

Lahontan Regional Water Quality Control Board

March 22, 2012

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION**

2501 Lake Tahoe Boulevard, South Lake Tahoe, CA 96150

**NOTICE OF PROPOSED CLEANUP AND ABATEMENT ORDER FOR
COUNTY SANITATION DISTRICT NO. 20 OF LOS ANGELES COUNTY
AND CITY OF LOS ANGELES,
PALMDALE WATER RECLAMATION PLANT,
PALMDALE,
LOS ANGELES COUNTY**

NOTICE IS HEREBY GIVEN that the California Regional Water Quality Control Board, Lahontan Region (Water Board) is soliciting comments on a proposed Cleanup and Abatement Order (CAO) requiring the County Sanitation District No. 20 of Los Angeles County (District) and the City of Los Angeles to clean up and abate the effects of discharges to groundwater from the Palmdale Water Reclamation Plant (Reclamation Plant). The discharges have resulted in violations of waste discharge requirements for the Reclamation Plant and prohibitions contained in the Water Quality Control Plan for the Lahontan Region (Basin Plan). Written comments must be received at the address above, attention Chuck Curtis, or by email to CCurtis@waterboards.ca.gov, **by 5:00 p.m. on April 30, 2012.**

Discharges from the Reclamation Plant (owned by the District) to unlined ponds and to the former Effluent Management Site, now known as the Agricultural Site (owned by the City of Los Angeles), have adversely affected and polluted groundwater in the area of the discharges. The District has evaluated alternatives to clean up and abate the effects of the discharges and has proposed a preferred alternative. The preferred alternative includes agronomic application of water and nitrogen in recycled water to crops at the Agricultural Site, along with groundwater extraction at the hot spot within the nitrate plume beneath the site, as is currently being implemented.

The proposed CAO would require implementation of the preferred alternative and additional investigation and reporting on plume delineation and containment, along with reporting on cleanup progress. The proposed CAO includes an interim cleanup level of 7 micrograms per liter of nitrate (as nitrogen). This interim cleanup level will be evaluated as the project proceeds and may be modified in the future.

Following the public comment period, Water Board staff will review any comments it receives and make changes to the proposed CAO if appropriate. The Water Board will consider adopting the Cleanup and Abatement Order at its **June 13 and 14, 2012** meeting. An agenda for the meeting and the location and time of the meeting will be available at least 10 days before the meeting and can be found on the Water Board's website at <http://www.waterboards.ca.gov/lahontan/>.

Please bring the above information to the attention of anyone you know who would be interested in the matter. Any questions concerning the details of the Cleanup and Abatement Order should be directed to Chuck Curtis at (530) 542-5432 (CCurtis@waterboards.ca.gov). Written comments should be sent by email or by U.S. Mail to Chuck Curtis at the Water Board's address listed above.



Chuck Curtis
Supervising Water Resource Control Engineer

Dated: March 22, 2012

Enclosure: Proposed Cleanup and Abatement Order

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

CLEANUP AND ABATEMENT ORDER NO. R6V-2012-PROPOSED
WDID NO. 6V190107069

REQUIRING COUNTY SANITATION DISTRICT NO. 20 OF LOS ANGELES COUNTY
AND THE CITY OF LOS ANGELES
TO CLEAN UP AND ABATE THE EFFECTS OF DISCHARGES
FROM THE PALMDALE WATER RECLAMATION PLANT

LOS ANGELES COUNTY

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

FINDINGS

1. The County Sanitation District No. 20 of Los Angeles County (District) owns and operates the Palmdale Water Reclamation Plant (Reclamation Plant). Effluent from the Reclamation Plant is reused at the Agricultural Site owned by the City of Los Angeles and managed by City of Los Angeles World Air Airports, a City department (collectively hereinafter the City of Los Angeles). The District leases the Agricultural Site from the City of Los Angeles to use recycled waste water for irrigation of crops.
2. For the purposes of this Order, the District and the City of Los Angeles are referred to as the "Dischargers."
3. The Reclamation Plant and Agricultural Site are located approximately two miles northeast of central Palmdale as shown in Attachment A, which is made part of this Order. The Reclamation Plant is located at 39300 30th Street East, Palmdale. The Agricultural Site is located northeast of the Reclamation Plant.
4. The District operates the Reclamation Plant and Agricultural Site (collectively referred to as the "Facility") under Waste Discharge Requirements (WDRs) and Water Recycling Requirements adopted by Lahontan Water Board Order No. R6V-2011-0012.
5. Over the course of the operation of Reclamation Plant, which began in 1953, the District has discharged effluent to unlined ponds and the former Effluent Management Site, which is within the boundaries of the current Agricultural Site.
6. In 1989, the District installed two monitoring wells in the vicinity of the former Effluent Management Site. Initial sampling revealed elevated concentrations of nitrate in groundwater. Subsequent groundwater investigations and monitoring showed that the discharge from the former Effluent Management Site and the unlined ponds had

caused concentrations of nitrate as nitrogen¹ in groundwater to exceed the maximum contaminant level (MCL) of 10 milligrams/liter (mg/L), which constituted a violation of the District's WDRs and a violation of California Water Code, section 13304.

7. The Lahontan Water Board adopted Cease and Desist Order No. R6V-2004-0039 (CDO) for the District on October 13, 2004. The CDO required the District to cease disposal of effluent in a manner that would cause violations of water quality objectives by date certain. The District expanded the agricultural reuse area and constructed lined storage ponds so that effluent generated during the winter months could be stored for reuse on crops at agronomic rates during the summer. Since spring 2010, the District's application of waste water for reuse as irrigation has not exceeded agronomic rates. The Lahontan Water Board rescinded the CDO on June 9, 2011 after the District achieved full compliance with the CDO.
8. On November 12, 2003, one year prior to adopting the CDO, the Lahontan Water Board adopted Cleanup and Abatement Order (CAO) No. R6V-2003-056. The 2003 CAO ordered the District and the City of Los Angeles to cleanup and abate the effects of the discharge and the threatened discharge of nitrate to groundwater and to conduct the following tasks in accordance to a specified schedule.
 - Provide a plan and a schedule to reduce the amount of nitrogen that reaches groundwater (i.e., abatement measures).
 - Complete plume delineation by August 15, 2004.
 - Contain the plume to its extent as delineated.
 - Implement a plan to "restore ground water quality to background levels or other levels approved by the Regional Board pursuant to State Water Resources Control Board Resolutions Nos. 68-16 and 92-49."
9. The Lahontan Water Board adopted Resolution No. R6V-2005-0010 (Resolution) on April 13, 2005. The 2005 Resolution found that it was "premature to establish a cleanup standard consistent with State policies given the rather limited range of alternatives proposed, the costs, and the possible consumptive use of pumped groundwater associated with the alternatives considered by the Dischargers." The Resolution directed the Dischargers to initiate a cleanup project to reduce nitrate concentrations in groundwater to less than the MCL in the shortest possible time. The Resolution stated that the Dischargers should continue to consider additional options for remediation of groundwater and that these options should consider uses of pumped groundwater that do not exacerbate overdraft of the groundwater basin.
10. The District's compliance with the 2003 CAO and 2005 Resolution is summarized below.

¹ All nitrate concentrations discussed in this CAO are reported as nitrate as nitrogen.

a. Abatement (CAO)

The Dischargers submitted the Abatement Report in March 2004. This report satisfied the abatement-related requirements of the CAO. No additional abatement measures are required by this Order.

b. Complete Plume Delineation (CAO)

The District's Nitrate Delineation effort included the installation of additional monitoring wells and collection of groundwater samples from exploratory borings and delineation of the extent of the plume as of 2004. The effort established that in 2004, elevated nitrate concentrations in groundwater encompassed an area with a diameter of approximately 3 miles. Depth discrete groundwater samples revealed that the highest concentrations of nitrate in groundwater (greater than 10 mg/L) are in the upper 50 feet of the aquifer and that concentrations decrease to less than 3.0 mg/L below 150 feet from the top of the aquifer. Areas outside of the nitrate plume that is associated with the District's discharges generally contain less than 3 mg/L nitrate.

Lahontan Water Board staff previously determined that the District's Nitrate Delineation effort satisfied the 2003 CAO's requirement for plume delineation. However, the extent of the plume can change over time due to migration with the regional groundwater flow and other factors that influence groundwater movement such as groundwater pumping. Additionally, the groundwater samples from the exploratory borings were one-time samples that cannot be used to delineate the plume's extent after 2004. Consequently, plume delineation must be an ongoing effort. Attachment B shows isoconcentration contours that represent the approximate extent of elevated nitrate concentrations in groundwater based on 2011 data.

This Order requires the Dischargers to annually evaluate the adequacy of the monitoring program for the purpose of plume delineation.

c. Containment to Delineated Extent (CAO)

In 2006, the District implemented an interim remedial measure (Interim Measure) consisting of abatement measures (i.e., better effluent management) and extraction of nitrate-impacted groundwater in the vicinity of the plume's hot spot. The Dischargers' Interim Measure was designed to both contain and remediate the nitrate plume and is discussed further under Finding No. 10.d.

Lahontan Water Board staff evaluated the current status of containment by examining nitrate concentration trends in wells near the perimeter of the plume as delineated in 2004. In cases where the 2004 delineation was based on interpolation between sampling points or on a sample from an exploratory boring, staff evaluated trends in the nearest upgradient well. Well locations are shown in Attachment B.

Based on staff's evaluation, the perimeter of the plume appears to be stable or decreasing, except in the northern and western portions of the plume, where nitrate concentrations are trending upward. Concentrations of nitrate in the perimeter wells in the northwest remain below the MCL, but show statistically significant increasing trends as described below.

- Nitrate concentrations in MW-28, approximately one mile north of the former Effluent Management Site, have increased from average annual concentration of 6.9 mg/L in 2006 to an average annual concentration of 8.7 mg/L in 2011 (see Table 1). There are no monitoring wells downgradient of MW-28.
- MW-57 and deeper, paired well MW-58 are located at the northwestern edge of the hot spot near the boundary of Air Force Plant 42. MW-57 has increased from an average annual concentration of 7.2 mg/L when monitoring began in 2008 to an average annual concentration of 8.8 mg/L in 2011 (see Table 1). MW-58 has increased from an average annual concentration of 4.7 mg/L when monitoring began in 2008 to an average annual concentration of 5.9 mg/L in 2011.
- DW4-2 is an Air Force municipal supply wells located approximately 3,000 feet northwest and downgradient of MW 57. Since DW4-2 was incorporated in the monitoring program in 2006, it has increased from an average annual concentration of 1.9 mg/L to an average annual concentration of 3.2 mg/L in 2011.
- MW-32 is located approximately 1.3 miles west of the Agricultural Site. Nitrate concentrations in groundwater from this well are very low (less than 1.0 mg/L). However, a trend analysis for this well shows a statistically significant increasing trend, with average annual nitrate concentration increasing from 0.57 mg/L in 2007 to 0.71 in 2011.

**Table 1: Average Annual Nitrate Concentrations
 From Perimeter Groundwater Wells**

Well	Average Concentration (mg/L)					
	2006	2007	2008	2009	2010	2011
MW-28	6.9	6.6	8.0	8.5	8.4	8.7
DW4-2	1.9	2.2	2.5	2.8	2.8	3.2
MW-57	na	na	7.2	7.3	8.3	8.8
MW-58	na	na	4.7	4.9	5.4	5.9
MW-32	na	0.57	0.57	0.61	0.67	0.71

Wells are listed from north to northwest to west.

na = data not available because the wells were installed after specified year.

Based on the increasing trends, the Dischargers may not have achieved containment in the northwestern portion of the plume. However, demonstration of containment can be complicated by regional or localized sources that can be

contributing nitrate to groundwater. For example, one of the upgradient monitoring wells, MW-1, shows an increasing trend, increasing from 0.3 in 2003 to 3.0 in 2011. MW-1 is the most westerly of the upgradient wells and the increasing trend maybe due to upgradient source of nitrate (e.g., application of fertilizer, septic systems, or livestock). The increasing trend is consistent with an increasing trend in supply well SW-5, which is approximately 0.7 miles west of MW-1. The nitrate concentrations in SW-5 have increased from about 1.0 in 1990 when first sampled to almost 5.0 when last sampled in 2008.

This Order requires the Dischargers to delineate and investigate the northwestern portion of the plume to determine if additional containment measures are necessary. Also, since various regional and localized conditions, such as groundwater overdraft and changes in operation of supply wells, can influence plume migration, this Order requires that the Discharge evaluate the adequacy of containment measures annually.

d. Develop and Implement a Plan to Restore Groundwater (CAO and Resolution)

In response to the CAO's requirement to develop a plan to restore groundwater quality, the District evaluated various remedial alternatives using numerical models to simulate nitrate migration in the vadose zone and aquifer. The District submitted its initial evaluation in the 2004 Containment and Remediation Plan (CR Plan). Four supplements to the Plan were submitted to evaluate additional remedial scenarios and to re-evaluate the scenarios after the models were revised based on additional hydrogeologic data. The CR Plan and its supplements compared the alternatives according to various criteria, including remedial effectiveness and costs. Based on the comparisons, the District concluded that the preferred alternative was the Hot Spot Containment and Remediation alternative, which consisted of groundwater extraction in the vicinity of the nitrate hot spot.

To satisfy the Resolution's directive to implement a cleanup project to reduce nitrate concentrations to below the MCL in the shortest possible time, the District submitted the Groundwater Monitoring Plan for Containment and Remediation (Groundwater Plan) in September 2005. The Groundwater Plan described how the District's preferred alternative, Hot Spot Containment and Remediation, would be implemented as the Interim Measure and how its performance would be monitored. In February 2006, Lahontan Water Board staff requested that the District implement the Interim Measure. In 2006, the District installed six extraction wells in the vicinity of the nitrate hot spot and began operation of the Interim Measure. From 2006 to 2009, the District operated the extraction wells seasonally, from spring through fall. The District completed construction of the lined storage ponds in November 2009 that allow the District to irrigate crops at the Agricultural Site at agronomic rates. Since 2009, the District has operated the extraction wells continuously.

The CR Plan and its supplements reported that the primary mechanism for remediation was through better effluent management and that active remediation

(i.e., groundwater extraction) did not significantly increase the rate of remediation. The modeling effort indicated that remediation of the groundwater plume will be slow and that the decrease in nitrate levels will become slower over time.

The most recent CR Plan supplement, Supplement No. 4, was submitted in June 2009 and applied a 50-year model simulation to four alternatives, specifically:

- Base Case. Effluent management only (included in all alternatives);
- Interim Measure (as implemented). Six existing hot spot extraction wells and agricultural reuse at the Agricultural Site;
- Interim Measures with Row Crops: Modified Interim Measure Alternative in which agricultural reuse of effluent and groundwater extraction would cease in 2022, which is the year the District's lease with the City of Los Angeles expires;
- Aggressive Plume Remediation Alternative: Interim Measure Alternative plus 22 additional extraction wells located throughout the plume. Extracted groundwater would be treated and reinjected into the aquifer.

Supplement No. 4 found that, for each alternative, all areas of the plume decreased to below the MCL by the year 2025. For the first three alternatives, the highest concentrations of nitrate remaining at the end of the simulation period were between 6 to 7 mg/L. For the fourth alternative, Aggressive Plume Remediation, the highest nitrate concentrations remaining at the end of the simulation period were between 5 and 6 mg/L.

Supplement No. 4 also contained a cost analysis for the various projects, which showed that the cost for the Aggressive Plume Remediation was significantly greater than the other measures. The District estimated that the cost to implement the Interim Measure and continue its operation through the year, 2060, was approximately \$10,433,000 and the cost to implement and operate the Aggressive Plume Remediation was approximately \$129,434,000. The District's evaluation of cost effectiveness showed that the Interim Measure removed 23.2 pounds of nitrate per \$1,000 spent, while the Aggressive Plume Remediation only removed 4.6 pounds per \$1,000 spent.

11. Remediation Status

To evaluate the results of the District's remedial efforts through the implementation of the Interim Measure (i.e., groundwater extraction in the vicinity of the hot spot), Lahontan Water Board staff evaluated nitrate concentrations in hot spot monitoring wells. Table 2 shows a comparison of annual average nitrate concentrations of wells in the hot spot.

Based on staff's evaluation it appears that nitrate concentrations are stable or decreasing in most monitoring wells in the vicinity of the hot spot. The exception to this statement is MW-23, which shows an average annual nitrate concentration

increase from 5.7 mg/L in 2006 to 12.1 mg/L in 2011. MW-51, a slightly deeper well located adjacent to MW-23, also shows an increasing trend but the nitrate concentrations are still below the MCL. These two wells are at the western edge of the nitrate hot spot and are adjacent to one of the District's extraction wells. It is possible the increase in these wells is the result of the extraction well causing the higher nitrate-impacted groundwater from the center of the hot spot to move to the vicinity of the monitoring wells.

This Order requires that the Dischargers evaluate the increasing trends in this portion of the hot spot and determine if the plume is fully delineated and contained downgradient of this area.

**Table 2: Average Annual Nitrate Concentrations
 From Groundwater Wells In the Vicinity of the Plume Hot Spot**

Well	Average Concentration (mg/L)					
	2006	2007	2008	2009	2010	2011
MW-52	na	na	14.8	11.9	8.5	8.3
MW-4	17.0	15.5	14.9	14.9	14.8	13.7
MW-53	na	na	14.9	15.6	15.4	14.7
MW-54	na	na	9.1	10.4	9.7	7.9
MW-23	5.7	7.4	7.2	8.1	12.2	12.1
MW-51	7.2	7.4	6.4	8.1	8.8	8.7
MW-40	na	na	10.0	10.4	10.0	10.2

Wells are listed from north to south.

Nitrate concentrations equal or greater than the MCL of 10 mg/L are shown in bold.

na = data not available because the wells were installed in 2008.

12. Resolution's Requirement to Determine If Additional Remedial Technologies Or Extracted Water Reuse Options Are Available

CR Plan Supplement No. 4 found that no additional remedial technologies have become available since the 2004 CR Plan. However, the District continues to evaluate the feasibility of water reuse options. Currently, the District is working with local water purveyors to supply recycled water to various sites. The City of Palmdale is designing a pump station that would provide recycled water to City-owned sites near the Reclamation Plant. The Palmdale Water District has completed a Recycled Water Facilities Master Plan, but has not established the schedule for its implementation. The City of Palmdale and Los Angeles County Waterworks are near completion of the design for a main recycled water pipeline that would supply recycled water to a proposed hybrid power plant. The hybrid power plan completion date will be sometime after 2015.

13. Interim Cleanup Goals

There are many variables involved in groundwater conditions over the decades required for remediation of such a large plume, e.g., groundwater pumping locations and pumping rates, regional overdraft, artificial and natural recharge, and climatic change. It is not feasible to reliably anticipate future groundwater conditions that could

affect this plume over a 50-year time frame. It is also possible that regulatory factors could change, such as a lower MCL for nitrate could be adopted in the future. Additionally, several of the extraction wells contain only moderately elevated concentrations of nitrate, i.e., less than 5 mg/L, compared to background conditions of generally less than 3 mg/L. Continued extraction from these wells under current conditions can contribute to overdraft while only providing modest remedial benefits. Therefore, the most practical approach to containment and remediation of the nitrate plume is through continued monitoring and modification of the monitoring network and the remediation system as warranted over time, and by establishing interim cleanup goals as milestones for remedial progress.

To better focus the interim remediation efforts and to minimize overdraft, this Order establishes an interim cleanup goal of 7 mg/L, based on the approximate maximum nitrate concentration after 50 years identified in the remediation simulations. The Lahontan Water Board may revise this interim cleanup goal based on the variables discussed above.

14. Legal and Regulatory Authority: This Order conforms to and implements policies and requirements of the Porter-Cologne Water Quality Control Act (Division 7, commencing with Water Code section 13000) including (1) sections 13267 and 13304; (2) applicable State and federal regulations; (3) all applicable provisions of Statewide Water Quality Control Plans adopted by the State Water Resources Control Board (State Water Board) and the *Water Quality Control Plan for the Lahontan Region* (Basin Plan) adopted by the Lahontan Water Board, including beneficial uses, water quality objectives, and implementation plans; (4) State Board policies and regulations, including State Water Board Resolution No. 68-16 (*Statement of Policy with Respect to Maintaining High Quality of Waters in California*), Resolution No. 88-63 (*Sources of Drinking Water Policy*), and Resolution No. 92-49 (*Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under California Water Code Section 13304*); California Code of Regulations (CCR) Title 23, Chapter 16, Article 11; CCR Title 23, section 3890 et seq., and (5) relevant standards, criteria and advisories adopted by other State and federal agencies.

15. Water Code section 13304, subdivision (a) states in part:

Any person . . . who has caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged to waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board clean up or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action, including but not limited to, overseeing cleanup and abatement efforts.

16. The WDRs in Board Order No. R6V-2011-0012 contain Discharge Specification, I.C., which states, in part:

I.C. Discharges from this Facility shall not cause a violation of any

applicable water quality standard for the receiving water adopted by the Water Board or the State Water Resources Control Board. If more stringent applicable water quality standards are promulgated or approved, the Water Board will revise and modify this Order in accordance with such more stringent standards.

The Facility's discharge shall not cause the presence of the following substances or conditions in groundwater of the Antelope Valley Groundwater Basin:

1. Non-degradation – State Water Resource Control Board Resolution No. 68-16 "Statement of Policy With Respect to Maintaining High Quality of Waters In California," known as the Non-degradation Objective, requires maintenance of existing high quality in surface waters, groundwaters, and wetlands. Whenever the existing quality of water is better than the quality of water established in the Basin Plan, such existing quality shall be maintained unless appropriate findings are made under Resolution No. 68-16.

...
3. Chemical Constituents - Groundwaters shall not contain concentrations of chemical constituents in excess of the maximum contaminant level or secondary maximum contaminant level based on drinking water standards specified in the following provisions of California Code of Regulations, title 22: Table 64431-A of section 64431 (Inorganic Chemicals), Table 64444-A of section 64444 (Organic Chemicals), Table 64433.2-B of section 64433.2 (Fluoride), Table 64449-A of section 64449 (Secondary Maximum Contaminant Levels - Consumer Acceptance Limits), and Table 64449-B of section 64449 (Secondary Maximum Contaminant Levels - Ranges). This incorporation-by-reference is prospective including future changes to the incorporated provisions as the changes take effect.

17. The conditions described in these Findings identify discharges of wastes in violation of the WDR, where nitrate-containing wastes have been discharged or deposited into waters of the state (groundwaters of the Antelope Valley) or probably will be discharged into waters of the state. The concentrations of nitrate in groundwater above the MCL constitute a condition of pollution. The Dischargers are, therefore, subject to Water Code section 13304.
18. Pursuant to Water Code section 13267, subdivision (b), this Order requires the Dischargers to provide to the Lahontan Water Board technical and monitoring reports (reports) including, but not limited to, corrective action completion reports. The reports required by this Cleanup and Abatement Order are described in section A of this Order. The Lahontan Water Board needs the information required by these reports to ensure the cleanup of the discharge and to ensure the Dischargers perform all actions

required by the work plans, and to ensure that performance of those actions is adequate to complete cleanup of the conditions in violation of the WDRs. The burden, including costs, of preparing these reports bears a reasonable relationship to the need for the reports and the benefit to be obtained from them.

19. The District is primarily liable for complying with this Order. A regional board may make a distinction between primary and secondary liability. (See, e.g., *Alcoa et al.*, State Water Board WQ Order No. 93-09 at p. 12, fn. 8.) This distinction has been made primarily for equitable reasons.

In this case, the District is primarily liable for compliance with this cleanup order because the District initiated and contributed to the discharge of waste. More specifically, because the District caused waste to be discharged such that groundwater has been adversely affected by elevated concentrations of nitrate and salts, the District is primarily responsible for compliance with this Order.

20. The City of Los Angeles is secondarily liable for complying with this Order. The State Water Board has also cited factors that are appropriate for regional boards to consider in determining whether a party should be held secondarily liable. These factors include making a distinction between those parties who were considered responsible parties solely due to their land ownership and whether or not the parties initiated or contributed to the discharge.

In this case, the District, rather than the City of Los Angeles, initiated and contributed to the discharge of waste, and the City of Los Angeles is named as a responsible party due to its ownership and management of the discharge site.

21. The issuance of this Order is an enforcement action taken by a regulatory agency and is exempt from the provision of the California Environmental Quality Act (CEQA; Public Resources Code section 21000 et seq.), pursuant to California Code of Regulations (CCR), title 14, section 15321, subdivision (a)(2). This Order requires submittal of detailed work plans that address cleanup activities. The proposed activities under the work plans are not yet known, but implementation of the work plans may result in significant physical impacts to the environment that must be evaluated under CEQA. The appropriate lead agency will address the CEQA requirements prior to implementing any work plan that may have a significant impact on the environment.

IT IS HEREBY ORDERED that, pursuant to California Water Code sections 13304 and 13267, the Dischargers shall take the following actions to comply with this Order:

A. ORDERS

1. Prior CAO

Board Order No. R6V-2003-056 (CAO) is hereby rescinded except for purposes of enforcement.

2. Plume Delineation

- a. **By August 1, 2012**, the Dischargers shall submit a plume delineation plan for the Executive Officer's acceptance. The plan shall describe how the north and western portions of the plume will be delineated and shall include a schedule for conducting the effort and reporting the results. The Dischargers shall implement the plan within 30 days after the Executive Officer's acceptance of the workplan.
- b. Annually, starting in 2012, for the period of January 1 through December 31, the Dischargers shall evaluate the adequacy of the existing groundwater monitoring network for the purpose of plume delineation. The evaluation shall consider whether there is adequate lateral and vertical delineation at the plume margins. Deficiencies in the monitoring network shall include any factor that prohibits the collection of samples as required in Board Order and Monitoring and Reporting Program No. R6V-2011-0012. The annual evaluation must be submitted in an Annual Report due **by March 31** of the year following the evaluation period. The Annual Report must contain proposals to correct any inadequacy or deficiencies in the monitoring network. The reporting may be included in the Annual Report required in Board Order R6V-2011-0012.

3. Plume Containment

- a. **By August 1, 2012** the Dischargers shall submit a plume containment evaluation plan for the Executive Officer's acceptance. The plan shall propose methods to evaluate the status of plume containment. The plan shall propose specific perimeter groundwater monitoring wells to use for containment evaluation. The evaluation methods shall include statistical evaluation of nitrate concentrations consistent with the USEPA *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance*, March 2009.
- b. **By March 31** of each year, the Dischargers shall report the results of the previous year's containment evaluation. The reporting may be included in the Annual Report required in Board Order R6V-2011-0012.
- c. If the statistical analysis determines there is an increasing trend in any perimeter well used to evaluate containment, the Dischargers shall submit a work plan for the Executive Officer's acceptance within 30 days after the submittal of the Annual Report. The work plan shall propose appropriate follow-up actions, including additional investigation or corrective actions.

4. Plume Remediation and Interim Cleanup Goal

- a. **By August 1, 2012**, the Dischargers shall submit a plan and a schedule to evaluate the increasing trends in the vicinity of MW-23. The Dischargers shall implement the plan within 30 days after the Executive Officer's acceptance of the work plan.
- b. The Dischargers shall continue to evaluate the performance of the six existing groundwater extraction wells as required by Board Order No. R6V-2011-0012, which

requires that the District report annually on the results of the evaluation and to propose extraction well optimization measures as warranted.

- c. If monitoring of the extraction wells finds that the nitrate concentrations of the extracted water has remained below the interim cleanup level of 7 mg/L for a period of six months, the Dischargers may cease extraction from that well. After cessation of extraction, monitoring of the extraction well must continue, and, if the nitrate concentration increases to levels above the interim cleanup level, extraction must resume.

5. Reuse of Extracted Groundwater

By January 1, 2013, the Dischargers shall submit a plan and schedule to establish reuse options that do not exacerbate groundwater overdraft conditions. The plan must designate the reuse areas and parties and provide a schedule for implementation of the reuses.

6. Certification for all Plans and Reports

All reports required under this Cleanup and Abatement Order are required pursuant to Water Code section 13267 and shall include a statement by the Dischargers, or by a duly authorized representative of the Dischargers, certifying (under penalty in conformance with the laws of the State of California) that the plan and /or report is true, complete, and accurate. Hydrogeologic reports and plans shall be prepared or directly supervised by, and signed by a Professional Geologist or Professional Civil Engineer licensed in California.

7. Liability for Oversight Costs Incurred by Lahontan Water Board

The Dischargers shall be liable, pursuant to Water Code section 13304, to the Lahontan Water Board for all reasonable costs incurred by the Lahontan Water Board to investigate unauthorized discharges of waste, or to oversee clean up of such waste, abatement of the effects thereof, or other remedial action, pursuant to this Order. The Dischargers shall reimburse the Lahontan Water Board for all reasonable costs associated with site investigation, oversight, and cleanup. Failure to pay any invoice for the Lahontan Water Board's investigation and oversight costs within the time stated in the invoice (or within thirty days after the date of invoice, if the invoice does not set forth a due date) shall be considered a violation of this Order. If the Facility is enrolled in a State Water Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program.

NOTIFICATIONS

B. No Limitation of Water Board Authority

This Order in no way limits the authority of the Lahontan Water Board or State Water Board to institute additional enforcement actions or to require additional investigation and cleanup of the site consistent with the Water Code. This Order may be revised by the Executive Officer as additional information becomes available.

C. Request for Extension of Time.

If for any reason, the Dischargers are unable to perform any activity or submit any document in compliance with the schedule set forth herein, or in compliance with any work schedule submitted pursuant to this Order and approved by the Executive Officer, the Dischargers may request, in writing, an extension of the time specified. The extension request shall include justification for the delay. An extension may be granted only by revision of or amendment to this Order.

D. Enforcement Notification.

Failure to comply with the terms or conditions of this Cleanup and Abatement Order may result in additional enforcement action, which may include the imposition of administrative civil liability pursuant to California Water Code section 13350 and/or section 13268 or referral to the Attorney General of the State of California for such legal action as he or she may deem appropriate.

E. Requesting Administrative Review by the State Water Board.

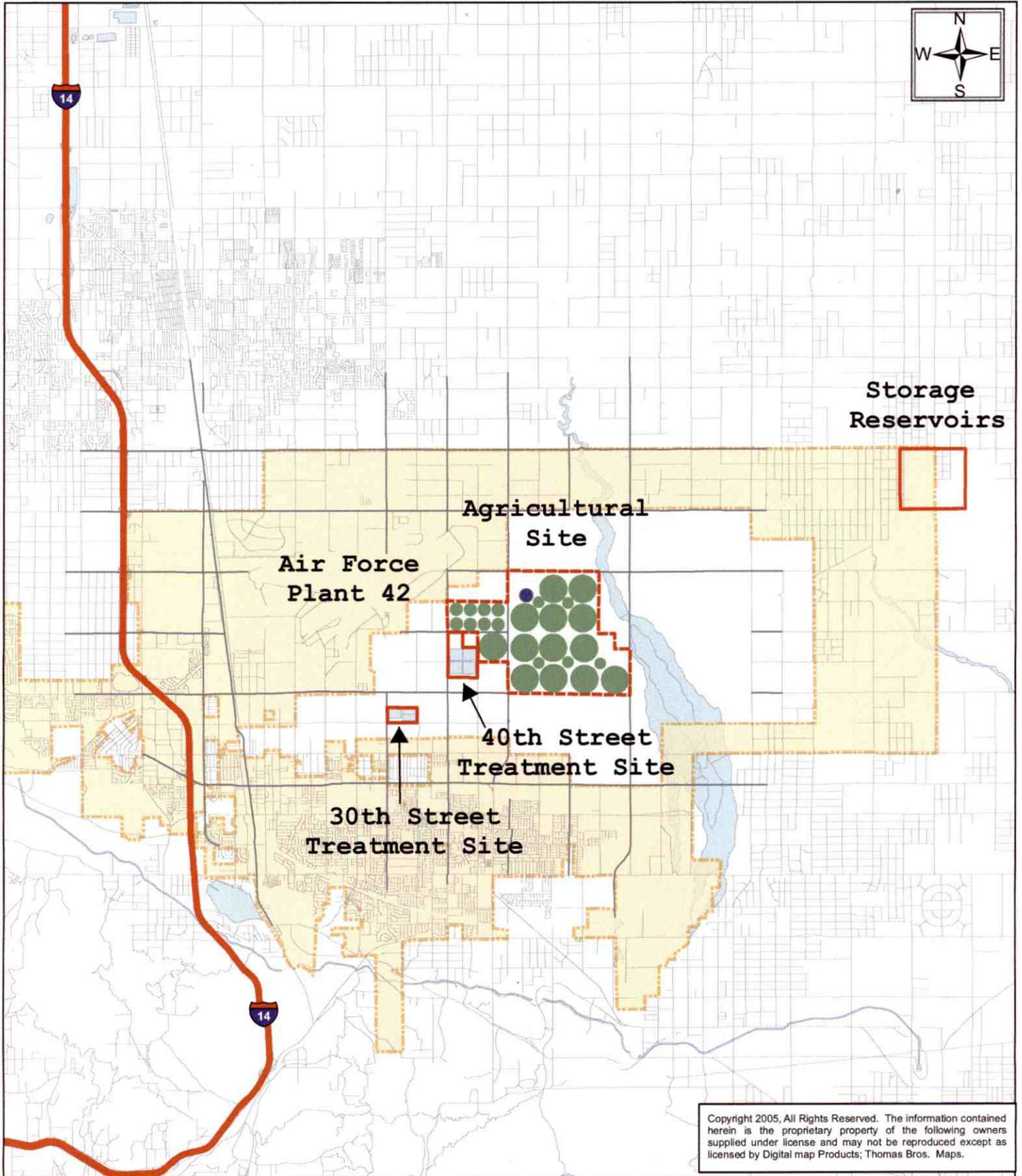
Any person aggrieved by an action of the Lahontan Water Board that is subject to review as set forth in Water Code section 13320, subdivision (a), may petition the State Water Board to review the action. Any petition must be made in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 and following. The State Water Board must receive the petition within 30 days of the date the action was taken, except that if the thirtieth day following the date the action was taken falls on a Saturday, Sunday, or state holiday, then the State Water Board must receive the petition by 5:00 p.m. on the next business day. Copies of the law and regulation applicable to filing petitions may be found on the Internet at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

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 June 13, 2012.

HAROLD J. SINGER
EXECUTIVE OFFICER

Attachments: A. Location Map
 B. Facility Map
 C. Water Code section 13267 Fact Sheet

General Facilities Locations



Explanation

- MW21 ⊕ Monitoring well location and designation
- LAWA7 ⊕ Water supply well location and designation
- 3.38 Nitrate (as N) in groundwater in milligrams per liter; results listed are from the Third and Fourth Quarter 2011 groundwater sampling event
- NS Not sampled
- 10 - - - - - Interpreted nitrate (as N) isoconcentration contour
- Effluent Management Site
- Air Force Plant 42 boundary
- Los Angeles World Airports boundary
- Coincidence of fault and groundwater subbasin, faults approximate with Anolepe Valley groundwater basin (Boyd, 1987)
- 24 Public land survey section

Notes:

1. Reported results are from groundwater samples collected during the Third and Fourth Quarter 2011 sampling events coordinated by District Staff.
2. Isoconcentration contours were interpreted using data from monitoring wells completed in the upper 50 feet of the regional water table, and consideration of discrete depth groundwater data obtained during the nitrate delineation program.



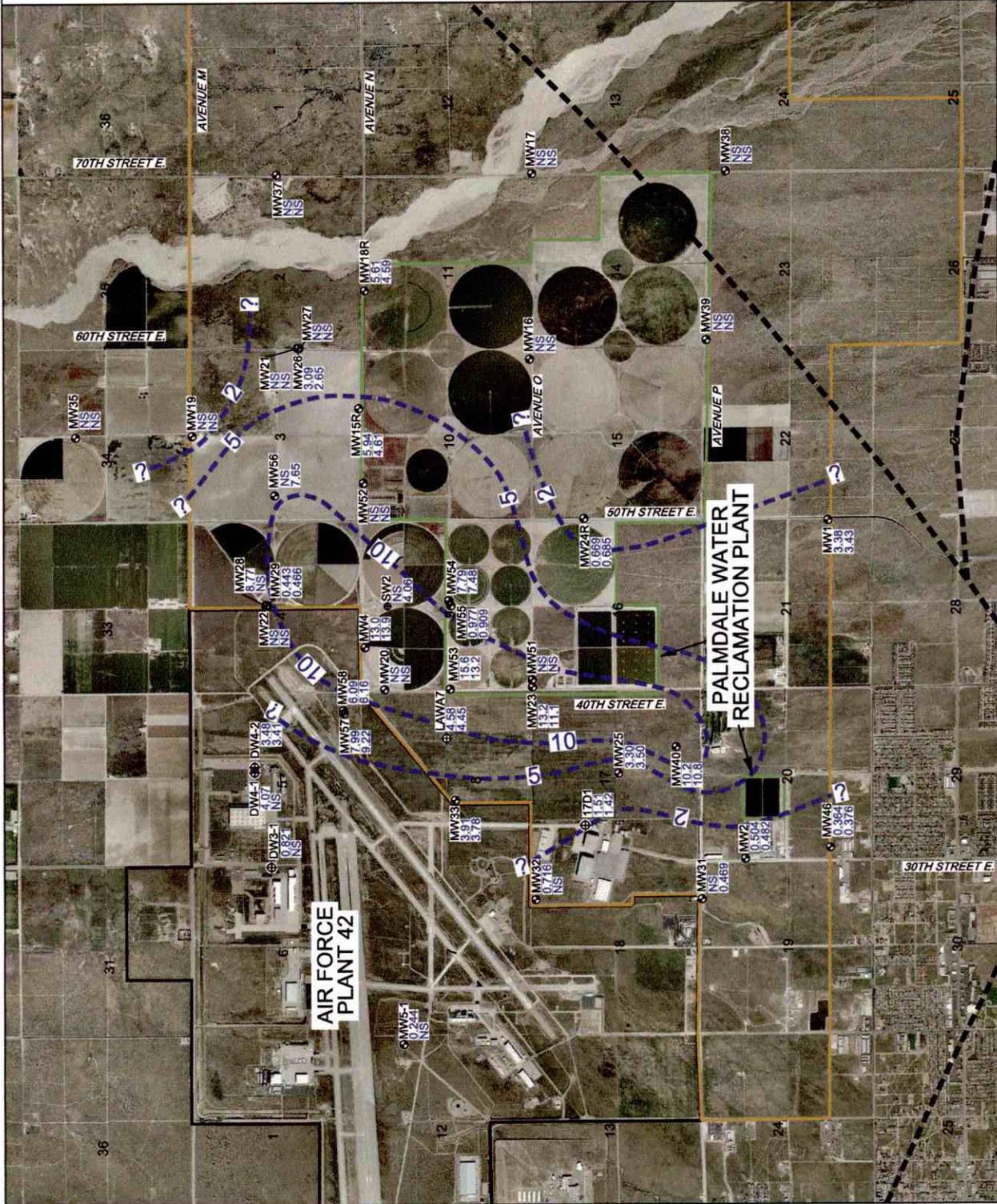
Base map modified from aerial photograph provided by AirPhoto USA (March 2004)

INTERPRETED DISTRIBUTION OF NITRATE (AS N) IN GROUNDWATER
JULY TO DECEMBER 2011
 Palmdale WRP
 Palmdale, California

By: path | Date: 01/27/12 | Project No. 9520



Attachment B



**Fact Sheet – Requirements for Submitting Technical Reports
Under Section 13267 of the California Water Code**

October 8, 2008

What does it mean when the regional water board requires a technical report?

Section 13267¹ of the California Water Code provides that "...the regional board may require that any person who has discharged, discharges, or who is suspected of having discharged...waste that could affect the quality of waters...shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires".

This requirement for a technical report seems to mean that I am guilty of something, or at least responsible for cleaning something up. What if that is not so?

Providing the required information in a technical report is not an admission of guilt or responsibility. However, the information provided can be used by the regional water board to clarify whether a given party has responsibility.

Are there limits to what the regional water board can ask for?

Yes. The information required must relate to an actual or suspected discharge of waste, and the burden of compliance must bear a reasonable relationship to the need for the report and the benefits obtained. The regional water board is required to explain the reasons for its request.

What if I can provide the information, but not by the date specified?

A time extension can be given for good cause. Your request should be submitted in writing, giving reasons. A request for a time extension should be made as soon as it is apparent that additional time will be needed and preferably before the due date for the information.

Are there penalties if I don't comply?

Depending on the situation, the regional water board can impose a fine of up to \$1,000 per day, and a court can impose fines of up to \$25,000 per day as well as criminal penalties. A person who submits false information is guilty of a misdemeanor and may be fined as well.

What if I disagree with the 13267 requirement and the regional water board staff will not change the requirement and/or date to comply?

Any person aggrieved by this action of the Regional Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must *receive* the petition by 5:00 p.m., 30 days after the date of the Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

Claim of Copyright or other Protection

Any and all reports and other documents submitted to the Regional Board pursuant to this request will need to be copied for some or all of the following reasons: 1) normal internal use of the document, including staff copies, record copies, copies for Board members and agenda packets, 2) any further proceedings of the Regional Board and the State Water Resources Control Board, 3) any court proceeding that may involve the document, and 4) any copies requested by members of the public pursuant to the Public Records Act or other legal proceeding.

If the discharger or its contractor claims any copyright or other protection, the submittal must include a notice, and the notice will accompany all documents copied for the reasons stated above. If copyright protection for a submitted document is claimed, failure to expressly grant permission for the copying stated above will render the document unusable for the Regional Board's purposes, and will result in the document being returned to the discharger as if the task had not been completed.

If I have more questions, who do I ask?

Requirements for technical reports normally indicate the name, telephone number, and email address of the regional water board staff person involved at the end of the letter.

¹ All code sections referenced herein can be found by going to www.leginfo.ca.gov. Copies of the regulations cited are available from the Regional Board upon request.