVER)

10-0028