



Linda S. Adams
Secretary for
Environmental Protection

California Regional Water Quality Control Board Lahontan Region

Victorville Office
14440 Civic Drive, Suite 200, Victorville, California 92392
(760) 241-6583 • Fax (760) 241-7308
<http://www.waterboards.ca.gov/lahontan>



Arnold Schwarzenegger
Governor

February 9, 2007

WDID NO. 6B190107017

To Interested Parties:

TENTATIVE AMENDED WASTE DISCHARGE REQUIREMENTS FOR LOS ANGELES COUNTY SANITATION DISTRICT NO. 14; LANCASTER WATER RECLAMATION PLANT, LOS ANGELES COUNTY

Enclosed are tentative Amended Waste Discharge Requirements and Revised Monitoring and Reporting Program for Los Angeles County Sanitation District No. 14, Lancaster Water Reclamation Plant, Los Angeles County.

The California Regional Water Quality Control Board requests that you review the enclosed documents and provide us with your written comments no later than **March 2, 2007**. Comments received after that date cannot be given full consideration in preparation of the recommended Board Order to be presented to the Regional Board for adoption at the meeting scheduled for March 14 and 15, 2007, in either the Victor Valley or Antelope Valley Area.

If you need further information regarding the Waste Discharge Requirements, please contact our office.

Sincerely,

Rebecca Phillips
Office Technician

Enclosures: Tentative Permit
Comment form

cc: Attached Mailing List

Notice

Submittal of Written Material for Regional Board Consideration

In order to ensure that the State of California Lahontan Regional Water Quality Control Board has the opportunity to fully study and consider written material, it is necessary to submit it at least ten (10) days before the Regional Board Meeting. Pursuant to Title 23 of the California Code of Regulations, Section 648.2, the Regional Board may refuse to admit written testimony into evidence unless the proponent can demonstrate why he or she was unable to submit the material on time or that compliance with the deadline would otherwise create a hardship. If any other party demonstrates prejudice resulting from admission of the written testimony, the Regional Board may refuse to admit it.

COMPLETE FORM AND RETURN

To: CA Regional Water Quality Control Board, Lahontan Region (Curt Shifrer)
14440 Civic Drive, Suite 200
Victorville, CA 92392

**Comments on WDRs for LOS ANGELES COUNTY SANITATION DISTRICT NO. 14;
LANCASTER WATER RECLAMATION PLANT**

_____ We concur with proposed requirements

_____ We concur; comments attached

_____ We do not concur; comments attached

_____ (Sign)

_____ (Type or print name)

_____ (Organization)

_____ (Address)

_____ (City and State)

_____ (Telephone)

LOS ANGELES COUNTY SANITATION DISTRICT NO. 14
LANCASTER - MAILING LIST

Regional Board Members

Dave Snyder, County Sanitation District of Los Angeles County
Raymond Tremblay/County Sanitation Districts of Los Angeles County
Robert W. Wood, Edwards AFB
George Warner, Wright Patterson AFB
Eugene Nebeker
County Of Los Angeles Department Of Parks And Recreation
Frank Roberts, Mayor/City of Lancaster
Bob La Sala, City Manager/City of Lancaster
James Williams, Public Works Director, City of Lancaster
Steven Dassler, City Engineer, City Of Lancaster
Carlos Borjas, LA County Dept. of Health Services
Kurt Souza, CA Dept. of Health Services
Stefan Cajina, DHS Office of Drinking Water
Jeff Stone, DHS Office of Drinking Water
Bob Pierotti, CA State Department of Water Resources
Sandy Houck, CA State Department of Water Resources
Judy Hohman, US Fish and Wildlife
Scott Harris, CA Dept. of Fish and Game
Gordon Innes, SWRCB
George Runner, Senator, 17th District
Sharon Runner, Assemblywoman/36th Assembly District
Michael D. Antonovich, Los Angeles County Supervisor 5th District
Norm Hickling, Deputy/Office of Supervisor Michael D. Antonovich
Don Knabe/Los Angeles Co. Supervisor 4th District
James C. Ledford, Jr, Mayor – City of Palmdale
James Root, Mayor Pro Tem, City of Palmdale
Bob Tune, City Manager, City of Palmdale
Steve Malcott, Antelope Valley Chamber of Commerce
Barbara Firsick, East Lancaster Property & Homeowners Assoc.
Ron Ferrell, Roosevelt Rural Town Council
Laura E. Blank, LA County Farm Bureau
Gretchen Gutierrez, Building Industry Assoc., Antelope Valley Chapter
Diane Carlton, Greater Antelope Valley Assoc. of Realtors
Mel Layne, Greater Antelope Valley Economic Alliance
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Helene Kubler, RMC Water and Environment
David Pederson, Los Angeles County Dept of Public Works
Grant Poole, Farm Advisor, Los Angeles and San Bernardino Counties
Peter Zorba, City of Lancaster

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

**BOARD ORDER NO. R6V-2002-053A2 (TENTATIVE)
WDID NO. 6B190107017**

AMENDED WASTE DISCHARGE REQUIREMENTS

**FOR
LOS ANGELES COUNTY SANITATION DISTRICT NO. 14
LANCASTER WATER RECLAMATION PLANT**

Los Angeles County

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

1. Discharger

The Los Angeles County Sanitation District No. 14 (Discharger) submitted information to the Lahontan Water Board as part of an application for a permit under Water Code section 13522.5 (for recycling of treated wastewater) and under Water Code section 13260 (for discharge of treated wastewater). The information submitted under Water Code section 13260 is also a Report of Waste Discharge. The application is for expansion and/or upgrading of the Discharger's facilities. On December 28, 2006, the Discharger completed its application. The documents that constitute the complete application are listed in Attachment D. (References).

2. Order History

a. Board Order No. R6V-2002-053

On September 11, 2002, the Lahontan Water Board adopted Board Order No. R6V-2002-053 revising requirements for the Discharger's wastewater collection system, facilities located at the Lancaster Water Reclamation Plant (LWRP) site, and Piute Ponds. Facilities located at the LWRP site and regulated by Board Order No. R6V-2002-053 consist of a secondary treatment plant, the Antelope Valley tertiary treatment plant (AVTTP), and existing storage reservoirs (unlined). For the purposes of this Order, the LWRP site includes the Discharger's existing and proposed treatment and storage facilities described in this finding and Finding No. 3. Requirements regulating discharges of effluent to Piute Ponds are contained in Board Order No. R6V-2002-053. Requirements for disposal/recycling of the Discharger's treated wastewater at other authorized sites are contained in orders described below in this finding and in Finding No. 4.

b. Board Order No. R6V-2006-035

On September 14, 2006, the Lahontan Water Board adopted Board Order No. R6V-2006-035 establishing requirements for the pilot membrane bioreactor tertiary treatment plant (MBR treatment plant) located at the LWRP site and the Eastern Agricultural Site.

c. Other Orders

The "Order history" for other Orders is provided in Finding No. 4.

3. Reason for Action

The Lahontan Water Board is amending Board Order No. R6V-2002-053 to establish requirements for the discharge from (or to) the following facilities described in the Discharger's application:

- a. A new activated-sludge with nitrification/denitrification tertiary treatment plant that will expand the treatment capacity and upgrade the level of treatment so that the quality of effluent generated at the Lancaster Water Reclamation Plant site will be disinfected tertiary treated wastewater,¹ and
- b. An expansion of the Eastern Agricultural Site that will include additional areas to grow crops using treated wastewater as the irrigation water.

This Order does not regulate the ongoing discharge of secondary-treated wastewater from the existing oxidation ponds to Piute Ponds or Nebeker Ranch.

Board Order No. R6V-2002-053 is also being amended to incorporate requirements from Board Order No. R6V-2006-0035, which regulated the MBR treatment plant and Eastern Agricultural Site. Since this amendment incorporates those requirements from Board Order No. R6V-2006-0035, a provision is included herein rescinding that Order.

Modeling predictions in the Discharger's application show the treated wastewater applied at the Eastern Agricultural site through 2020 will remain in the vadose zone and therefore will not affect quality of the underlying groundwater. This amendment requires that the Discharger analyze the environmental conditions at the site annually to determine if application of treated wastewater at the site is behaving hydraulically in the vadose zone as predicted. If the evaluation indicates a discharge to groundwater is likely due to the application of treated wastewater, this

¹ For the purposes of this Order, disinfected tertiary treated wastewater is an oxidized, filtered and disinfected wastewater as defined in California Code of Regulations, title 22, sections 60301.230, 60301.320 and 60301.650.

Order requires the Discharger to evaluate its wastewater treatment and disposal operations and implement corrective action in sufficient time to prevent the discharge to groundwater.

If the Discharger can demonstrate there is potential for continued use of the East Agricultural Site beyond 2020, without causing a discharge to groundwater and the Discharger desires to extend the life of the site; this Order requires the discharger to submit to the Board by 2015 a proposal for a project.

Under this Order, the Discharger is authorized to recycle disinfected tertiary-treated wastewater at the Eastern Agricultural Site through 2020. If the Discharger intends to use the site after 2020, the Discharger must file a complete Report of Waste Discharge with the Lahontan Water Board; and obtain new or amended waste discharge requirements from the Lahontan Water Board for further use of the site.

4. History of Other Related Orders

a. Waste Discharge/Recycling Requirements

The Water Board adopted the following additional Orders (listed chronologically by date adopted):

- i. Board Order No. 6-85-35, adopted April 11, 1985, issuing revised requirements to the County of Los Angeles for use of AVTTP treatment plant effluent at Apollo Park, General William J. Fox Airfield and road sites owned by the County.
- ii. Board Order No. 6-86-58, adopted May 15, 1986, establishing requirements for use of un-disinfected secondary treated wastewater produced at the LWRP site to irrigate fodder crops at the Nebeker Ranch.
- iii. Board Order No. R6V-2002-053A1, which was adopted on July 13, 2005, amending Board Order No. R6V-2002-053 to include ammonia effluent limits for disinfected secondary-treated wastewater produced at the LWRP site and discharged to Piute Ponds.
- iv. Board Order No. R6V-2006-0009, adopted March 8, 2006, issuing Master Water Recycling Requirements for regulating use of the Discharger's disinfected tertiary-treated wastewater in the City of Lancaster, Division-Street Corridor Recycled Water project.
- v. Board No. R6V-2006-0051, adopted on November 8, 2006, establishing requirements for four proposed reservoirs located at the LWRP site. The reservoirs are for storage of disinfected tertiary-treated wastewater generated at the LWRP site.

b. Enforcement

On October 13, 2004, the Lahontan Water Board issued Cease and Desist Order No. R6V-2004-0038 to the Discharger for threatening to violate Waste Discharge Requirements prescribed in Board Order No. R6V-2002-053. The Cease and Desist Order includes a schedule for achieving compliance with waste discharge requirements.

5. Description of Conveyance and Treatment Facilities

a. General

This amendment regulates the:

- i. Discharge of disinfected tertiary-treated wastewater from the MBR treatment plant and proposed new activated sludge tertiary treatment plant to Piute Ponds, the Eastern Agricultural Site, and other permitted locations,
- ii. Treated wastewater conveyance system to the Eastern Agricultural Site, and
- iii. Use of treated wastewater at the Eastern Agricultural Site through December 31, 2020.

b. Conveyance System

Existing pump station facilities (which are located at the Lancaster Water Reclamation Plant (LWRP) site) and a pressurized pipeline convey treated wastewater a distance of seven miles to the Eastern Agricultural Site. The Discharger proposes to construct a permanent pump station and a steel storage tank that will also become part of the conveyance system. The permanent pump station will be located at the LWRP site, and the storage tank will be located near the Eastern Agricultural Site and have a storage capacity of two million gallons.

c. AS/NDN Treatment Plant

The Discharger proposes to construct a new activated sludge (AS) tertiary treatment plant. The proposed new treatment plant will include nitrogen removal using nitrification and denitrification (NDN) processes. For the purposes of this Order, the new treatment plant is referred to as the AS/NDN treatment plant. Treated wastewater produced by the AS/NDN treatment plant will have total annual average nitrogen concentrations less than 10 mg/L as nitrogen. The AS/NDN treatment plant will initially have a treatment capacity of 18 mgd. The plant will be expanded later to a treatment capacity of 21 million gallons per day. The AS/NDN treatment plant (when completed) will replace the existing secondary treatment facilities (oxidation ponds).

d. MBR Treatment Plant

The source of influent wastewater flow for the MBR treatment plant is effluent from the Discharger's primary treatment facility. The plant includes the following components and capacities:

MBR Plant Components and Capacities

Plant Components
Suspended-growth biological process
Membrane tanks
Ultraviolet disinfection systems (2)

Plant Capacities (MGD)	
Annual Average Flow	1.0
Maximum Daily Flow	1.75

The MBR treatment plant removes biochemical oxygen demand (BOD) and nitrogen using a single-sludge, suspended-growth biological treatment process with membrane tanks instead of conventional clarifiers. Activated sludge tanks provide suspended-growth biological treatment, with initial treatment in an anoxic zone followed by further treatment in an aerobic zone. Flow from the activated sludge tanks goes to the membrane tanks for further treatment, including filtration by membranes and removal of sludge. Removed sludge is either returned to the activated sludge tanks or conveyed to Oxidation Pond No. 1. Solids generated from oxidation pond cleaning will be hauled offsite for disposal/reuse at an authorized reuse or disposal site. Citric acid and sodium hypochlorite solutions are used for required periodic cleaning of the surfaces of membranes in the membrane tanks. Results of Discharger evaluation shows that the amount of solution used is minimal and will not adversely affect the plant effluent.

6. Description of Eastern Agricultural Site

a. General

The time frame for development of the Eastern Agricultural Site is based on the Discharger's needs for recycling of treated wastewater. For the purposes of planning, the Discharger has divided its current facilities planning period² into two phases, Phase I and II as shown in Table No. 1. Phase I is the period of time before the Discharger begins operation of the AS/NDN treatment plant and Phase II is the period after the plant begins operation.

The Eastern Agricultural Site consists of land identified by the Discharger in its 2020 Facilities Plan for the agricultural reuse of recycled water. The discharger

²Lancaster Water Reclamation Plant 2020 Facilities Plan (Final), Los Angeles County Sanitation District No. 14, May 2004.

plans to own up to approximately 4,600 acres within nine sections (1.0-square-mile per section). For the purposes of planning and site development, the Discharger has divided the site into three, 3.0-square-mile (1,920-acre) areas referred to as Eastern Agricultural Sites 1, 2, and 3. The portions of the Eastern Agricultural Site that will be used under Phase I and II are shown in Attachment C and located in Eastern Agricultural Sites No. 1 and 2. The District owns the majority of the land within Eastern Agricultural site No. 1 and portions of the land within Eastern Agricultural site Nos. 2 and 3. Eastern Agricultural Site No. 1 includes land within Sections 23 and 24, Township No. 8 North, Range No.11 West (Sections 23 and 24, T8N, R11W) and Section 19, T8N, R10W, San Bernardino Base and Meridian (SBB&M). Eastern Agricultural Site No. 2 includes land within Sections 25 and 26, T8N, R11W and Section 30, T8N, R10W, SBB&M.

**Table No. 1
 Eastern Agricultural Site
 Planning Period (2020 Facilities Plan)³**

	Phase I of Planning Period	Phase II of Planning Period
Time Period	Portion of planning period <u>before</u> startup of the AS/NDN treatment plant	Portion of planning period <u>after</u> startup of the AS/NDN treatment plant
Source of Treated Wastewater	MBR and AVTTP treatment plants	MBR, AVTTP and AS/NDN treatment plants
Expected Flow of Treated Wastewater (Annual-Average) needing disposal/ recycling in million gallons per day	1.3 (Maximum)	6.0 to 21.0
Estimated Area within Agricultural Site No. 1 (acres)	1,280	1,920
Estimated Area within Agricultural Site No. 2 (acres)	0	0 to 1,280
Estimated Total Area (acres)	1,280	1,920 to 3,200
Estimated No. of Pivots	8	12 to 20
Estimated Area Covered by Pivots (acres)	928	1,392 to 2,320
<i>Note- Each pivot covers an area of approximately 116 acres.</i>		

³Lancaster Water Reclamation Plant 2020 Facilities Plan (Final), Los Angeles County Sanitation District No. 14, May 2004.

b. Treated Wastewater Uses

Treated wastewater is used at the Eastern Agricultural Site for construction-related purposes, site development and maintenance and for growing fodder crops (winter grains, Sudan grass and alfalfa). Use of the treated wastewater for construction-related purposes and site development includes use for soil compaction, backfilling, dust control, concrete mixing, and hydraulic testing of pipelines and irrigation systems.

c. Farm Management Plan

The Discharger has prepared a Farm Management Plan for operation of Phase I of its current facilities planning period (*LACSD14, 2005, Oct. 24*). A provision in this Order requires that the Discharger prepare a revised Farm Management Plan before implementation of Phase II of its current facilities planning period.

d. Groundwater and Vadose Zone Monitoring

The Discharger has completed installation and sampling of groundwater monitoring wells located adjacent to center pivot fields No. 1 through 8 (See Attachment C of this Order). Before beginning application of treated wastewater to grow crops in the remaining fields (fields No. 9 through 20), provisions of this Order require the Discharger to install additional groundwater monitoring wells in accordance with an acceptable workplan and complete a minimum number of sampling rounds at each well. The attached Monitoring and Reporting Program requires the Discharger to complete background soil sampling before beginning application of recycled water. Ongoing routine monitoring of all groundwater and vadose zone monitoring facilities is also required.

e. Abandoned Water Wells

The Discharger has: (1) completed an investigation to determine the locations of all abandoned wells within Agricultural Site No. 1; (2) destroyed abandoned wells in accordance with State and local regulations; and (3) submitted a report (*LACSD14, 2006, Nov 17*) to the Lahontan Water Board on the investigation and destruction of abandoned wells. Wells remaining within Agricultural Site No. 1 consist of 14 wells, 12 wells located on land owned by the Discharger and two active water supply wells located on privately owned residential land located within the site. Five of the Discharger's wells are used for monitoring of groundwater. The seven remaining wells owned by the Discharger are currently inactive. Areas proposed for irrigation with treated wastewater are located more than 50 feet from each of the Discharger's wells and more than 500 feet from the privately owned wells. (*LACSD14, 2006, Nov 17*)

Before using treated wastewater in other portions of the Eastern Agricultural Site, a provision of this Order requires the Discharger to complete an investigation to determine the locations of all abandoned wells, properly destroy the abandoned wells in accordance with State and local regulations and submit a report to the Lahontan Water Board on the investigation and destruction of abandoned wells.

7. Facilities Locations

The LWRP site is located approximately five miles north of central Lancaster, in the Lancaster Hydrologic Area of the Antelope Hydrologic Unit as shown in Attachment A, which is made a part of this Order. The address for the office at the LWRP site is 1865 W. Avenue D, Lancaster, California 93534. The Eastern Agricultural Site is located approximately seven miles east of the LWRP site as shown in Attachment B, which is made a part of this Order.

8. Recycling of Treated Wastewater

This Order includes water-recycling requirements and requires the Discharger to comply with Uniform Statewide Reclamation Criteria (California Code of Regulations (CCR), title 22, sections 60301 through 60355) established pursuant to Water Code section 13521. As required under CCR, title 22, section 60323, the Discharger has completed engineering reports that address the following facilities:

- a. AVTTP treatment plant;
- b. Eastern Agricultural Site; and
- c. MBR treatment plant with an auxiliary hypochlorite disinfection system.

The Discharger has submitted an engineering report for the MBR treatment plant (with ultraviolet disinfection) which has not yet been accepted by the California Department of Health Services, pending results of ultraviolet disinfection facilities commissioning tests which are ongoing. The Discharger has not completed an engineering report for the proposed new AS/NDN treatment plant. Provisions of this Order require that the Discharger not supply recycled water generated by these treatment plants to water recycling areas until approval of engineering reports by the Department of Health Services.

9. Land Ownership

The LWRP site and the portions of the Eastern Agricultural Site where recycling will take place are located on land owned by the Discharger.

10. Authorized Disposal/Recycling Site

The Authorized Disposal/Recycling Site under this Order consists of land which is owned by the Discharger and located within the Eastern Agricultural Site No. 1 and Section 25 and 30 of Eastern Agricultural Site No. 2. This Order authorizes use of disinfected tertiary treated wastewater at these sites through December 31, 2020. Under this Order, the sites are not permitted to receive treated wastewater after December 31, 2020.

The Discharger is authorized to use disinfected tertiary treated wastewater for non-potable uses within the Lancaster Water Reclamation Plant (LWRP) site defined in Finding No. 2.a. The non-potable uses include use for landscape irrigation, facility washdown, and soil compaction and dust control during construction of new facilities. The Discharger is also authorized to use disinfected secondary recycled water for soil compaction and dust control during construction of new facilities. The Discharger is authorized to supply disinfected tertiary treated wastewater for non-potable uses in the City of Lancaster Division-Street Corridor Recycled Water Project. Those uses are regulated under Board Order No. R6V-2006-0009.

11. Topography (Eastern Agricultural Site)

The direction of the ground-surface gradient at the Eastern Agricultural Site is toward Rosamond Dry Lakebed in a northwesterly direction. At the Eastern Agricultural Site, the slope of the gradient is 0.003 feet/foot.

12. Geology and Hydrogeology (Eastern Agricultural Site)

a. Geology

Between 1960 and 1967, the U.S. Department of Agriculture (Soil Conservation Service) investigated shallow soils (located between the ground surface and a depth of five feet) in the Antelope Valley. The investigation indicates that shallow soils at the Eastern Agricultural Site contain some soluble salts (*USDA, 1970, Jan*). In geologic terms, the shallow soils located at Agricultural Site No. 1 and 2 are Quaternary alluvium. The Quaternary alluvium extends down to a lacustrine layer (blue-clay layer). The lateral extent of the Quaternary alluvium and blue-clay layer are significant. They extend throughout a large portion of Antelope Valley. The blue-clay layer was formed by the accumulation of fine-grained sediments in a large ancestral lake. Remnants of the lake are shown as Rosamond Dry Lake and Rogers Dry Lake (*USGS, 2003*).

b. Hydrogeology (General)

Using information from historic site investigation reports, the US Geologic Survey prepared a 2003 report that includes maps (plan view and cross-sectional) showing the general locations of the following hydrogeologic features in the Antelope Valley: alluvium, blue-clay layer, bedrock and the Upper and Lower Aquifers (USGS, 2003). The Upper Aquifer is located above the blue-clay layer and the Lower Aquifer is located below the blue-clay layer. The blue-clay layer is considered to be an effective aquitard and the Lower Aquifer is considered to be a confined aquifer (USGS, 2003), (LACSD14, 2005, Jan. 28).

c. Hydrogeology (Eastern Agricultural Site No. 1 and 2)

In 2004 and 2005, the Discharger conducted hydrogeologic investigations at Eastern Agricultural Site No. 1 and the northern edge of Eastern Agricultural Site No. 2. The investigation included: (i) evaluation of well records for 155 wells (including wells extending into the Lower Aquifer, (ii) completion of down-hole geophysical and photographic logs for selected existing wells, and (iii) logging of 6 boreholes consisting of 4 exploratory borings and 2 boreholes for monitoring wells. The four exploratory boreholes extended into the blue-clay layer by depths ranging from 35 to 80 feet.

Based on the results of investigations generated by the Discharger and US Geologic Survey, the following is a summary describing the geology and groundwater underlying the Eastern Agricultural Sites No. 1 and 2. Quaternary alluvium underlies the sites and extends from the ground surface to approximately 200 to 250 feet below the ground surface (bgs). The Quaternary alluvium is followed by the blue-clay layer that is approximately 350 feet thick (i.e., extends from the bottom of the Quaternary alluvium to depths ranging from approximately 550 to 600 feet bgs). Older alluvium extends from the bottom of the blue-clay layer to an unknown depth.

The Upper Aquifer is located above the blue-clay layer in the Quaternary alluvium. The depth to groundwater underlying the Eastern Agricultural Site is approximately 100 feet bgs. The Quaternary alluvium consists of inter-bedded, discontinuous layers of geologic material. Classifications for individual layers vary in a random fashion. The classifications consist of sands, silts or clays. Groundwater flow in the Upper Aquifer is toward the south and southeast.

13. Groundwater (Existing Quality, Eastern Agricultural Site)

Table No. 2 provides a summary of Total Dissolved Solids (TDS) levels in five monitoring wells recently established at Eastern Agricultural Site No. 1 and the northern edge of Eastern Agricultural Site No. 2. The locations of the wells in Table No. 2 are shown in Attachment C. Results of the Discharger's site investigation indicates spatial variation in TDS concentrations in groundwater. The results also indicate the concentrations of TDS in wells sampled were higher in wells located in the western portion of the site (e.g., TDS of 1600 mg/L) as compared to those located in the eastern portion (e.g., TDS of 440 mg/L) (LACSD14, 2005, Jun 21) (LACSD14, 2005, Nov 21) (LACSD14, 2006, Aug 15).

**Table No. 2
 Existing Concentrations in Groundwater**

Monitoring Well No.	Date monitoring well was established	TDS Range (mg/L)	Nitrate Concentration Range (mg/L)	No of Samples
MW-30	09/05	440 to 630	1.53 to 2.3	4
MW-31	09/05	110 to 440	<0.1 to 1.05	4
SW-30	03/05	350 to 370	0.37 to 0.43	6
SW-31	03/05	850 to 990	0.84 to 1.5	6
SW-32	09/05	1500 to 1858	2.8 to 3.3	4

14. Effluent Quality

Table No. 3 summarizes effluent quality data for the existing AVTTP and expected quality for the MBR the proposed AS/NDN treatment plant. The data for the MBR and AS/NDN treatment plants are based on design data for the plants.

The Discharger has implemented operations for starting the recycling of treatment plant effluents at the Eastern Agricultural Site. In December 2006, the Discharger began conveying the AVTTP treatment plant effluent to the site and recycling the effluent at the site (see Column 1 of Table No. 3 for the quality of the AVTTP treatment plant effluent). In February 2007, the Discharger began: operation of the auxiliary sodium hypochlorite system to disinfect the MBR treatment plant effluent; combining effluent from both the AVTTP and MBR treatment plants; conveying the combined effluents from both plants to the site; and recycling the combined effluents at the site. See Column 2 of Table No. 3 for the quality of the AVTTP/ MBR treatment plant effluent blend. Requirements regulating the above-described production and recycling of treated wastewaters are contained in Board Order No. R6V-2002-053 adopted on September 11, 2002 and Board Order No. R6V-2006-035 adopted on September 14, 2006. Once ultraviolet disinfection is started at the MBR treatment plant, concentrations of disinfection by-products in the AVTTP/MBR effluent blend are expected to be as shown in Column 3 of Table No. 3.

Concentrations of disinfection by-products in the AS/NDN effluent, once that plant is placed into operation, are expected to be as shown in Column 4 of Table No. 3 (LACSD14, 2006, Apr 6), (LACSD14, 2006, Mar 24), (LACSD14, 2005, July 22).

The disinfection by-products bromate and chlorite are not expected to be present in the effluents of the AVTTP, MBR and AS/NDN treatment plants. Bromate is a byproduct of ozonation and chlorite is a by-product of chlorine dioxide (Metcalf and Eddy, 2003). Neither ozonation nor chlorine dioxide will be used at the treatment plants.

Table No. 3
Concentrations¹ in Disinfected Tertiary Treated Wastewater

Constituents	Column 1: AVTTP treatment plant effluent with hypochlorite disinfection	Column 2: AVTTP/MBR blend ² with disinfection by auxiliary hypochlorite system	Column 3: MBR treatment plant effluent with ultraviolet disinfection	Column 4: AS/NDN treatment plant effluent with hypochlorite & ammonia disinfection
Turbidity (NTUs)	5	---	0.2	5
Biochemical Oxygen Demand (mg/L)	6	---	5	6
Total Dissolved Solids (mg/L)	703	585	550	550
Total Nitrogen (mg/L as N)	3.7	6	7	10
Arsenic (µg/L)	4	4	4	4
Total Chromium (µg/L)	2	2	2	2
Hexavalent Chromium (µg/L)	0.1	0.1	0.1	0.1
Disinfection By-Products:				
Trihalomethanes (µg/L)	100	40	20	30
Total haloacetic acids (µg/L)	80	34	20	30
Footnote:				
1. All concentrations in this table are predicted values, with exception of the TDS values, which are averages. Data is from the amended report of waste discharge (LACSD14, 2006, Apr 10) and the Discharger's annual report (LACSD14, 2006, Mar 29).				
2. The values are based on a combination of 1.0 mgd of MBR treatment plant effluent and 0.3 mgd of AVTTP treatment plant effluent.				

15. Receiving Waters (Eastern Agricultural Site)

The receiving waters at the Eastern Agricultural Site are the groundwaters of the Antelope Valley Groundwater Basin (DWR Unit No. 6-44).

16. Lahontan Basin Plan

The Lahontan Water Board adopted a Water Quality Control Plan for the Lahontan Region (Basin Plan), which became effective on March 31, 1995, and this Order implements the Basin Plan as amended.

17. Beneficial Uses

The beneficial uses of the groundwaters of the Antelope Valley groundwater basin (DWR No. 6-44) as set forth and defined in the Basin Plan are:

- a. Municipal and Domestic Supply (MUN);
- b. Agricultural Supply (AGR);
- c. Industrial Service Supply (IND); and
- d. Freshwater Replenishment (FRSH).

18. Degradation Analysis (Eastern Agricultural Site)

a. Phase I

Under Phase I, the Discharger is applying treated wastewater to grow crops using an irrigation method that does not involve significant quantities of deep percolation.

b. Deep Percolation and Leaching

Deep percolation refers to the movement of applied irrigation water past the root zone of the crop where it is no longer available for plant needs. Deep percolation can occur as a result of expected irrigation inefficiencies (i.e., irrigation systems are usually unable to apply the exact amount of water to a crop exactly when it needs it) and from intentional effort to leach salts for the crop root zone. Leaching is the removal of materials (salts) in solution by the passage of water through soil. Intentional leaching is practiced to achieve a specific soil salinity level and crop yield. It is accomplished by application of irrigation water in a manner that allows a fraction of the water entering the soil to pass through the root zone (leaching fraction). Crops have varying sensitivity to soil salinity. When a crop's level of tolerance to salinity is exceeded there will be a reduction in the crop yield. The reduction in yield will range up to 100 percent depending on the salinity level. Leaching is typically completed at least once per year, but may be performed less frequently.

c. Phase II

During Phase II, the Discharger will use best management irrigation practices to minimize deep percolation of treated wastewater while maintaining a viable crop. The Discharger proposes to use an irrigation method that includes leaching. In the RWD, the Discharger modeled two irrigation rate alternatives to evaluate the potential to affect underlying groundwater quality. The alternatives included irrigation rates of 10% and 20% below standard agronomic rates.

The evaluation indicates the project has the potential to degrade the underlying groundwater if percolate generated by the project were to reach groundwater. The Discharger predicts TDS concentrations in the project percolate located in the vadose zone below the crop root zone will range from 4,000 mg/L to approximately 12,000 mg/L. These concentrations are higher than existing TDS concentrations in underlying groundwater, which range from 110 to 1,858 mg/L.

Under both of the above described alternatives, results of modeling show that over a 50 year period the treated wastewater applied at the site from the project would be retained in the vadose zone and would not affect the quality of underlying groundwater.

19. Receiving Water Limits

Discharge Specification No. I.B.5 of this Order specifies numerical receiving water limits for nitrate and TDS in groundwater underlying Eastern Agricultural Sites No. 1 and 2. The receiving water limits are based on preserving the existing quality of groundwater. There is significant spatial variation in TDS concentrations in groundwater, and there is potential for some variation in nitrate concentrations due to among other things, regional groundwater flow, adjacent land use, and groundwater pumping. Because of the spatial variation, Discharge Specification No. I.B.5 requires: (a) determination of a separate numeric TDS receiving water limit for each compliance-monitoring well and (b) specifies the method the Discharger must use to calculate the numerical TDS limit. Due to the above factors that affect nitrate concentrations in groundwater and limited data for nitrate, Discharge Specification No. I.B.5 specifies the same procedure for calculating a numeric receiving water limit for nitrate in each compliance-monitoring well at Fields No. 9 through 20. Because there are currently insufficient data points per monitoring well to determine a numerical limit at each well, the attached Monitoring and Reporting Program includes a schedule for conducting additional sampling. There is sufficient nitrate data for Fields No. 1 through 8 and therefore a single numeric receiving water limit for nitrate (3.4 mg/L as N) is specified in Discharge Specification No. I.B.5.

The attached Monitoring and Reporting Program requires routine monitoring of groundwater underlying the Eastern Agricultural Site to provide data for determining compliance with receiving water limits. It also requires monitoring of the vadose zone, which will provide an early warning of any deeper percolation of applied wastewater than was predicted by the modeling and allowing the opportunity to implement corrective action before groundwater is affected.

20. California Environmental Quality Act (CEQA)

In accordance with the CEQA, the Discharger, acting as the lead agency, certified an Environmental Impact Report (EIR) on June 16, 2004 for the 2020 Plan project. The project will not pose a significant impact to water quality provided that the mitigation measures summarized in Table No. 4, below, are implemented. This Order requires implementation of these mitigation measures. Monitoring and reporting requirements are included in the attached Monitoring and Reporting Program to ensure the mitigation measures are properly implemented and the measures are effective, The monitoring and reporting requirements are summarized in Monitoring Sections No. W.1 through W.3 of the attached Monitoring and Reporting Program.

Table No. 4

<u>Impact</u>	<u>Mitigation Measure</u>
a. Downward migration of treated wastewater applied at the Eastern Agricultural Site would degrade the quality of groundwater.	Degradation of underlying groundwater is not expected, because of hydrogeologic conditions and the methods used for crop irrigation
b. Eastern Agricultural Site run on and/or runoff would degrade the quality of surface water.	Construct drainage controls to prevent run on and runoff
c. Flow of treated wastewater down abandoned wells would degrade the quality of groundwater.	Identify and properly destroy abandoned groundwater wells.
d. Loss of the 0.08-acre wetland, which will occur as result of fill and grading at Eastern Agricultural Site No. 1.	Create a wetland of equal or higher value at an area ratio for wetland loss to wetland created of 1:1.5.

21. Technical and Monitoring Reports

The fact that the Discharger is seeking coverage under waste discharge requirements issued by the Lahontan Water Board for one or more proposed discharges supports the requirement that the Discharger submit technical and monitoring reports in compliance with this Order and the attached Monitoring and Reporting Program so that the data may be collected to determine conditions in the vadose zone and the receiving water.

22. Notification of Interested Parties

The Lahontan Water Board has notified the Discharger and interested persons of its intent to establish Waste Discharge Requirements for the discharge/reuse.

23. Consideration of Public Comments

The Lahontan Water Board, in a public meeting, heard and considered all comments pertaining to the discharge/reuse.

IT IS HEREBY ORDERED that the Discharger must comply with the following:

I. DISCHARGE SPECIFICATIONS

A. Effluent Limitations (MBR and AS/NDN Treatment Plants)⁴

1. The effluent production at the MBR treatment plant must not exceed the following:
 - a. An average flow rate during any 12-month period of 1.0 million gallons per day.
 - b. A volume of 1.75 million gallons during any 24-hour period.

Flow in excess of these limitations shall not be considered a violation of this provision unless one or more of the following is also exceeded: an effluent limitation in Discharge Specifications No. I.A.4. through I.A.6., a receiving water limitation in Discharge Specifications No. I.B.1 through I.B.5. or a water recycling requirements in Discharge Specifications No. I.C.1 through I.C.4.

2. The effluent production at the initial AS/NDN treatment plant (Described in Finding No. 5) must not exceed a volume of 18 million gallons during any 24-hour period.

Flow in excess of this limitation shall not be considered a violation of this provision unless one or more of the following is exceeded: an effluent limitation in Discharge Specifications No. I.A.4. through I.A.6., a receiving water limitation in Discharge Specifications No. I.B.1 through I.B.5. or a water recycling requirements in Discharge Specifications No. I.C.1 through I.C.4.

⁴ Effluent limits for the AVTTP treatment plant are currently specified in Board Order No. R6V-2002-053.

3. The recycled water production at the subsequent expanded AS/NDN treatment plant (Described in Finding No. 5) must not exceed a volume of 21 million gallons during any 24-hour period.

Flow in excess of this limitation shall not be considered a violation of this provision unless one or more of the following is exceeded: an effluent limitation in Discharge Specifications No. I.A.4. through I.A.6., a receiving water limitation in Discharge Specifications No. I.B.1 through I.B.5. or a water recycling requirements in Discharge Specifications No. I.C.1 through I.C.4.

4. The effluents produced by the MBR and AS/NDN treatment plants must not exceed the following limits:

<u>Parameter</u>	<u>Units</u>	<u>30-Day Mean⁵</u>	<u>7-Day Mean</u>	<u>Daily Maximum⁶</u>
BOD ⁷	mg/L	10	15	30

5. The effluents produced by the MBR and AS/NDN treatment plants must have a pH of not less than 6.0 nor more than 9.0. A pH over 9.0 is allowed if the Discharger has demonstrated it results from biological processes within the treatment plant.
6. The effluents produced by the MBR and AS/NDN treatment plants must have a dissolved oxygen concentration of not less than 1.0 mg/L.

B. Receiving Water Limitations - Groundwater

The discharge must not cause a violation of the following water quality objectives for the groundwaters of the Lancaster Hydrologic Area underlying and located in the vicinity of Eastern Agricultural Sites No. 1 and 2.

1. Bacteria - Groundwaters must not contain concentrations of coliform organisms attributable to human wastes.
2. Chemical Constituents - Groundwaters must not contain concentrations of chemical constituents in excess of the maximum contaminant level (MCL).

⁵ The arithmetic mean of lab results for 24 hour composite samples collected during a period of 30 days, respectively.

⁶ Daily maximum limitations must be applied to the values of the measurements obtained for any single 24-hour composite sample (or daily discharge rate).

⁷ Biochemical Oxygen Demand (five day, 20°C) of an unfiltered sample.

or secondary maximum contaminant level (Secondary MCL) based upon drinking water standards specified in the following provisions of title 22 of the California Code of Regulations: Table 64431-A of section 64431 (Inorganic Chemicals), Table 6444-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.

3. Radioactivity - Radionuclides must not be present in concentrations that are deleterious to human, plant, animal, or aquatic life, or that result in the accumulation of radionuclides in the food chain to an extent that it presents a hazard to human, plant, animal, or aquatic life. Waters must not contain concentrations of radionuclides in excess of limits specified in the CCR, title 22, chapter 15, article 5, section 64443.
4. Taste and Odors - Groundwaters must not contain taste or odor-producing substances in concentrations that cause nuisance (CWC section 13050(m)) or that adversely affect waters for beneficial uses.
5. Nitrate and TDS (Eastern Agricultural Site) – Use of treated wastewater at the Eastern Agricultural Site must not cause:
 - (a) A nitrate concentration in excess of existing water quality (3.4 mg/L as N) in any groundwater compliance monitoring well for Fields No. 1 through 8;
 - (b) A nitrate concentration (12-month average concentration) in excess of existing water quality in any groundwater compliance monitoring well for Fields No. 9 through 20 (The existing quality must be equal to the upper 99% confidence interval for the first eight nitrate samples collected from the well.); or
 - (c) A TDS concentration (12-month average concentration) in groundwater at a given groundwater compliance monitoring well to exceed the existing water quality at that point. The existing quality must be equal to the upper 99% confidence interval for the first eight TDS samples collected from the well.

C. Water Recycling Requirements

1. The effluents produced by the MBR and AS/NDN treatment plants and the use of treated wastewater at the Authorized Disposal/Recycling Site (described in the Finding No. 10) must comply with the Uniform Statewide Reclamation Criteria, which are contained

in California Code of Regulations (CCR), title 22, sections 60301 through 60355.

2. The effluents produced by the MBR and AS/NDN treatment plants must be disinfected tertiary treated wastewater as defined in title 22, CCR.
3. The effluents produced by the MBR and AS/NDN treatment plants must be an oxidized wastewater and a wastewater that has been filtered by the method described in either a. or b., below.
 - a. The effluent has been coagulated and passed through natural undisturbed soils or the bed of a filter and the turbidity concentration of the effluent does not exceed any of the following:
 - (i) A 24-hour average value of two (2) nephelometric turbidity units (2 NTUs);
 - (ii) Five (5) NTUs more than 5% of the time during a 24-hour period; and
 - (iii) 10 NTUs at any time.
 - b. The effluent has been passed through a microfiltration, ultrafiltration, nanofiltration, or reverse osmosis membrane so that the turbidity of the filtered wastewater does not exceed any of the following:
 - (i) 0.2 NTU more than 5 percent of the time within a 24-hour period; and
 - (ii) 0.5 NTU at any time.
4. The effluents produced by the MBR and AS/NDN treatment plants must be a filtered and subsequently disinfected wastewater that meets the following:
 - a. Disinfected by either:
 - (i) A chlorine disinfection process following filtration that provides a CT (the product of total chlorine residual and modal contact time⁸ measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow; or
 - (ii) A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque forming

⁸ The "modal contact time" means the amount of time elapsed between the time that a tracer, such as salt or dye, is injected into the influent at the entrance to a chamber and the time that the highest concentration of the tracer is observed in the effluent from the chamber (title 22, CCR, section 60301.600).

units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as poliovirus may be used for purposes of the demonstration.

- b. The median concentration of total coliform bacteria measured in the filtered and disinfected effluents produced by the MBR and AS/NDN treatment plants must not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria must not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period. No sample must exceed an MPN of 240 total coliform bacteria per 100 milliliters.
5. Irrigation with disinfected tertiary treated wastewater must not take place within 50 feet of any domestic water supply well. (title 22, CCR, section 60310, subdivision (a))
6. Impoundment of disinfected tertiary treated wastewater must not occur within 100 feet of any domestic water supply well. (title 22, CCR, section 60310, subdivision (b))

D. General Requirements and Prohibitions

1. There must be no discharge, bypass, or diversion of untreated or treated wastewater, sludge, grease, or oils from the transport, treatment, or Authorized Disposal/Recycling Site (described in the Finding No. 10) to adjacent land areas or surface waters.
2. Surface flow, or visible discharge of untreated or treated wastewater, from the Authorized Disposal/Recycling Site (described in the Finding No. 10) to adjacent land areas or surface waters is prohibited.
3. All facilities used for collection, transport, treatment, or disposal of waste regulated by this Order must be adequately protected against overflow, washout, inundation, structural damage or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.
4. The discharge must not cause a pollution, as defined in California Water Code (CWC) section 13050, subdivision (I), or a threatened pollution.

5. Neither the treatment nor the discharge must cause a nuisance, as defined in CWC section 13050, subdivision (m).
6. The Discharger is authorized to recycle disinfected tertiary-treated wastewater on land areas it owns within Eastern Agricultural Site No. 1 and Section 25 and 30 of Eastern Agricultural Site No. 2 (as defined in Findings No. 6 and 10). After December 31, 2020, these areas are no longer authorized to receive treated wastewater under this Order.
7. The disposal of waste residue, including sludge, must be in a manner in compliance with all local, state, and federal requirements.
8. Treated wastewater used for dust control or soil compaction must be applied at a rate and amount that does not cause runoff or excessive ponding.
9. The treatment facility and Eastern Agricultural Site must be designed and operated as described in the findings of this Order and the Discharger's application referenced in Finding No. 1.
10. The MBR and AS/NDN treatment plants must be maintained at maximum operating efficiency in compliance with this Order.
11. The discharge of waste, as defined in the CWC, which causes violation of any narrative Water Quality Objective contained in the Basin Plan, including the Non-Degradation Objective, is prohibited.
12. The discharge of waste, which causes violation of any numeric WQO contained in the Basin Plan, is prohibited.
13. Before startup of the AS/NDN treatment plant, the amount of water applied to irrigate crops at the Eastern Agricultural Site must not exceed the amount that would result in percolation of treated wastewater below the crop root zone as described in the Discharger's application.
14. After startup of the AS/NDN treatment plant, application of recycled water to irrigate crops at the Eastern Agricultural Site must be in a manner consistent with the Discharger's application.

II. PROVISIONS

A. Waste Discharge and Water Recycling Requirements

1. Board Order No. No. R6V-2006-035 is hereby rescinded.
2. The second paragraph of Provision No. II.B.4. of Board Order No. R6V-2002-053 is hereby rescinded. The second paragraph of Provision No. II.B.4. included a schedule for submitting status reports for achieving compliance with Board Order No. R6V-2002-053. Requirements for submitting these status reports are addressed in other Orders of the Board, separate from this Order.
3. Discharge Specifications No. I.D.3 and I.D.4. of Board Order No. R6V-2002-053 are rescinded once the discharge from the AS/NDN tertiary treatment plant begins. Discharge Specifications No. I.D.3 and I.D.4. contain requirements from title 22 of the CCR that pertain to the quality of the effluent currently discharged to Piute Ponds and Nebeker Ranch. Currently, effluent from the Discharger's secondary treatment plant is discharged to these sites. Once the discharge from the AS/NDN tertiary treatment plant begins, Discharge Specifications in this Order will regulate the quality of effluent discharged to Piute Ponds and Nebeker Ranch.

B. Engineering Reports

1. Treated wastewater generated by the AS/NDN treatment plant must not be supplied to water recycling areas until the Lahontan Water Board Executive Officer has received the recommendations of the State Department of Health Services on the CCR, Title 22 Engineering Report, and the Discharger has received written acceptance of the Engineering Report from the Executive Officer.
2. Treated wastewater disinfected by the Ultraviolet Disinfection System for the MBR treatment plant must not be supplied to water recycling areas until the Lahontan Water Board Executive Officer has received the recommendations of the State Department of Health Services on the CCR, Title 22 Engineering Report, and the Discharger has received written acceptance of the Engineering Report from the Executive Officer.

C. Eastern Agricultural Site - Farm Management Plan

At least nine months before beginning application of treated wastewater to grow crops as part of Phase II for the Discharger's current facilities planning period, the Discharger must submit to the Lahontan Water Board a revised Farm Management Plan.

D. Eastern Agricultural Site – Vadose Zone Monitoring

The attached Monitoring and Reporting Program describes the vadose zone monitoring requirements for the Eastern Agricultural Site. Provision I.H. of this Order requires the Discharger assess vadose zone monitoring results to determine whether predictions of the Discharger's vadose zone model are reasonable.

E. Eastern Agricultural Site - Groundwater Compliance Monitoring Wells

1. Fields No. 1 through 8 (Determination of Existing Water Quality)

The groundwater compliance monitoring points for these fields are existing wells No. MW30, MW31, SW30 and SW31, which are located as shown in Attachment C. By **June 30, 2007**, the Discharger must complete a minimum of eight TDS sampling rounds for each of these compliance monitoring wells and then calculate the existing water quality at each well as specified in Discharge Specification No. I.B.5. The results of the calculations and data used to make the calculations must be included in the third quarter self monitoring report due on **October 30, 2007**.

2. Fields No. 9 through 12

a. Additional Groundwater Compliance Monitoring Wells

By **April 20, 2007**, the Discharger must submit a workplan to the Board for installing a minimum of one monitoring well to monitor groundwater near two private wells located approximately 1000 feet south east of the center of Field No. 10. To satisfy the requirement for this monitoring well, the Discharger may adjust the location and design of one of the three wells discussed in the Discharger's August 17, 2005 groundwater monitoring plan. The monitoring well is for monitoring trends and compliance with receiving water limits for groundwater. It is also for monitoring groundwater located near the water table and that could potentially be tributary to

groundwater located in the vicinity of the well casing screens for the two private wells.

At a minimum, the Discharger must install by **June 15, 2007**, three additional groundwater-monitoring wells for these fields, including the above-described well near Field No. 10. Installation of three additional wells for these fields is discussed in the Discharger's August 17, 2005 groundwater monitoring plan.

b. Determination of Existing Water Quality

The compliance monitoring points are existing well No. SW32 and the three additional required wells, which are located as shown in Attachment C. By **September 30, 2007**, the Discharger must complete a minimum of eight TDS sampling rounds for each of these compliance monitoring wells and then calculate the existing water quality at each well as specified in Discharge Specification No. I.B.5. The results of the calculations and data used to make the calculations must be included in the fourth quarter self monitoring report due on **January 30, 2008**.

3. Fields No. 13 through 20

a. Additional Groundwater Compliance Monitoring Wells

At least one year before beginning application of treated wastewater to grow crops in any of these fields, the Discharger must submit to the Lahontan Water Board a workplan for establishing additional groundwater monitoring compliance wells. A minimum of three additional wells must be installed for these fields as shown in Attachment C.

b. Determination of Existing Water Quality

The compliance monitoring points are existing well No. SW31 and MW-30 and the three additional required wells, which are located as shown in Attachment C. Before beginning application of treated wastewater to grow crops in these fields, the Discharger must install the wells in accordance with an approved workplan and complete a minimum of eight TDS sampling rounds for each of these compliance monitoring wells and then calculate the existing water quality at well as specified

in Discharge Specification No. I.B.5. The results of the calculations and data used to make the calculations must be included in the quarter self monitoring following the quarter the samples were collected.

F. Eastern Agricultural Site (Abandoned Wells, Fields No. 13 through 20)

At least three months before using treated wastewater in any of these fields, the Discharger must complete an investigation to determine the locations of all abandoned wells, properly destroy the abandoned wells in accordance with State and local regulations and submit a report to the Lahontan Water Board on the investigation and destruction of abandoned wells.

G. Eastern Agricultural Site (Site Run On and/or Runoff)

At least three months before beginning crop irrigation in any area within Fields No. 9 through 20, the Discharger must submit to the Lahontan Water Board a Drainage Control Report demonstrating the Discharger has completed drainage controls to prevent recycled water runoff as proposed in the 2020 Facilities Plan and Environmental Impact Report. Each Drainage Control Report must include as-built drawings including certification (by either a California licensed Civil Engineer, or a Certified Engineering Geologist) that the drainage controls were constructed in accordance with the Final Design Plans.

H. Eastern Agricultural Site (Performance Evaluation)

1. By **March 30, 2008** and annually thereafter, the Discharger must submit to the Lahontan Water Board a report containing:
 - a. An evaluation of the effectiveness of the Discharger's best management practices in minimizing downward percolation of treated wastewater constituents (salts, nitrate and other constituents) in the vadose zone underlying the Eastern Agricultural Site; and
 - b. An analysis of existing environmental and future operational conditions of the project. The results of the analysis must include values for both current and predicted: wastewater infiltration rates through the vadose zone and depth of percolation in the vadose zone. It must also include a discussion of the current and predicted potential for wastewater constituents to affect groundwater quality. The report should include the following data in sufficient detail to support

unsaturated flow predictive analyses:

- i. Soil moisture content, pore-fluid chemistry and soil texture from the ground surface to the water table in each of the different permeability zones in the Eastern Agricultural Site; and
- ii. Historic local weather data such as monthly precipitation and pan evaporation rates.

The report must be prepared by a registered hydrogeologist or soil scientist experienced in the field.

- c. If the annual evaluation of downward percolation in the vadose zone indicates there is potential for a future discharge of treated wastewater to groundwater, the annual report shall include a plan of action with a schedule for completing actions in time to prevent discharge of treated wastewater to groundwater. The Discharger must provide quarterly reports on the status of the measures taken to ensure there are no violations of the receiving water limits as a result of treated wastewater reaching groundwater.

2. If the Discharger desires to continue operation of the site after 2020, the Discharger must evaluate the potential for continued operations to cause a discharge to groundwater and submit a report to the Lahontan Water Board by **August 14, 2015**. The report must contain an assessment of whether the continued use of the Eastern Agricultural Site will cause a discharge to groundwater. If the assessment indicates a discharge to groundwater may occur, the report must include a plan and schedule for preparing a degradation analysis. The analysis must identify the magnitude and extent of groundwater degradation that would occur as result of continuing the operation beyond 2020.

3. If the Discharger intends to use the site after 2020, the Discharger must:

- a. File a complete Report of Waste Discharge with the Lahontan Water Board; and
- b. Obtain new or amended requirements from the Lahontan Water Board for further use of the site.

- I. Operator Certificates

The Facility must be supervised by persons possessing a wastewater treatment plant operator certificate of appropriate grade pursuant to CCR, title 23, section 3670 et seq.

J. Standard Provisions

The Discharger must comply with the "Standard Provisions for Waste Discharge Requirements," dated September 1, 1994, in Attachment "E" which is made part of this Order.

K. Monitoring and Reporting

1. Pursuant to the CWC, section 13267, the Discharger must comply with Revised Monitoring and Reporting Program No. R6V-2002-0053 (Date revised **TENTATIVE**) as specified by the Executive Officer which is made a part of this Order. Reports requested under the Monitoring and Reporting Program are being required to monitor the effects on water quality from known or suspected discharges of waste to waters of the State as a result of releases of treated wastewater or treated wastewater regulated by this Order.
2. Monitoring and Reporting Program No. R6V-2006-0051 for the Discharger's four proposed storage reservoirs located at the LWRP site is hereby rescinded. Monitoring and reporting requirements for the proposed reservoirs have been incorporated into the attached Monitoring and Reporting Program.
3. The Discharger must comply with the "General Provisions for Monitoring and Reporting," dated September 1, 1994, which is attached to and made a part of the Monitoring and Reporting Program.

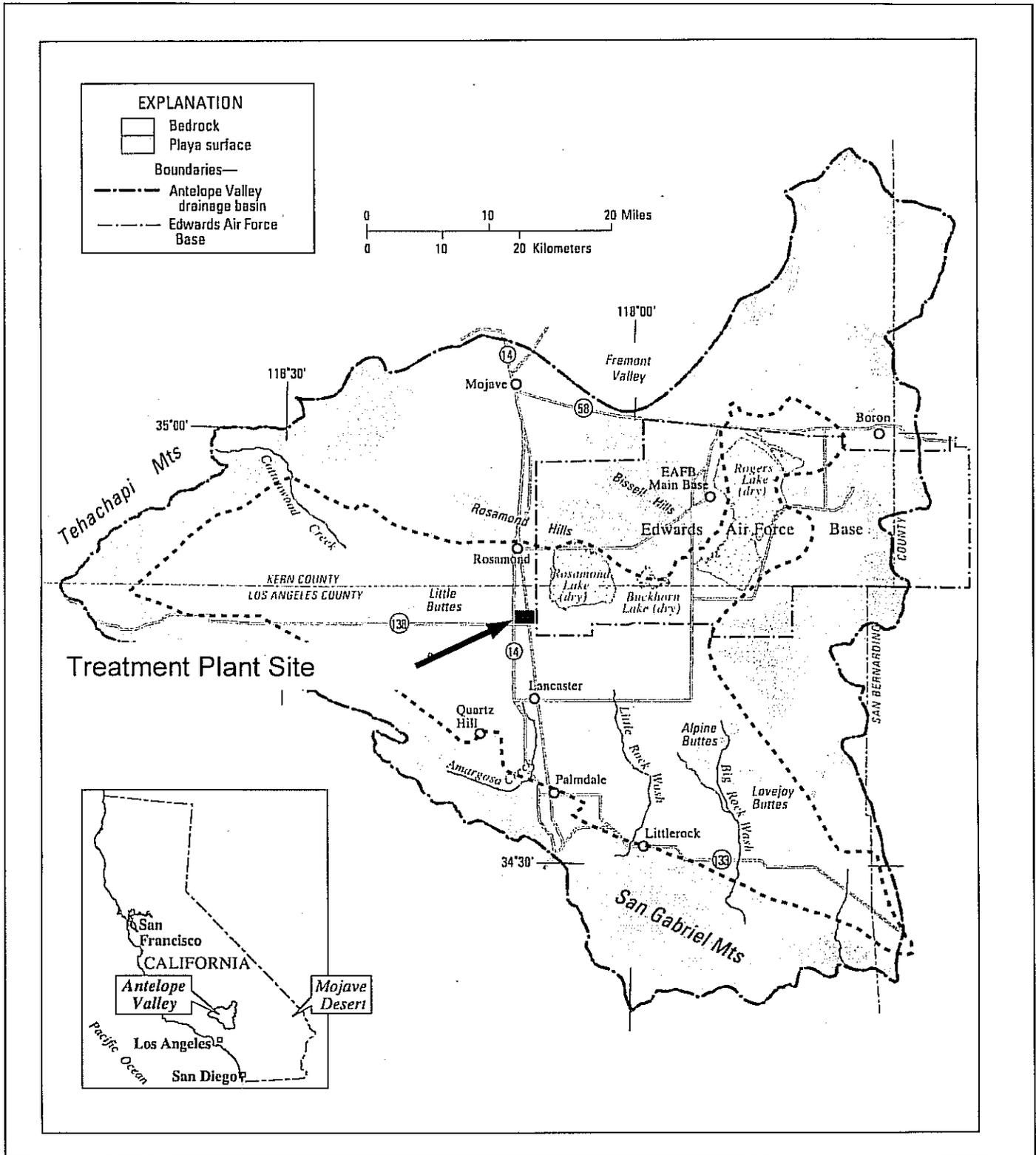
I, Harold J. Singer, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on March 14, 2007.

HAROLD J. SINGER
EXECUTIVE OFFICER

- Attachments: A. General Location Map
B. General Facilities Locations
C. Map of Eastern Agricultural Site
D. References
E. Standard Provisions for Waste Discharge Requirements

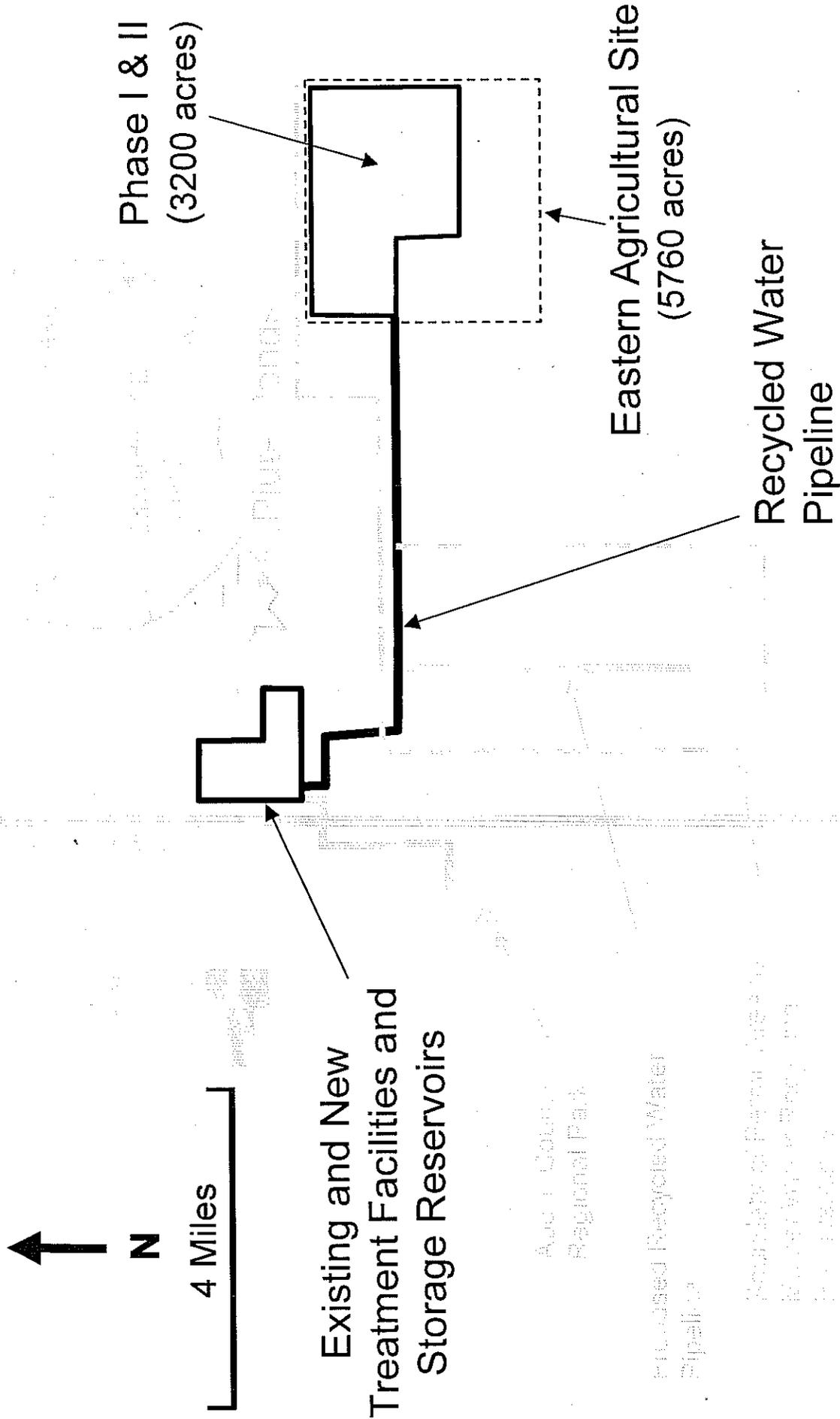
ATTACHMENT A

General Location Map



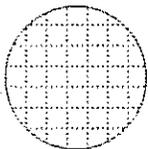
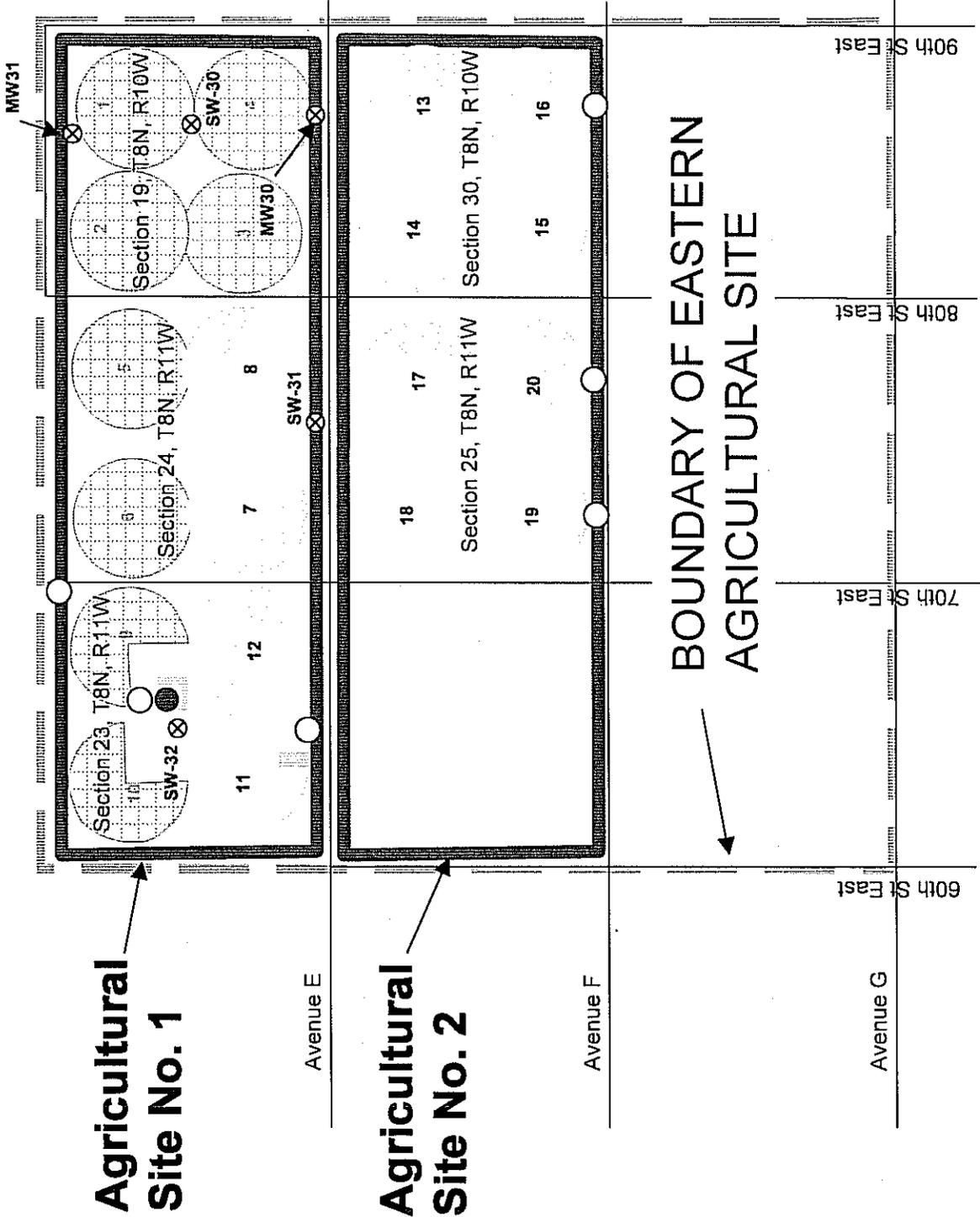
Modified from Figure 1, *Simulation of Groundwater Flow and Land Subsidence, Antelope Valley Ground-Water Basin*, USGS, 2003

Attachment B General Facilities Locations



Attachment C

Eastern Agricultural Site



Phase I
Pivot

Phase II
Pivot



Private property



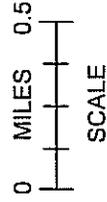
Private Water
Supply Well



Required
Additional
Compliance
Monitoring Wells



Existing
Compliance
Monitoring Wells



Attachment D References

Los Angeles County Sanitation District No. 14 Amendment of Board Order No. RV6-2002-053

Note: The references that constitute the submittals for completing the Discharger's application are in **bold** text.

1. Asano, T., et al. 1984. Irrigation With Reclaimed Municipal Wastewater - A Guidance Manual Report No. 84-1 wr. Calif. State Water Resources Control Board, Sacramento, CA. (**Asano, 1984**)
2. California Department of Health Services, 2005, Letter containing recommendations and comments on the January 15, 2005 engineering report prepared by Los Angeles County Sanitation District No. 14, June 2. (**CDHS, 2005, Jun. 2**)
3. California Department of Health Services, 2004, Hexavalent chromium monitoring results on the CDHS website, <http://www.dhs.ca.gov/ps/ddwem/chemicals/Chromium6/Cr+6index.htm>, Dec 15. (**CDHS, 2004, Dec 15**)
4. California Department of Water Resources, 1975, Bulletin 118 California's Groundwater, September (**DWR, 1975**).
5. California Fertilizer Association (CFA), 1985, Western Fertilizer Handbook, Seventh Edition (**CFA, 1985**)
6. Fetter, C.W., Applied Hydrogeology, Third Edition, 1994 (**Fetter, 1984**)
7. Hermanson, et al, 2000, Nitrogen Use by Crops and the Fate of Nitrogen in the Soil and Vadoze Zone, A Literature Search. Washington State Department of Ecology (**Hermanson, 2000**)
8. Kennedy/Jenks Consultants (KJC), 1995, Antelope Valley Water Resource Study, March (**KJC, 1995**)
9. Los Angeles County Sanitation District No. 14, 2007, Letter from District to o Lahontan Water Board staff regarding mathematical modeling, January 4.
10. Los Angeles County Sanitation District No. 14, 2006, Supplement to "Lancaster Water Reclamation Plant Eastern Agricultural Site, Phase I and II, Evaluation of Potential Impacts to Groundwater Quality" Extending Modeling for 50 Years, December 28. (**LACSD14, 2006, Dec 28**)
11. Los Angeles County Sanitation District No. 14, 2006, E-mail from District staff to Lahontan Water Board staff transmitting table summarizing trihalomethane data, November 30. (**LACSD14, 2006, Nov 30**).

12. Los Angeles County Sanitation District No. 14, 2006, Well Destruction Report Eastern Agricultural Site No. 1, Prepared by Geomatrix Consultants, Inc., November 17. (*LACSD14, 2006, Nov 17*).
13. Los Angeles County Sanitation District No. 14, 2006, Crop Management Plan for the Lancaster Effluent Management Site, Prepared by Cascade Earth Sciences, November 13. (*LACSD14, 2006, Nov 13*).
14. Los Angeles County Sanitation District No. 14, 2006, *Addendum No. 3 to Report of Waste Discharge (ROWD) for the Lancaster Water Reclamation Plant (LWRP) Stage V Plant Expansion*, August 30, 2006.
15. Los Angeles County Sanitation District No. 14, 2006, *Addendum No. 2 to Report of Waste Discharge (ROWD) for the Lancaster Water Reclamation Plant (LWRP) Stage V Plant Expansion*, August 14(*LACSD14, 2006, Aug 14*)
16. Los Angeles County Sanitation District No. 14, 2006, E-mail from District staff to Lahontan Water Board staff transmitting table summarizing data for groundwater monitoring wells located at Eastern Agriculture Site No. 1, August 15. (*LACSD14, 2006, Aug 15*).
17. **Los Angeles County Sanitation District No. 14, 2006, Amended Report of Waste Discharge and Engineering Report for Membrane Bioreactor with Ultraviolet Disinfection Pilot Plant, April 10, 2006. (*LACSD14, 2006, Apr 10*)**
18. Los Angeles County Sanitation District No. 14, 2006, *2005 Annual Self-Monitoring Report*, Mar. 29. (*LACSD14, 2006, Mar 29*).
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LACSD14 Att E ref adopted

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

STANDARD PROVISIONS
FOR WASTE DISCHARGE REQUIREMENTS

1. Inspection and Entry

The Discharger shall permit Regional Board staff:

- a. to enter upon premises in which an effluent source is located or in which any required records are kept;
- b. to copy any records relating to the discharge or relating to compliance with the Waste Discharge Requirements (WDRs);
- c. to inspect monitoring equipment or records; and
- d. to sample any discharge.

2. Reporting Requirements

- a. Pursuant to California Water Code 13267(b), the Discharger shall immediately notify the Regional Board by telephone whenever an adverse condition occurred as a result of this discharge; written confirmation shall follow within two weeks. An adverse condition includes, but is not limited to, spills of petroleum products or toxic chemicals, or damage to control facilities that could affect compliance.
- b. Pursuant to California Water Code Section 13260 (c), any proposed material change in the character of the waste, manner or method of treatment or disposal, increase of discharge, or location of discharge, shall be reported to the Regional Board at least 120 days in advance of implementation of any such proposal. This shall include, but not be limited to, all significant soil disturbances.
- c. The Owners/Discharger of property subject to WDRs shall be considered to have a continuing responsibility for ensuring compliance with applicable WDRs in the operations or use of the owned property. Pursuant to California Water Code Section 13260(c), any change in the ownership and/or operation of property subject to the WDRs shall be reported to the Regional Board. Notification of applicable WDRs shall be furnished in writing to the new owners and/or operators and a copy of such notification shall be sent to the Regional Board.
- d. If a Discharger becomes aware that any information submitted to the Regional Board is incorrect, the Discharger shall immediately notify the Regional Board, in writing, and correct that information.

- e. Reports required by the WDRs, and other information requested by the Regional Board, must be signed by a duly authorized representative of the Discharger. Under Section 13268 of the California Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation.
- f. If the Discharger becomes aware that their WDRs (or permit) are no longer needed (because the project will not be built or the discharge will cease) the Discharger shall notify the Regional Board in writing and request that their WDRs (or permit) be rescinded.

3. Right to Revise WDRs

The Regional Board reserves the privilege of changing all or any portion of the WDRs upon legal notice to and after opportunity to be heard is given to all concerned parties.

4. Duty to Comply

Failure to comply with the WDRs may constitute a violation of the California Water Code and is grounds for enforcement action or for permit termination, revocation and re-issuance, or modification.

5. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of the WDRs which has a reasonable likelihood of adversely affecting human health or the environment.

6. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the Discharger to achieve compliance with the WDRs. Proper operation and maintenance includes adequate laboratory control, where appropriate, and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Discharger, when necessary to achieve compliance with the conditions of the WDRs.

7. Waste Discharge Requirement Actions

The WDRs may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for waste discharge requirement modification, revocation and re-issuance, termination, or a notification of planned changes or anticipated noncompliance, does not stay any of the WDRs conditions.

8. Property Rights

The WDRs do not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

9. Enforcement

The California Water Code provides for civil liability and criminal penalties for violations or threatened violations of the WDRs including imposition of civil liability or referral to the Attorney General.

10. Availability

A copy of the WDRs shall be kept and maintained by the Discharger and be available at all times to operating personnel.

11. Severability

Provisions of the WDRs are severable. If any provision of the requirements is found invalid, the remainder of the requirements shall not be affected.

12. Public Access

General public access shall be effectively excluded from treatment and disposal facilities.

13. Transfers

Providing there is no material change in the operation of the facility, this Order may be transferred to a new owner or operation. The owner/operator must request the transfer in writing and receive written approval from the Regional Board's Executive Officer.

14. Definitions

- a. "Surface waters" as used in this Order, include, but are not limited to, live streams, either perennial or ephemeral, which flow in natural or artificial water courses and natural lakes and artificial impoundments of waters. "Surface waters" does not include artificial water courses or impoundments used exclusively for wastewater disposal.
- b. "Ground waters" as used in this Order, include, but are not limited to, all subsurface waters being above atmospheric pressure and the capillary fringe of these waters.

15. Storm Protection

All facilities used for collection, transport, treatment, storage, or disposal of waste shall be adequately protected against overflow, washout, inundation, structural damage or a significant reduction in efficiency resulting from a storm or flood having a recurrence interval of once in 100 years.

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

REVISED MONITORING AND REPORTING PROGRAM

NO. R6V-2002-053

Date Revised **(TENT)**

WDID NO. 6B190107017

FOR

**LOS ANGELES COUNTY SANITATION DISTRICT NO. 14
LANCASTER WATER RECLAMATION PLANT**

Los Angeles County

I. MONITORING

A. Flow Monitoring

The following data must be recorded in a permanent logbook and the information submitted according to the frequency listed:

1. The total volumes, in million gallons (MG), of wastewater flow to each treatment plant for each day and month.
2. The calculated average flow rates, in million gallons per day (MGD) of wastewater to each treatment plant calculated for each month.
3. The maximum instantaneous flow rate (MGD) of wastewater to each treatment plant that occurs each day.
4. The annual volume (MG) of septage received must be calculated and reported in the annual report.
5. The daily and monthly volumes, and calculated average flow rate, in MGD, of flow to each of the following sites/facilities and the source (treatment facility name) of the flow to each site/facility: Storage Reservoirs (existing), Storage Reservoirs (proposed), Lancaster Water Reclamation Plant site (Flow recycled for landscape irrigation, facility washdown, and construction of new facilities.), Eastern Agricultural Site, Piute Ponds/Impoundments A, B and C, Nebeker Ranch, Apollo Park, and Division Street Recycled Water Project.

B. Influent Monitoring

Influent samples taken prior to the primary clarifiers must be analyzed to determine the magnitude of the following parameter and the additional parameters listed in Table No. 1:

<u>Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Frequency</u>
Total Suspended Solids	mg/L	24-hour composite	Monthly

C. Reservoir Monitoring

The freeboard (the vertical distance between the top of the water level and the lowest point of a dike or overflow structure) must be monitored and recorded weekly, and reported in the monitoring report.

D. Effluent Monitoring (Secondary-Wastewater Discharged to Nebeker Ranch)

Samples of the secondary-treated wastewater discharged to Nebeker Ranch must be collected and analyzed to determine the magnitude of the parameters listed in Table No. 1:

E. Effluent Monitoring (Secondary-Treated Wastewater Discharged to Piute Ponds)

Samples must be collected downstream of all treatment units at the point of release to the earthen channel, which conveys treated wastewater to Piute Ponds. (The length of the earthen channel is approximately 0.5 miles). The samples must be analyzed to determine the magnitude of the following parameters and the additional parameters listed in Table No. 1:

<u>Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Minimum Frequency</u>
Total chlorine residual (after any dechlorination)	mg/L	Chlorine Residual Meter And Recorder	Continuous
Total coliform bacteria	MPN/100ml	Grab	Daily
Total Suspended Solids	mg/L	24-hour composite	Monthly
Dissolved Oxygen	mg/L	Grab	Weekly
Temperature	°C	Grab	Weekly

F. Effluent Monitoring (Disinfected Tertiary-Treated Wastewater)

Samples of disinfected tertiary-treated wastewater must be collected from each tertiary treatment plant and analyzed to determine the magnitude of the following parameters and the additional parameters listed in Table No. 1:

<u>Parameter</u>	<u>Units</u>	<u>Type</u>	<u>Minimum Frequency</u>
Flow	MGD	Flow Meter And Recorder	Continuous
Turbidity ¹	NTU	Turbidity Meter And Recorder	Continuous
Total chlorine residual	mg/L	Chlorine Residual Meter And Recorder	Continuous (When the effluent is chlorinated)
Modal contact time ²	Minutes	Calculated	Daily (When the effluent is chlorinated)
CT value ³	mg-minutes/L	Calculated	Daily (When the effluent is chlorinated)
Total coliform bacteria	MPN/100ml	Grab Sample	Daily
Dissolved Oxygen	mg/L	Grab	Weekly
Temperature	°C	Grab	Weekly

¹ For each 24-hour period, record and report the following:

- a. AVTTP treatment plant: average turbidity, amount of time (minutes) the turbidity exceeded five (5) NTUs (if any), and the maximum turbidity.
- b. AS/NDN treatment plant: average turbidity, amount of time (minutes) the turbidity exceeded five (5) NTUs (if any), and the maximum turbidity.
- c. MBR treatment plant: amount of time (minutes) the turbidity exceeded 0.2 NTUs (if any) and the maximum turbidity.

² The modal contact time at the highest and lowest flows must be recorded and reported for each 24-hour period where there is production of disinfected tertiary recycled water. The "modal contact time" is the amount of time elapsed between the time that a tracer, such as salt or dye, is injected into the influent at the entrance to a chamber and the time that the highest concentration of the tracer is observed in the effluent from the chamber. For the purpose of this determination, modal contact time must be derived from a predetermined plot correlating modal contact times to varying flow conditions. (22CCR§60301.600)

³ When chlorine is used as the disinfectant in production of disinfected tertiary recycled water, the lowest CT value must be calculated for each 24-hour period. $CT \text{ (mg-minutes per liter)} = \text{chlorine residual (mg/L)} \times \text{modal contact time (minutes)}$. To calculate the lowest value, first record the following data for the 24-hour period:

- a. Modal contact time under highest flow and corresponding total chlorine residual at that time.
- b. Lowest total chlorine residual and corresponding modal contact time.
- c. Highest total chlorine residual and corresponding modal contact time.
- d. Modal contact time under lowest flow and corresponding total chlorine residual at that time.

Next, calculate CT values for each of the four conditions, above. The lowest of the four calculated CT values is the lowest CT for the period.

G. Surface Water Monitoring

There are two existing monitoring stations within surface waters located in the Piute Pond area. The two stations consist of Station RS-2 located 150 feet downgradient of Challenger Way. (The point of discharge from the effluent outfall channel to the Piute Pond area is the spillway located on Challenger Way.), and Station RS-4 located at the spillway to Rosamond Dry Lake. Samples must be collected at the above stations and analyzed to determine the magnitude of the following parameters and the additional parameters listed in Table No. 1:

<u>Parameter</u>	<u>Units</u>	<u>Type</u>	<u>Minimum Frequency</u>
Total chlorine residual	mg/L	Grab	Quarterly
Dissolved Oxygen	mg/L	Grab	Quarterly
Temperature	°C	Grab	Quarterly

Observations of Piute Ponds for the presence of color, odor, foam, floating material and oil and grease must be recorded quarterly at the surface water sampling station when the surface water samples are collected.

H. Vadose Zone Monitoring – Eastern Agricultural Site

1. Vadose Zone Monitoring

The Discharger must perform vadose zone monitoring to provide adequate advance warning of deep percolation of treated wastewater occurring at a rate or depth incongruent with the Discharger's predictions.

The Discharger may propose an alternate method of compliance to the method described in Sections H.2 through H.5 of this Monitoring and Reporting Program.

2. Fields No. 1, 2, 3, 4 and 6 (Phase I)¹

Install a minimum of one vadose zone monitoring station in each field by **March 14, 2008**. If the Discharger decides to propose an alternate method of monitoring the vadose zone, the Discharger must submit by

¹ Fields No. 1, 2, 3, 4 and 6 (e.g., center-pivot irrigation areas) described in the cropping plan (LACSD14, 2006, Nov 13) and shown in Attachment C of this Order.

June 14, 2007 a proposed vadose zone monitoring plan to the Executive Officer for consideration and approval. The alternate vadose zone monitoring plan must be implemented by **March 14, 2008**.

3. Field No. 5 and Fields No. 7 through 20

One year before starting irrigation of crops within Fields 5, 7 through 20, the Discharger must complete installation of a minimum of one vadose zone monitoring station in each field or implement an approved alternate means of vadose zone monitoring. If the Discharger decides to propose an alternate method of monitoring the vadose zone, the Discharger must submit a proposed vadose zone monitoring plan to the Executive Officer for consideration and approval within 18 months of irrigation.

4. Installation of Vadose Zone Monitoring Stations

Vadose zone monitoring stations must be located within the fields a distance of no less than 200 feet from the outer boundary of the field (e.g., center-pivot irrigation area). Stations must be positioned within the Site to monitor parameters (moisture content and constituent concentrations) for all representative soil types and crop types located in the fields. Each station must include:

- a. Soil moisture sensors placed at depths of 10, 16.5, 20, 33, 50, 66 and 80 feet below ground surface to monitor soil moisture movement through the vadose zone.¹
- b. One lysimeter placed at 15 feet below ground surface for collecting samples of vadose zone moisture.
- c. Before the Discharger installs the above monitoring devices (moisture sensors and lysimeters), a soil sample must be collected at (or adjacent to) each point where the instruments are to be installed. The samples must be analyzed for soil texture, soil moisture content, organic matter, pH, TDS, nitrate-nitrogen, ammonia nitrogen, Kjeldahl nitrogen, and chloride.
- d. The Discharger must prepare and submit correlations between sensor readings and moisture content. The correlation will be

¹ Soil moisture sensor depths roughly correlate to the observation points in the Discharger's unsaturated zone model analyses contained in correspondence to RB by Downey Brand Attorneys on December 28, 2006.

obtained with appropriate methodology as proposed by a qualified expert pursuant to industry standards.

The Discharger must record the dates for collection of the soil samples and installation of the vadose monitoring stations, and report the results of laboratory results for soil analyses and moisture sensor calibration.

5. Monitoring of Moisture Sensors and Lysimeters

Soil moisture sensors must be monitored at a frequency of no less than daily. The Discharger must collect grab samples from lysimeters in accordance with the sampling frequencies described below. The samples must be analyzed for the following parameters:

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Total Kjeldahl Nitrogen	mg/L as N	Quarterly
Nitrate Nitrogen	mg/L as N	Quarterly
Ammonia Nitrogen	mg/L as N	Quarterly
Nitrite Nitrogen	mg/L as N	Quarterly
Total Dissolved Solids	mg/L	Quarterly

6. Crop Water Balance

At least once per month, the Discharger must:

- a. Record the crop water needs (inches) for each field (e.g., center-pivot irrigation area), which were previously calculated for the past 30 days,
- b. Measure and record the volume of water applied in each field for the previous 30 days,
- c. Calculate the water balance for the previous 30 days to confirm the volume of applied water was less than that volume that would result in percolation below the root zone,
- d. Evaluate crop water needs for the next 30 days based on reference evapotranspiration and crop coefficients that consider crop growth stage and crop type,
- e. Determine and record the crop water needs (inches) for each field over the next 30 days based on the irrigation plan in the Farm Management Plan, and
- f. Calculate and record the volume of irrigation water needed over the next 30 days.

I. Groundwater Monitoring (Proposed Storage Reservoirs)

Discharge Specification No. I.A.1.f. of Board Order R6V-2006-0051 and Monitoring and Reporting Program No. R6V-2006-0051 requires the Discharger to install three groundwater-monitoring wells, in addition to Well No. MW 209, to monitor groundwater beneath the proposed storage reservoirs. Provision No. II.A. of Board Order R6V-2006-0051 requires the Discharger to submit a workplan for installing the additional groundwater monitoring wells.

Before discharging treated-tertiary wastewater to the storage reservoirs, the Discharger must complete installation of the additional required compliance monitoring wells and complete the following minimum numbers of sampling rounds for parameters listed in Table No. 2:

- a. Eight rounds for total dissolved solids (TDS) in each compliance monitoring well, and
- b. Two rounds for the other parameters in each compliance monitoring well.

The frequency of monitoring must be no less than quarterly. The Discharger must then determine background water quality for these parameters and determine the "Threshold" level for TDS as described in the Order. In each monitoring report the Discharger must compare the data for the TDS concentrations in each well with respect to the "Threshold" level. If the "Threshold" level is exceeded in any well, the Discharger must submit technical reports as required in the Order. (Note: If a constituent concentration is non-detectable on the first sample, such as THMs, HAA5, or NDMA, the Discharger may elect to use this value to represent background conditions and discontinue further analysis for that parameter.)

After beginning the discharge of treated-tertiary wastewater to the storage reservoirs, the Discharger must collect samples from the wells and analyze the samples to determine the magnitude of the parameters listed in Table No. 1 in accordance with the frequency in that table.

J. Groundwater Monitoring (Eastern Agricultural Site)

1. Summary of Existing and Proposed Groundwater Monitoring Wells

The frequency of monitoring and parameters monitored for each of the following monitoring wells must be in accordance with Monitoring Sections J.2. and J.3, below.

a. Fields No. 1 through 8

There are four existing groundwater monitoring wells for monitoring groundwater underlying Fields No. 1 through 8. The wells are identified as wells No. MW30, MW31, SW30 and SW31.

b. Fields No. 9 through 12

There is one existing groundwater monitoring well (Well No. SW32) for monitoring groundwater underlying Fields No. 9 through 12. A provision in the attached Order requires that the Discharger install a minimum of three additional groundwater monitoring wells for Fields No. 9 through 12.

c. Fields No. 13 through 20

There are two existing groundwater monitoring wells for monitoring groundwater underlying Fields No. 13 through 20. The wells are identified as wells No. MW30 and SW31. A provision in the attached Order requires that the Discharger install a minimum of three additional groundwater monitoring wells for these fields.

2. Monitoring (Before Application of Treated-Wastewater to Grow Crops)

Before applying tertiary-treated wastewater to grow crops in Fields 9 through 20, the Discharger must complete installation of any additional proposed monitoring wells that are required and complete the following minimum numbers of sampling rounds in each of the wells (both existing and proposed) for parameters listed in Table No. 3: Eight rounds for TDS and nitrate, and two rounds for the other parameters listed in Table No. 3. The frequency of monitoring must be no less than quarterly.

3. Monitoring (After Beginning Application of Treated-Wastewater to Grow Crops)

After beginning application of treated-wastewater to grow crops, the Discharger must collect samples from the wells and analyze the samples to determine the magnitude of the parameters listed in Table No. 3. The minimum frequency of sampling must be in accordance with Table No. 3.

4. Private Water Supply Wells

Each quarterly report must include a map showing the locations of private water supply wells located in the following sections and the surrounding areas located within 0.5 miles of the sections: Sections 23 and 24, Township No. 8 North, Range No.11 West (Sections 23, 24, 25 and 26, T8N, R11W) and Section 19 and 30 T8N, R10W, San Bernardino Base and Meridian (SBB&M).

K. Groundwater Monitoring (Existing Surface Impoundments, Piute Ponds and Nebeker Ranch)

Grab samples of ground water must be collected from existing monitoring wells and analyzed in accordance with Tables No. 2, 4 and 5.

L. Groundwater Monitoring (Field Parameters)

Field parameters must be determined in all monitoring wells and, when possible, in supply wells each time they are sampled to determine the following.

<u>Parameters</u>	<u>Units</u>
Static water depth	Feet below ground surface
Electrical conductivity	uS/cm
pH	pH units
Temperature	Degrees C
Dissolved Oxygen	mg/L
Turbidity	NTU
Color	Visual

The field parameters from each well must be reported in a separate table.

M. Data Presentation for Compliance Determinations

Annual monitoring reports must contain:

1. An 11" x 17" copy of a site plan showing private water supply wells described Monitoring Section J, authorized disposal/recycling sites, groundwater monitoring wells, surface water monitoring points, and groundwater and land surface elevations. The site plan must include ground water elevation isopleths at all authorized disposal/recycling sites except the Piute Ponds area.

2. Graphs showing long-term trends of groundwater elevations as measured in groundwater monitoring wells.
3. Graphs (concentration versus time) showing long-term trends in concentrations of the following constituents in lysimeters and groundwater monitoring wells: TDS and Nitrate,
4. Graphs (concentration versus time) showing long-term trends in concentrations of the following constituents in the primary treatment plant influent: biochemical oxygen demand (BOD), carbonaceous BOD (CBOD), chemical oxygen demand (COD), total suspended solids (TSS), Nitrate, Kjeldahl Nitrogen, Ammonia, TDS
5. Graphs (concentration versus time) showing long-term trends in concentrations of the following constituents in the effluent to Piute Ponds, Surface Water monitoring stations RS-2 and RS-4: BOD, CBOD, COD, TSS, Nitrate, Kjeldahl Nitrogen, Ammonia, TDS, Chlorides, Temperature, pH, DO and chlorine residual.
6. Graphs (concentration versus time) showing long-term trends in concentrations of the following constituents in the effluent to Nebeker Ranch and Agricultural Site: BOD, CBOD, COD, TSS, Nitrate, Kjeldahl Nitrogen, and Ammonia.
7. Graphs (concentration versus time) showing long-term trends in concentrations of the following constituents in the recycled water to Apollo Park: BOD, CBOD, COD, N03, Kjeldahl Nitrogen, Ammonia, Turbidity, and Chlorine residual.
8. Graphs (concentration versus time) showing long-term trends in concentrations of the following constituents in the lakes at Apollo Park: TDS, Chloride.

N. Surface Water Monitoring (Chronic Toxicity)

The Discharger must perform toxicity testing, as described, below, on samples of undiluted treatment Facility effluent and surface water monitoring station RS-2. Test must be conducted on either samples collected after dechlorination or chlorinated samples, dechlorinated after collection. The following tests must be performed annually for a period of five years from the time they were initiated to allow statistical analysis of the results.

1. All tests must be conducted on grab samples of treatment Facility effluent and receiving waters. Analysis of Variance (ANOVA) must be used to determine whether differences between control and sample results are significant. Multiple-dilution, dose-response testing must be used to characterize any toxic response and track quantitative changes or trends in toxicity. IC25 defined calculations must be used pursuant to US EPA methods or other approved statistical methods to assess whether effluent exceeds a biologically significant toxicity threshold on a consistent basis.

The Discharger must conduct a seven-day chronic test with fathead minnows (*Pimephales Promelas*) using test method No. 1001 on samples of undiluted effluent.

2. If any one ambient water test indicates that the toxicity threshold is exceeded, then another confirmatory chronic toxicity test using the specified methodology and test species must be conducted on a new sample within 30 days of obtaining test results. In no case must the second confirmatory test results be submitted to the Water Board later than 60 days after completion of the confirmatory test.
3. All test species, procedures, and quality assurance criteria used must be in accordance with the most recently approved US EPA methods. The Discharger may use control water formulated in accordance with the U.S. EPA method protocol (Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to Freshwater Organisms, Third Edition, EPA/600/4-91/002). The standard synthetic control water approximates the characteristics of the District's effluent discharge and surface receiving waters. The standard synthetic control water for chronic toxicity testing is allowed by the U.S. EPA toxicity testing protocol. Alternate control water for the toxicity tests must be submitted to Water Board staff for review and approval prior to use.

O. Surface Water Monitoring (Acute Toxicity)

1. Acute Toxicity Testing Methods

The Discharger must conduct quarterly acute toxicity testing using a control and undiluted effluent in accordance with US EPA approved methods and their subsequent revisions and appropriate organisms as determined by the Water Board, SWRCB, and the US EPA. Tests must be conducted on either samples collected after dechlorination or chlorinated samples, dechlorinated after collection.

2. Acute Toxicity Testing Schedule

- a. The Discharger must perform acute toxicity tests using fathead minnows and methods specified in "Methods for Measuring the Acute Toxicity of Effluent to Freshwater and Marine Organisms" (March 1985, EPA/600/4-85/013).
- b. Regular test schedule: The Discharger must conduct acute toxicity on a quarterly basis following the approval of the representative test species by the Executive Officer of the Water Board, see 2(a), above.

P. Surface Water Monitoring (Toxicity Identification Evaluation/Toxicity Reduction Evaluation)

1. The Discharger must begin monitoring of effluent toxicity in accordance with Monitoring and Reporting Program Requirements No. I.N. and I.O., above. If in any chronic receiving/ambient test, toxicity is revealed as a result of the discharge, the test must be repeated within 30 days.
2. If two repeated chronic toxicity tests, other than from chlorine and ammonia, reveal toxicity as a result of the discharge, the Discharger must complete a Toxicity Identification Evaluation (TIE) and a Toxicity Reduction Evaluation (TRE), beginning with Phase 1 of the TIE, on the Facility effluent to identify compounds causing chronic toxicity for an indicator organism approved by the Executive Officer. This monitoring and reporting program requires the Discharger prepare and submit a copy of its initial TRE workplan to the Executive Officer for consideration of approval.
3. A technical report must be submitted at the end of the toxicity study that identifies the toxic component(s), and details the toxicity evaluations performed and the manner in which the component(s) was (were) identified.
4. Should toxic components be something other than chlorine and ammonia, and be determined difficult to identify, the Discharger may be granted a limited time extension by the Executive Officer for completion of the TIE and TRE.
5. The TIE must be performed in accordance with USEPA manuals EPA/600/3-88/035, 035 and 036, dated September 1988 and

February 1989, and any subsequent revisions. The TRE must be performed in accordance with the framework provided in the USEPA guidance document EPA/600/2-88/062, dated April 1989, and any subsequent revisions.

6. The Discharger must take all reasonable steps to control toxicity other than chlorine and/or ammonia once the source of the toxicity is identified.
7. Failure of the Discharger to conduct required toxicity tests or a TRE as required must result in the establishment of effluent limitations for chronic toxicity in an amendment to WDRs or an appropriate enforcement action.

Q. Pretreatment Monitoring

The Discharger must prepare an annual pretreatment report describing the Discharger's pretreatment activities over the previous calendar year. In the event that the Discharger is not in compliance with any requirement, then the Discharger must also include the reason for noncompliance and state how and when the Discharger will comply with requirement. The report must include, but is not be limited to, the following information:

1. A summary of analytical results from representative, flow proportioned, 24-hour composite sampling of the publicly owned treatment work's (POTW) influent and effluent for those pollutants US EPA has identified under Section 307(a) of the Act, which are known or suspected to be discharged by industrial clean water users. The Discharger is not required to sample and analyze for asbestos. Biosolids must be analyzed pursuant to the current federal requirements (40 CFR part 503). Biosolids results must be expressed in mg/kg dry sludge, 100% dry weight basis.

Wastewater sampling and analysis must be performed at the intervals specified in the Discharger's Permit. The Discharger must also provide any influent, effluent, or biosolids monitoring data for nonpriority pollutants that the Discharger believes may be causing or contributing to interference, pass through, or adversely impacting biosolids quality. Sampling and analysis must be performed in accordance with the techniques prescribed in 40 CFR part 136 and amendments thereto.

2. A discussion of Upset, Interference, or Pass Through incidents, if any, at the POTW that the Discharger knows or suspects were caused by

industrial users of the POTW system. The discussion must include the reason(s) why the incident(s) occurred, the corrective action(s) taken, and, if known, the name and address of the industrial user(s) responsible. The discussion must also include a review of the applicable local or federal discharge limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent Pass Through, Interference, or noncompliance with sludge disposal requirements.

3. An updated list of the Discharger's significant industrial users (SIU), including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Discharger must provide a brief explanation for each deletion. The SIU list must identify the SIUs subject to Federal Categorical Standards by specifying which set(s) of standards are applicable to each SIU. The list must also indicate which SIUs are subject to local limitations.
4. The Discharger must characterize the compliance status of each significant industrial user by providing information, which includes:
 - a. SIU name;
 - b. Industrial category;
 - c. Number of samples taken by the POTW during the year;
 - d. Number of samples taken by the SIU during the year;
 - e. A description that states the procedures used to ensure that all needed certificates were provided for Facilities which have a toxic organic management plan;
 - f. Standards violated during the year (Federal and local, reported separately);
 - g. Whether the facility was in Significant Non-Compliance (SNC), as defined by 40 CFR part 403.8 (f)(2)(viii), at any time in the year; and
 - h. A summary of enforcement or other actions taken during the year to return the SIU to compliance, including the type of action; and amount of fines assessed/collected (if any). Briefly describe any proposed actions, for bringing the SIU into compliance.

5. A short description of any significant changes in operating the pretreatment program which differ from the previous year including, but not limited to changes concerning: the program's administrative structure; local industrial discharge limitations; monitoring program or monitoring frequencies; legal authority or enforcement policy; funding mechanisms; resource requirements; or staffing levels.
6. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases.
7. A summary of public participation activities that involve and inform the public of the program including a copy of the newspaper notice, if any, required under 40 CFR part 403.8 (f)(2)(vii).
8. A description of any changes in sludge disposal methods and a discussion of any concerns not described elsewhere in the report.
9. A description of any changes in biosolids disposal methods and a discussion of any concerns not described elsewhere in the report, and a brief description of any program the POTW implements to reduce pollutants from nondomestic users that are not classified as SIUs.

R. Biosolids Monitoring

The following must be recorded monthly:

1. Total quantity of biosolids generated during the monitoring period.
2. Date and quantity of biosolids removed off site, location of use, recipient (including name and address) and biosolids reuse or disposal method. The type of crop grown, if biosolids are directly land applied at an offsite location,
3. Cumulative total quantity of biosolids currently on site including the quantity of biosolids added during this monitoring period.

The Discharger must include in each monitoring report the amount and type of all grit and screenings, and undigested sludge waste hauled off site for disposal or recycle. The person or company doing the hauling and the legal point of disposal or recycle must also be recorded.

S. Agricultural Site Monitoring (Annual Cropping Plan)

1. Information on cropping results for the previous calendar year must be submitted by April 30 of each year. The information must include but not be limited to:
 - a. Crop acreage, crop names and types, approximate planting and harvest dates and irrigation methods;
 - b. Sufficient information demonstrating the Discharger's application of treated wastewater to grow crops is in compliance with requirements in the attached Order. The information must include amounts for irrigation, rainfall, evapotranspiration loss and all other information needed to demonstrate whether the Discharger is in compliance with Discharge Specifications No. I.D. 15 and 16 of the attached Order; and
 - c. Description of the fate of nitrogen that was applied and available in the root zone and not accounted for in the crops harvested.

2. Proposed annual cropping plan must be submitted by October 30th of each year. The plan must include the following information for the upcoming calendar year:
 - a. Crop acreage, crop names and types, approximate planting and harvest dates and irrigation methods;
 - b. Sufficient information demonstrating the Discharger will comply with Discharge Specifications No. I.D. 13 and 14 of the attached Order, include the information described in No. I.S.1.b., above; and
 - c. Description of the fate of nitrogen that will be applied and that is already available in the root zone.

T. Agricultural Site Monitoring (Farm Chemical Use Monitoring)

The Discharger must record the names and chemical compositions, quantities and dates of application of all chemical fertilizers, herbicides and pesticides applied to any crop grown on the water recycling site in a permanent log book. Chemical use information must be submitted to the Regional Board on a quarterly basis.

U. Operation and Maintenance Monitoring

A brief summary of any operational problems and maintenance activities must be submitted to the Water Board with each monthly monitoring report.

This summary must discuss:

1. Any major modifications or additions to the wastewater conveyance system, treatment facilities, storage reservoirs or disposal/water recycling facilities.
2. Any major maintenance conducted on the wastewater conveyance system, treatment facilities, storage reservoirs or disposal/water recycling facilities.
3. Any major problems occurring in the wastewater conveyance system, treatment facilities, storage reservoirs or disposal/water recycling facilities.
4. The calibration of any wastewater flow measuring devices.
5. The dates of discharge ditch cleaning, best management practices (BMPs) used for the protection of water quality in Piute Ponds, and effectiveness of the BMPs.

V. Surface Water Monitoring (Duck Hunting Season)

Until the new tertiary AS/NDN facilities are constructed and operational, the beginning and ending dates of the annual duck hunting season (as determined by the California Department of Fish and Game), and 30-days prior to the beginning of the season, as applied to Piute Ponds during which disinfection for the restricted recreational impoundment is required must be recorded and reported on the pertinent monthly Self Monitoring Reports and in the Annual Report.

W. Mitigation Measure Monitoring

Each monitoring report must include a report on the status of implementing each of mitigation measures listed in Finding No. 20 of the attached Order. The report must include information on the effectiveness of implementation measures. The report must also include but not be limited to the following information:

1. Impact: Downward migration of treated wastewater applied at Eastern Agricultural Site would degrade the quality of groundwater.
 - a. This Monitoring and Reporting Program (Monitoring Requirement No. I.A.5) requires that the Discharger record and report the source (treatment facility name) of the flow to the Eastern Agricultural Site. The attached Order permits use of tertiary effluent at Eastern Agricultural Site.
 - b. Status of compliance with Provisions No. II.F. and II.G. of the attached Order. Provisions No. II.F. and II.G. require that the Discharger install an adequate monitoring networks for the vadose zone and groundwater.
 - c. This Monitoring and Reporting Program (Monitoring Requirements No. I.F and I.G.) requires that the Discharger record and report results of monitoring of the vadose zone and groundwater monitoring networks. This data will be used: (i) to demonstrate treated wastewater is not percolating to groundwater, and (ii) for determining if there is a threat of degradation of underlying groundwater and/or a threatened violation of receiving water limits in groundwater for TDS and nitrate.

2. Impact: Eastern Agricultural Site run on and/or runoff would result in degradation of the quality of surface water.
 - a. Status of compliance with Provision No. II.I.3 of the attached Order. Provision No. II.I.3 requires that the Discharger construct drainage controls to prevent run on and runoff at the Eastern Agricultural Site for protection of surface-water quality.

3. Impact: Flow of treated wastewater down abandoned wells located at the Eastern Agricultural Site would degrade the quality of groundwater.
 - a. Status of compliance with Provision No. II.H.2 of the attached Order. Provision No. II.H.2 requires the Discharger identify and properly destroy abandoned groundwater wells. Once completed, this status need no longer be reported.

X. Laboratory Analyses

1. General

Sample results greater than or equal to the reported Minimum Level (ML) must be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample). Sample results less than the reported ML, but greater than or equal to the laboratory's Method Detection Limit (MDL), must be reported as "Detected , but Not Quantified," or DNQ. The estimated chemical concentration of the sample must also be reported. For the purposes of data collection, the laboratory must write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy, (+/- a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

2. Disinfection By-Products (DBPs)

DBPs must be analyzed using a laboratory method with the following Minimum Reporting Levels:

<u>DBPs</u>	<u>Minimum Reporting Level (micrograms/Liter)</u>
Total trihalomethanes (TTHM)	80
Bromodichloromethane	0.5
Bromoform	0.5
Chloroform	0.5
Dibromochloromethane	0.5
Haloacetic acids (five) (HAA5)	60
Monochloroacetic Acid	2
Dichloroacetic Acid	1
Trichloroacetic Acid	1
Monobromoacetic Acid	1
Dibromoacetic Acid	1
N-Nitrosodimethylamine (NDMA)	0.002

For NDMA analyses, the Discharger is considered to be in compliance with requirements pertaining to the method of laboratory analysis (contained in Provision 1.a, 1.b and 1.c of the attached General

Provisions for Monitoring and Reporting), if the Discharger uses a modified USEPA method (e.g., USEPA method 1625) in order to achieve a reporting limit of two (2) nanogram per liter (ng/L).

3. Volatile Organics

Analysis for the volatile organics, o-xylene and m+p-xylene, is acceptable for meeting the requirement to analyze for xylene.

4. Dioxins and polychlorinated biphenyls (PCBs)

Monitoring for dioxins and polychlorinated biphenyls (PCBs) is not required.

5. Chromium

Use appropriate USEPA approved methods that will quantify concentrations down to 0.0025 mg/l for hexavalent chromium and 0.05 mg/l for total chromium.

II. REPORTING

A. General Provisions and Reports

1. The Discharger must comply with the "General Provisions for Monitoring and Reporting," (GPMR - Attachment "A") dated September 1, 1994, which is attached to and made part of this Monitoring and Reporting Program.
2. The Discharger must submit by July 30, 2007, a copy of its initial Toxicity Reduction Evaluation (TRE) Workplan to the Executive officer for consideration of approval. The Discharger must use the USEPA manual, Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants, EPA/833B-99/002 as guidance. This workplan must describe in detail the steps the discharger intends to follow in the event toxicity (not as a result of ammonia or chlorine) is observed in both the original and confirmatory chronic toxicity test conducted on effluent discharged to Piute Ponds.
3. Monitoring Section No. M.3. of this Monitoring and Reporting Program requires the Discharger prepare graphs (concentration versus time) showing long-term trends in concentrations of the following constituents in lysimeters and groundwater monitoring wells for the proposed storage reservoirs: TDS, Nitrate, Chloride. If the long-term trends are

not as predicted by the Discharger's water quality effects analysis described in the attached Order, the Discharger must provide additional technical information in the monitoring report. The additional information must be sufficient to demonstrate whether the observed long-term trend could potentially have an adverse effect on the quality of underlying groundwater. Such information may include results of additional site investigation, more in-depth evaluation of the information, completion of calibration and sensitivity analysis for the mathematical model, etc.

B. Submittal Periods

The Discharger must submit monitoring reports according to the following schedule:

1. Beginning on **March 30, 2007**, monthly monitoring reports must be submitted to the Regional Board by the 30th of the month following each monthly monitoring period. Data required to be collected over a longer period of time is to be incorporated into the monthly report for the month it is collected. The following reports must be provided on a monthly frequency:
 - a. Flow Monitoring
 - b. Influent Monitoring
 - c. Reservoir Monitoring
 - d. Effluent Monitoring
 - e. Operation and Maintenance Monitoring

2. Beginning **April 30, 2007**, quarterly monitoring reports must be submitted to the Regional Board by the 30th of the month following each quarterly monitoring period. Data that are required on a frequency longer than one quarter will be incorporated into the quarterly report that coincides with the period for which the analyses are required. The following reports must be provided on a quarterly frequency:
 - a. Influent Monitoring (Data collected quarterly, semiannually and annually)
 - b. Effluent Monitoring (Data collected quarterly, semiannually and annually)
 - c. Ground Water Monitoring
 - d. Vadose Zone Monitoring
 - e. Surface Water Monitoring (Except chronic toxicity monitoring)
 - f. Effluent Monitoring (Acute toxicity monitoring)
 - g. Eastern Agricultural Site Monitoring

3. Beginning on **March 30, 2007**, annual monitoring reports must be submitted to the Regional Board by March 30th of the year following each annual (calendar year) monitoring period. The following reports must be provided on a annual frequency:
- a. Surface Water Monitoring (chronic toxicity monitoring)
 - b. Effluent Monitoring (Chronic toxicity monitoring)
 - c. Biosolids Monitoring
 - d. Pretreatment Monitoring
 - e. Mitigation Measure Monitoring
 - f. Eastern Agricultural Site Monitoring (Annual report summarizing observed performance of the agricultural site compared to predicted percolation rates and depths in the vadose zone as described in the Report of Waste Discharge.)

Each annual monitoring report must also contain: an evaluation and summary of the monthly and quarterly information in Reporting Requirements II.B.1 and II.B.2, and evaluation and summary of the compliance status, and the names and grades of all the certified operators.

C. Rescission of Monitoring and Reporting Programs

The following are hereby rescinded:

- a. Monitoring And Reporting Program No. R6V-2002-053 dated September 11, 2002 (Lancaster Water Reclamation Plan)
- b. Monitoring And Reporting Program No. R6V-2006-0051(Four New Storage Reservoirs)
- c. Monitoring And Reporting Program No. R6V-2006-0035 (Eastern Agricultural Site No. 1 and Membrane Bioreactor Tertiary Treatment Plant)

Ordered by: _____
HAROLD J. SINGER
EXECUTIVE OFFICER

Dated: March 14, 2007

Attachments: A. Tables No. 1 through 5
B. General Provisions for Monitoring and Reporting

**Table No. 1
Influent and Effluent**

Parameter	Sampling Frequency (Influent)	Sampling Frequency (Effluent)	Sampling Frequency (Effluent to Nebeker Ranch)	Type of Sample
pH	W	W	None	Grab
Biochemical Oxygen Demand (BOD)	M	M	M	24-hour composite
Carbonaceous BOD	M	M	M	24-hour composite
Chemical Oxygen Demand	M	M	M	24-hour composite
Total Organic Carbon	Q	Q	None	24-hour composite
Methylene Blue Active Substances	Q	Q	None	24-hour composite
Kjeldahl Nitrogen	Q	Q	M	24-hour composite
Nitrate Nitrogen	Q	Q	M	24-hour composite
Nitrite Nitrogen	Q	Q	M	24-hour composite
Ammonia Nitrogen	Q	Q	None	24-hour composite
Chloride	Q	Q	None	24-hour composite
Sodium	A	Q	None	24-hour composite
Sulfate	A	Q	None	24-hour composite
Calcium	A	Q	None	24-hour composite
Magnesium	A	Q	None	24-hour composite
Total Dissolved Solids	A	Q	None	24-hour composite
Haloacetic acids (HAA5)	A	Q	None	Grab
Total Trihalomethanes (THMs)	A	Q	None	Grab
N-Nitrosodimethylamine (ND)	A	Q	None	24-hour composite
Total Petroleum Hydrocarbons	Y	Y	None	Grab
Total chromium	Y	Y	None	24-hour composite
Hexavalent chromium	Y	Y	None	Grab
Total Cyanides	Y	Y	None	24-hour composite
Total Phenols	Y	Y	None	24-hour composite
Volatile Organics	Y	Y	None	Grab
Semivolatile Organics	Y	Y	None	24-hour composite
Heavy Metals	Y	Y	None	24-hour composite
Methyl Tertiary Butyl Ether	Y	Y	None	Grab

W=Weekly, M=Monthly, Y = Annually, S =

**Table No. 2
Lancaster Water Reclamation Plant Site**

Parameter	Sampling Frequency			
	Middle Aquifer	Upper Aquifer	Perched Groundwater Wells	Upper Aquifer
	Water Supply Well	Existing Surface Impoundments (MW15, MW16, MW17, MW115, MW117, MW119, MW207 and MW208)	Existing Surface Impoundments (MW107, MW114, MW116 and MW118)	Proposed Storage Reservoirs (MW209 and Additional Required Monitoring Wells)
pH	S	S	S	Q
Total Organic Carbon	S	S	S	Q
Methylene Blue Active Substances	S	S	S	Q
Kjeldahl Nitrogen	S	S	S	Q
Nitrate Nitrogen	S	S	S	Q
Nitrite Nitrogen	S	S	S	Q
Ammonia Nitrogen	S	S	S	Q
Chloride	S	S	S	Q
Sodium	S	S	S	Q
Sulfate	S	S	S	Q
Calcium	S	S	S	Q
Magnesium	S	S	S	Q
Total Dissolved Solids	S	S	S	Q
Haloacetic acids (HAA5)	Y	Y	Y	Y
Total Trihalomethanes (THMs)	Y	Y	Y	Y
N-Nitrosodimethylamine (NDMA)	Y	Y	Y	Y
Total Petroleum Hydrocarbons	Y	Y	Y	Y
Total chromium	Y	Y	Y	Y
Hexavalent chromium	Y	Y	Y	Y
Total Cyanides	Y	Y	Y	Y
Total Phenols	Y	Y	Y	Y
Volatile Organics	Y	Y	Y	Y
Semivolatile Organics	Y	Y	Y	Y
Heavy Metals	Y	Y	Y	Y
Methyl Tertiary Butyl Ether	Y	Y	Y	Y

Y = Annually, S = Semiannually and Q = Quarterly

**Table No. 3
Eastern Agricultural Site**

Parameter	Sampling Frequency
	Upper Aquifer
	Existing Monitoring Wells No. MW30, MW31, SW30, SW31 and SW32, and Additional Required Monitoring Wells
pH	Q
Total Organic Carbon	Q
Methylene Blue Active Substances	Q
Kjeldahl Nitrogen	Q
Nitrate Nitrogen	Q
Nitrite Nitrogen	Q
Ammonia Nitrogen	Q
Chloride	Q
Sodium	Q
Sulfate	Q
Calcium	Q
Magnesium	Q
Total Dissolved Solids	Q
Haloacetic acids (HAA5)	Y
Total Trihalomethanes (THMs)	Y
N-Nitrosodimethylamine (NDMA)	Y
Total Petroleum Hydrocarbons	Y
Total chromium	Y
Hexavalent chromium	Y
Total Cyanides	Y
Total Phenols	Y
Volatile Organics	Y
Semivolatile Organics	Y
Heavy Metals	Y
Methyl Tertiary Butyl Ether	Y

Y = Annually, S = Semiannually and Q = Quarterly

**Table No. 4
Piute Pond Area**

Parameter	Piute Pond Wells		Piute Pond Peripheral Wells		
	Upper Aquifer	Shallow Groundwater	Upper Aquifer		Shallow Groundwater
	MW18	MW108, MW120, MW122, MW124, MW125, MW203 and	MW206	MW211	MW202, MW205 and MW212
pH	S	2	S	2	2
Total Organic Carbon	S	2	S	2	2
Methylene Blue Active Substances	S	2	S	2	2
Kjeldahl Nitrogen	S	2	S	2	2
Nitrate Nitrogen	S	2	S	2	2
Nitrite Nitrogen	S	2	S	2	2
Ammonia Nitrogen	S	2	S	2	2
Chloride	S	2	S	2	2
Sodium	S	2	S	2	2
Sulfate	S	2	S	2	2
Calcium	S	2	S	2	2
Magnesium	S	2	S	2	2
Total Dissolved Solids	S	2	S	2	2
Haloacetic acids (HAA5)	Y	2	Y	2	2
Total Trihalomethanes (THMs)	Y	2	Y	2	2
N-Nitrosodimethylamine (NDMA)	Y	2	Y	2	2
Total Petroleum Hydrocarbons	Y	2	Y	2	2
Total chromium	Y	2	Y	2	2
Hexavalent chromium	Y	2	Y	2	2
Total Cyanides	Y	2	Y	2	2
Total Phenols	Y	2	Y	2	2
Volatile Organics	Y	2	Y	2	2
Semivolatile Organics	Y	2	Y	2	2
Heavy Metals	Y	2	Y	2	2
Methyl Tertiary Butyl Ether	Y	2	Y	2	2

Y = Annually, S = Semiannually and Q = Quarterly

⁴ Monitoring shall continue at the specified frequency until a minimum of four samples have been analyzed for this constituent. Thereafter, the wells shall be sampled for field parameters at a frequency of once every two year.

**Table No. 5
Nebeker Ranch**

Parameter	Sampling Frequency
	MW10, MW12, MW13 and MW14
pH	S
Total Organic Carbon	S
Methylene Blue Active Substances	S
Kjeldahl Nitrogen	S
Nitrate Nitrogen	S
Nitrite Nitrogen	S
Ammonia Nitrogen	S
Chloride	S
Sodium	S
Sulfate	S
Calcium	S
Magnesium	S
Total Dissolved Solids	S
Haloacetic acids (HAA5)	Y
Total Trihalomethanes (THMs)	Y
N-Nitrosodimethylamine (NDMA)	Y
Total Petroleum Hydrocarbons	Y
Total chromium	Y
Hexavalent chromium	Y
Total Cyanides	Y
Total Phenols	Y
Volatile Organics	Y
Semivolatile Organics	Y
Heavy Metals	Y
Methyl Tertiary Butyl Ether	Y

Y = Annually, S = Semiannually and Q = Quarterly

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

GENERAL PROVISIONS
FOR MONITORING AND REPORTING

1. SAMPLING AND ANALYSIS

- a. All analyses shall be performed in accordance with the current edition(s) of the following documents:
 - i. Standard Methods for the Examination of Water and Wastewater
 - ii. Methods for Chemical Analysis of Water and Wastes, EPA
- b. All analyses shall be performed in a laboratory certified to perform such analyses by the California State Department of Health Services or a laboratory approved by the Regional Board Executive Officer. Specific methods of analysis must be identified on each laboratory report.
- c. Any modifications to the above methods to eliminate known interferences shall be reported with the sample results. The methods used shall also be reported. If methods other than EPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Regional Board prior to use.
- d. The Discharger shall establish chain-of-custody procedures to insure that specific individuals are responsible for sample integrity from commencement of sample collection through delivery to an approved laboratory. Sample collection, storage, and analysis shall be conducted in accordance with an approved Sampling and Analysis Plan (SAP). The most recent version of the approved SAP shall be kept at the facility.
- e. The Discharger shall calibrate and perform maintenance procedures on all monitoring instruments and equipment to ensure accuracy of measurements, or shall insure that both activities will be conducted. The calibration of any wastewater flow measuring device shall be recorded and maintained in the permanent log book described in 2.b, below.
- f. A grab sample is defined as an individual sample collected in fewer than 15 minutes.
- g. A composite sample is defined as a combination of no fewer than eight individual samples obtained over the specified sampling period at equal intervals. The volume of each individual sample shall be proportional to the discharge flow rate at the time of sampling. The sampling period shall equal the discharge period, or 24 hours, whichever period is shorter.

2. OPERATIONAL REQUIREMENTS

a. Sample Results

Pursuant to California Water Code Section 13267(b), the Discharger shall maintain all sampling and analytical results including: strip charts; date, exact place, and time of sampling; date analyses were performed; sample collector's name; analyst's name; analytical techniques used; and results of all analyses. Such records shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.

b. Operational Log

Pursuant to California Water Code Section 13267(b), an operation and maintenance log shall be maintained at the facility. All monitoring and reporting data shall be recorded in a permanent log book.

3. REPORTING

a. For every item where the requirements are not met, the Discharger shall submit a statement of the actions undertaken or proposed which will bring the discharge into full compliance with requirements at the earliest time, and shall submit a timetable for correction.

b. Pursuant to California Water Code Section 13267(b), all sampling and analytical results shall be made available to the Regional Board upon request. Results shall be retained for a minimum of three years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Regional Board.

c. The Discharger shall provide a brief summary of any operational problems and maintenance activities to the Board with each monitoring report. Any modifications or additions to, or any major maintenance conducted on, or any major problems occurring to the wastewater conveyance system, treatment facilities, or disposal facilities shall be included in this summary.

d. Monitoring reports shall be signed by:

i. In the case of a corporation, by a principal executive officer at least of the level of vice-president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates;

ii. In the case of a partnership, by a general partner;

iii. In the case of a sole proprietorship, by the proprietor; or

- iv. In the case of a municipal, state or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.
- e. Monitoring reports are to include the following:
 - i. Name and telephone number of individual who can answer questions about the report.
 - ii. The Monitoring and Reporting Program Number.
 - iii. WDID Number.
- f. Modifications

This Monitoring and Reporting Program may be modified at the discretion of the Regional Board Executive Officer.

4. NONCOMPLIANCE

Under Section 13268 of the Water Code, any person failing or refusing to furnish technical or monitoring reports, or falsifying any information provided therein, is guilty of a misdemeanor and may be liable civilly in an amount of up to one thousand dollars (\$1,000) for each day of violation under Section 13268 of the Water Code.

x:PROVISIONS WDRS

file: general pro mmp

