

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION
BOARD ORDER R6V-2011-0012
WDID 6B190107069
WASTE DISCHARGE REQUIREMENTS
AND
WATER RECYCLING REQUIREMENTS
FOR
COUNTY SANITATION DISTRICT NO. 20 OF LOS ANGELES COUNTY
PALMDALE WATER RECLAMATION PLANT**

_____Los Angeles County_____

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

1. Discharger

The County Sanitation District No. 20 of Los Angeles County (District) owns and operates the Palmdale Water Reclamation Plant (Reclamation Plant). Effluent from the Reclamation Plant is reused at the Agricultural Site owned by the City of Los Angeles World Airports (LAWA). The District leases the Agricultural Site from LAWA to use recycled waste water for irrigation of crops. The District stores recycled water at the Reservoir Storage Site for reuse at the Agricultural Site.

This Water Board Order (Order) supersedes and rescinds previous Order Nos. 6-00-57, 6-00-57-A01, 6-00-57-A02, 6-00-57-A03, and 6-00-57-A04.

2. Definitions

Discharger - For the purposes of this Order, the District is referred to as the "Discharger," and for the purposes of water recycling, the District is the "Producer," "Distributor," and "Primary User." The Discharger is responsible for compliance and monitoring prescribed by waste discharge requirements (WDRs) and water recycling requirements (WRRs) adopted by the Water Board for this Facility.

Facility – For the purposes of this Order, the Reclamation Plant, Agricultural Site and Storage Reservoir Site are collectively the "Facility."

Reclamation Plant – For the purposes of this Order, the secondary treatment facility and all supporting infrastructure comprise the "Secondary Treatment Reclamation Plant." The "Tertiary Treatment Reclamation Plant" is the tertiary treatment facility and all supporting infrastructure. The Secondary Treatment Reclamation Plant and the Tertiary Treatment Reclamation Plant are collectively the "Reclamation Plant."

Recycled Water - For the purposes of this Order, recycled water is treated effluent from the Reclamation Plant that complies with the criteria and treatment levels for the production of recycled water and its uses specified in California Code of Regulations, title 22, division 4, chapter 3, article 3, section 60303 et seq. and adopted orders.

User - For the purposes of this Order, a user of recycled water either directly or indirectly manages recycled water-use areas and is subject to the requirements in California Code of Regulations, title 22, section 60301 et seq. and orders adopted by the Water Board. For the purposes of this Order, the District is the Primary User of recycled water and responsible for compliance with water recycling requirements (WRRs) adopted by the Water Board, including monitoring and reporting requirements.

Secondary Users - For the purposes of this Order, the entities who are under contract to manage day-to-day farming operations are "Secondary Users." This Order requires the Discharger to ensure that Secondary Users comply with the Statewide Reclamation Criteria established pursuant to Water Code, section 13521 and the requirements of this Order. The Discharger currently has agreements with two farming entities, Harrington Farms and Antelope Valley Farming LLC. The Discharger is required under the terms of this Order to notify the Water Board of any changes in Secondary Users.

3. Locations

a. Secondary Treatment Reclamation Plant and Agricultural Site

The Secondary Treatment Reclamation Plant and the Agricultural Site are located approximately 2 miles northeast of central Palmdale as shown in Attachment A, which is made part of this Order. The Secondary Treatment Reclamation Plant consists of primary and secondary treatment facilities. The primary treatment facility are located at the 30th Street East site as shown on Attachment B, which is made part of this order. Secondary treatment is provided by oxidation ponds located at both the 30th and 40th Street East sites. The Agricultural Site is located east and north of the 40th Street East site as shown on Attachment C, which is made a part of this Order.

b. Storage Reservoir Site

The Storage Reservoir Site is located approximately 10 miles northeast of the Reclamation Plant and is adjacent to the intersection of 120 Street East and Avenue L as shown on Attachment A.

c. Tertiary Treatment Reclamation Plant

The Tertiary Treatment Reclamation Plant is located adjacent to the primary

treatment facility at the 30th Street East site.

4. Land Ownership and Future Uses of LAWA Owned Land

The Reclamation Plant and Storage Reservoir Site are located on land owned by the Discharger. The Agricultural Site (referred to in previous orders as the Effluent Management Site) is located on land owned by LAWA. LAWA plans on eventually developing the Agricultural Site as the Palmdale Airport. Development of the Palmdale Airport would impact the leased land's current use for treated waste water recycling and would require the Discharger to establish new reuse areas.

5. Order History

The Water Board previously established WDRs for the Discharger under Order No. 6-93-18, which was adopted on March 11, 1993. Order No. 6-90-64, adopted on October 11, 1990, established WRRs for LAWA. Order No. 6-00-57, which established combined WDRs and WRRs, was adopted on June 14, 2000 and amended as described below.

<u>Order No.</u>	<u>Date</u>	<u>Purpose</u>
6-00-57	June 14, 2000	Revised and combined prior WDRs/WRRs
6-00-57-A01	April 14, 2004	Expanded area of Agricultural Site (formerly Effluent Management Site)
6-00-57-A02	July 26, 2004	Named all users of treated waste water
6-00-57-A03	July 13, 2005	Expanded area of Agricultural Site (formerly Effluent Management Site)
6-00-57-A04	August 29, 2007	Added Storage Reservoir Site and Tertiary Treatment Reclamation Plant

Cleanup and Abatement Order (CAO) No. R6V-2003-056 was adopted by the Water Board on November 12, 2003. The CAO requires the Discharger to abate the discharge contributing to nitrate pollution and to cleanup pollution and degradation of groundwater caused by the discharge. Cease and Desist Order (CDO) No. R6V-2004-0039 was adopted by the Water Board on October 13, 2004. The CDO requires the Discharger to reduce and abate land spreading disposal of effluent and sets discharge limits on total nitrogen.

6. Reason for Action

The Water Board is adopting the current WDRs/WRRs to combine previous amendments and to update requirements based on current and planned Reclamation Plant upgrades and water recycling practices.

7. Facility

- a. Secondary Treatment Reclamation Plant – The Secondary Treatment Reclamation Plant provides primary and secondary treatment (aerated oxidation ponds) for up to 15 million gallons per day (MGD) of waste water. The Secondary Treatment Reclamation Plant currently treats approximately 10 MGD and serves approximately 140,000 people. Secondary waste water treatment is provided by primary sedimentation tanks, anaerobic digesters, and unlined oxidation ponds. Additional treatment is provided by the oxidation pond aeration system and disinfection facilities (chlorination) as shown in the Facilities Process Schematic included as Attachment D, which is made a part of this Order. The existing oxidation ponds will continue to operate during start-up and testing of the Tertiary Treatment Reclamation Plant.
- b. Agricultural Site (formerly Effluent Management Site) - Secondary-level treated, disinfected effluent is currently reused at the Agricultural Site. The Agricultural Site consists of approximately 2,680 acres used for irrigated agriculture in Township 6 North, Range 11 West, San Bernardino Baseline and Meridian: sections 10 and 15 and portions of sections 9, 11, 14, and 16 as shown on Attachment C.
- c. Storage Reservoir Site - Two storage reservoirs (Reservoirs Nos. 1 and 2) have been completed and are in use at the Storage Reservoir Site. The two reservoirs have a total storage capacity of approximately 910 million gallons (MG). Secondary treated waste water is stored in the storage reservoirs for use as irrigation water at the Agricultural Site during summer months. After the completion of the Tertiary Treatment Reclamation Plant, the storage reservoirs will be used to store tertiary treated waste water for reuse. Projections indicate that an additional 1,540 MG of storage capacity may be needed by the year 2017. Additional reservoirs are planned to meet this projected need. The Storage Reservoir Site is shown on Attachment E, which is made a part of this Order.
- d. Tertiary Treatment Reclamation Plant - The Tertiary Treatment Reclamation Plant is designed to upgrade the level of treatment and to serve an estimated population of 170,000. Construction on the Tertiary Treatment Reclamation Plant began in September 2008. Start-up of the plant is planned for July 2011. Construction will proceed in two steps, Phase I, which will have a treatment capacity of 12 MGD, and Phase II, which will increase the treatment capacity to 15 MGD to meet projected population growth. The effluent generated by the Tertiary Treatment Reclamation Plant will be disinfected tertiary recycled water, as shown in the Tertiary Treatment Reclamation Plant Process Schematic included as Attachment F, which is made a part of this Order.

8. Biosolids

- a. Secondary Treatment Reclamation Plant - Sludge from the anaerobic digesters is dried in the concrete-lined drying beds, stockpiled, and hauled off site for disposal.
- b. Tertiary Treatment Reclamation Plant - The Tertiary Treatment Reclamation Plant design includes dissolved air flotation units, which will thicken waste activated sludge. Filter backwash will be routed to the sedimentation tanks. Existing and new digesters will process both primary sludge and thickened waste activated sludge. Digested sludge will be mechanically dewatered and/or solar dried in existing sludge drying beds before offsite disposal or reuse. The two existing sludge drying beds may continue to be used to dry dewatered sludge cake, to dry sludge generated during digester cleaning operations, and as a backup for mechanical dewatering. Each sludge drying bed is 0.2 acre in size and has a 4-inch thick, asphalt-concrete liner.

9. California Code of Regulations, Title 27 Requirements

California Water Code section 13172 directs the State Water Resources Control Board (State Water Board) to write regulations for waste disposal sites to protect water quality "except for sewage treatment plants..." Those regulations are now incorporated in the California Code of Regulations title 27 for waste disposal sites and surface impoundments. The Reclamation Plant has primary ponds for the treatment of the wastewater. These treatment ponds are exempt from title 27 under section 20090(a), and regulation of the treatment ponds under California Code of Regulations title 23 is appropriate.

The Reservoir Storage and Agricultural sites are not part of the treatment process, but are exempt under title 27 section 20090(h), which applies to recycling from waste. Additionally, the Storage Reservoir and Agricultural sites meet the exception requirements for waste water as contained in section 20090(b), that is:

- This Order issues waste discharge requirements for the sites;
- Discharges to these sites are in compliance with the applicable water quality control plan; and
- These discharges do not meet the specified hazardous waste criteria.

The conditions for exemption under section 20090(b) will be met with the adoption of this Order. Although historic application practices at the Agricultural Site has caused an exceedance of the *Water Quality Control Plan for the Lahontan Region Basin Plan* (Basin Plan) objective for nitrate in groundwater (see Finding No. 16), this Order contains requirements to ensure the Storage Reservoir and Agricultural sites do not create conditions that result in an exceedance of Basin Plan objectives.

Additionally, this Order and prior orders require the Discharger to implement measures that ensure that construction, operation, and monitoring at the Storage Reservoir and Agricultural sites are equivalent to title 27 requirements. The reservoirs have membrane liners designed to prevent releases and a vadose monitoring network to provide an early warning system for potential releases. This Order requires that the application rates at the Agricultural Site not exceed agronomic rates. Additionally, this Order requires the continued operation of the existing vadose zone and groundwater monitoring networks at the Agricultural Site.

10. State Water Board Recycled Water Policy and Recycled Water Criteria

State Water Board Resolution No. 2009-0011, "Adoption of a Policy for Water Quality Control for Recycled Water," references and adopts the "State Water Resources Control Board Recycled Water Policy" (Recycled Water Policy). The Recycled Water Policy provides direction to the State and Regional Water Boards regarding the appropriate criteria to be used in issuing permits for recycled water projects. The Recycled Water Policy describes permitting criteria intended to streamline, and provide consistency for, the permitting of the vast majority of recycled water projects. This Order implements the Recycled Water Policy.

This Order does not permit landscape irrigation or groundwater recharge; therefore, the relevant paragraphs of the Recycled Water Policy are Paragraph 6, *Salt/Nutrient Management Plans*, which is addressed in requirement I.B.17 of this Order and Paragraph 9, *Antidegradation*, which is addressed in Finding No. 20 of this Order.

11. Recycled Water Criteria

The California Department of Public Health's (DPH) established criteria for using recycled water. These criteria are codified in California Code of Regulations, article 3 of chapter 3 of division 4, title 22, section 60303 et seq. These criteria specify that fodder and fiber crops can be irrigated with a minimum of "undisinfected secondary recycled water." (California Code of Regulations, title 22, § 60304(d)(4)). Section 60304 also specifies that water used for dust control and soil compaction must be "disinfected secondary-23 recycled water¹." (California Code of Regulations, title 22, § 60307(b)(4) and (6)). Since May 2004, the Discharger has disinfected all effluent with sodium hypochlorite. Therefore, recycled water quality used for fodder and fiber crops meets the higher water quality specified for dust control and construction soil

¹ Disinfected secondary-23 recycled water means recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a most probable number (MPN) of 23 per 100 milliliters utilizing the bacteriological results of the last seven days for which analysis have been completed, and the number of total coliform bacteria does not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30-day period.

compaction applications. This Order requires producers and users of recycled water to comply with applicable California Code of Regulations, title 22 criteria.

The WRRs specified in this Order are consistent with the current DPH Water Recycling Criteria, which remain in effect except as amended herein.

12. Authorized Water Recycling Sites and Recycled Water Uses

This Order authorizes the Discharger and Secondary Users to:

- a. Discharge disinfected secondary-treated effluent to Storage Reservoirs Nos. 1 and 2 until July 25, 2011, and thereafter discharge only tertiary-treated effluent in the reservoirs.
- b. Reuse tertiary-treated and disinfected secondary-23 recycled water for non-potable uses at the Discharger's 30th Street East site, 40th Street East site, and Storage Reservoir Site. The non-potable uses include facility washdown and construction-related soil compaction and dust control. All non-potable uses must be in accordance to California Code of Regulations, title 22, section 60301 et seq.
- c. Reuse disinfected secondary-level treated effluent at agronomic rates to the Agricultural Site for crop irrigation. The Agricultural Site location is shown in Attachment C and includes the following:
 - i. southwest and southeast quarters of Section 9;
 - ii. all of Section 10;
 - iii. northwest and southwest quarters of Section 11;
 - iv. all of Section 14 excluding the northeast quarter of the northeast quarter;
 - v. all of Section 15;
 - vi. northeast quarter of Section 16.

Portions of the northeast quarter of Section 14 contain the Little Rock Creek drainage. Agricultural reuse is not authorized in the portion of the Agricultural Site that drains to Little Rock Creek.

13. Effluent Quality

Table 1 summarizes 2009 effluent quality data for the existing Secondary Treatment Reclamation Plant and expected quality for the Tertiary Treatment Reclamation Plant. The data for the Tertiary Treatment Reclamation Plant is based on design data for the plant. As stated in the Discharger's 2025 Facilities Plan/Environmental Impact Report, the Tertiary Treatment Reclamation Plant replaces the secondary treatment with the activated sludge secondary treatment process. This process includes nitrification/denitrification capability. The

combination of this activated sludge secondary treatment process and utilization of agronomic rates is needed to implement the Discharger's *Containment and Remediation Plan*, dated September 15, 2004, which was accepted by the Water Board as an interim action to cleanup groundwater containing excessive nitrates. The tertiary process will produce effluent with higher concentrations of nitrate as N than the secondary process, but the total of nitrogen, in the effluent will be significantly lower.

Table 1: Concentrations in Effluent (Annual Average)

Parameters²	Secondary Treatment Reclamation Plant Effluent	Tertiary Treatment Reclamation Plant Effluent (Expected)
total coliform (MPN/100 ml)	<47	<2.2
turbidity (NTUs)	na ³	<5
suspended solids (mg/L)	86	<5
TDS (mg/L)	590	550
soluble biochemical oxygen demand (mg/L), filtered	<16	<5
ammonia (mg/L as N)	21	1
Kjeldahl nitrogen (mg/L)	33	2
nitrate (mg/L as N)	<0.88	8
nitrite (mg/L as N)	1.1	1

14. Geology and Hydrogeology

The Antelope Valley Groundwater Basin (Department of Water Resource [DWR] Groundwater Basin 6-44) is located in a structural basin between the Garlock and San Andreas faults. Alluvial and lacustrine deposits up to 5,000 feet thick form the water-bearing units that overlie consolidated bedrock. The alluvial materials consist of relatively unconsolidated clay, silt, and sand.

In the Palmdale area of the Antelope Valley Groundwater Basin, the saturated zone is divided into two general hydrogeologic units: the unconfined to semiconfined upper aquifer, referred to as the "Principal Aquifer" and the confined, deeper aquifer, referred to as the "Deep Aquifer." The two hydrogeologic units are separated by a thick, fine-grained lacustrine unit.

The Principal Aquifer is the primary source of groundwater withdrawals in the Groundwater Basin. The depth of the Principal Aquifer in the vicinity of Reclamation

² Units: mg/L = milligrams/liter; µg/L = micrograms/liter; N = nitrogen; MPN/100 ml = most probable number/100 milliliters; NTU = nephelometric turbidity units;

³ Not sampled. There is no turbidity limitation for secondary-23 recycled water.

Plant is approximately 300 feet below ground surface and the groundwater gradient is generally to the north. Water supply wells for the Palmdale Water District are located southwest of the Reclamation Plant and create a cone of depression in that area. The screened intervals for the supply wells are from 500 to 900 feet below ground surface.

The Storage Reservoir Site is underlain by approximately 300 feet of clay, silt, and sand deposits, which overlie fractured granitic bedrock. Groundwater is present in the fractured bedrock, which appears to be a low-yield aquifer. The regional aquifer is present in alluvium approximately 0.5 miles west of the site.

An unnamed fault is located near the upgradient (south) edge of the Storage Reservoir Site.⁴ The Discharger's Report of Waste Discharge states the fault is not a potentially (or recently) active fault as defined under the Public Resources Code, division 2, chapter 7.5, section 2622 (Alquist-Priolo Earthquake Fault Zoning Act).

15. Groundwater Quality

Background water quality in the Palmdale area is generally excellent with an average 350 milligrams/liter (mg/L) of total dissolved solids (TDS) and 1.0 mg/L of nitrate as nitrogen (N)⁵. Groundwater monitoring for the Reclamation Plant and Agricultural Site indicates that the background TDS concentrations are less than 300 mg/L and nitrate concentrations are less than 3 mg/L.

The only data on background groundwater quality at the Storage Reservoir Site is from a single sample collected in 2007 from a temporary monitoring well screened in the fractured bedrock. This sample contained TDS at a concentration of 346 mg/L and nitrate as N at a concentration of 0.19 mg/L.

16. Groundwater Quality Degradation

Monitoring wells in the vicinity of the Reclamation Plant and Agricultural Site show elevated TDS and nitrate concentrations that appear to be the result of the use and disposal of treated waste water at application rates higher than agronomic rates. To address these impacts, the Water Board adopted enforcement orders described in Finding No. 5.

Table 2 is based on the 2009 Annual Report for the Reclamation Plant. The table includes annual (four quarters) average concentrations of nitrate and TDS in the Discharger's groundwater monitoring wells that contained nitrate as N, above the

⁴Bloyd, R.M., 1967, Water Resources of the Antelope Valley - East Kern Water Agency, California, U.S. Geological Survey Open-File Report

⁵Duell, L. F. Jr., 1987, Geohydrology of the Antelope Valley Area California and Design for a Groundwater Quality Monitoring Network, U.S. Geological Survey-Water Resources Investigations Report 84-4081.

maximum contaminant level (MCL) of 10 mg/L. Four of these wells also have TDS concentrations above the maximum recommended, secondary MCL of 500 mg/L, but below the upper, secondary MCL.

Table 2: 2009 Average Groundwater Quality in Wells

Well ID	Location	TDS (mg/L)	Nitrate (mg/L)
MW-4	Section 9	612	15.0
MW-22	Section 4	650	12.9
MW-40	Section 17	376	10.4
MW-52	Section10	449	12.0
MW-53	Section 9	714	15.6
MW-54	Section 9	532	10.3

Trends in nitrate and TDS concentrations in these seven wells appear to be relatively stable since 2008 when MW-40 through MW-56 were added to the monitoring network.

Additionally, monitoring data from 2000 to 2009 show that two other monitoring parameters have been detected in groundwater: bis(2-ethylhexyl)phthalate [synonyms: di(2-ethylhexyl)phthalate, DEHP] and total petroleum hydrocarbons (TPH).

DEHP, a priority pollutant, is a plasticizer commonly found in waste water influent. DEHP has a strong affinity to organic carbon and adsorbs to sludge during sewage treatment process. DEHP has been sporadically detected in the groundwater monitoring wells at concentrations above its reporting limit. DEHP reporting limits have ranged from 1 to 5 µg/L. Since 2000, DEHP has, on occasion, been detected at relatively low concentrations in 22 of the groundwater wells that are sampled annually for this constituent. DEHP was detected above its MCL of 4.0 µg/L in MW-2 and MW-4 (respective concentrations of 5.4 and 4.2 µg/L) during the annual sampling event in 2003, but has not been reported in these wells during subsequent events. During the 2009 annual sampling event, DEHP was only detected at trace concentrations (below the practical quantitation limit but above the method detection limit) in two wells. At this time, the source of DEHP detected in groundwater is not known. This Order includes a Monitoring Reporting Program that will further evaluate the occurrence of DEHP in these wells.

TPH has been detected during the annual analysis of groundwater monitoring wells at concentrations as high as 950 µg/L. These detections were reported during the period of 2000 to 2005 when the reporting limit for TPH in groundwater ranged from 50 to 100 µg/L. TPH has not been reported above its reporting limit since 2005 when the Discharger began using a higher reporting limits ranging from 300 of 700 µg/L for

TPH. From 2000 to 2005, TPH has been reported in effluent at concentrations as high as 4,500 µg/L. Since 2005 the reporting limits for TPH in effluent has ranged from 1,070 to 19,400 µg/L. There have been no reported detections in effluent above these varied limits since 2005. This Order includes a Monitoring and Reporting Program that specifies reporting limits for TPH as gasoline and TPH as diesel in groundwater. These required reporting limits will help in the evaluation of TPH in effluent and groundwater beneath the Facility.

17. Receiving Waters

The receiving waters are the groundwaters of the Antelope Valley Groundwater Basin (DWR Basin 6-44).

18. Lahontan Basin Plan

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

19. Groundwater Beneficial Uses

The beneficial uses of the groundwaters of the Antelope Valley Groundwater Basin 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).

20. Maintenance of High Quality Waters in California

Historical application of treated waste water above agronomic rates at the Agricultural Site has resulted in degradation of groundwater quality with respect to nutrients (i.e., ammonia, Kjeldahl nitrogen, nitrate as N, and nitrite as N) and salts (i.e., TDS) as described in Finding No. 16 of this Order.

The uses of recycled water as permitted in this Order will not result in further degradation of the existing groundwater quality with respect to nutrients. The requirements described under I.B.3 of this Order require that the Discharger apply recycled water at agronomic rates in terms of both water application and nutrient application. Additionally, the Tertiary Treatment Reclamation Plant will generate recycled water with a lower total nitrogen content (i.e., the cumulative content of ammonia, Kjeldahl nitrogen, nitrate as N, and nitrite as N will be reduced from approximately 56 mg/L produced by the Secondary Treatment Reclamation Plant

to approximately 12 mg/L).

The uses of recycled water as permitted in this Order may result in additional degradation of groundwater quality with respect to TDS. However, the degradation will be less than from historical over application of waste water because this Order requires that the Discharge apply recycled water at agronomic rates. Additionally, the Tertiary Treatment Reclamation Plant will generate recycled water with a slightly lower TDS concentrations than the Secondary Treatment Reclamation Plant.

The Antelope Valley groundwater basin is estimated to have 68 million acre-feet of storage, of which 13 million acre-feet is available. TDS concentrations in the groundwater basin range from 200 to 800 mg/L [Department of Water Resources Bulletin 118, 2004], with an average of 300 mg/L. The California Code of Regulations, title 22 specifies a recommended secondary MCL for TDS of 500 mg/l and the secondary MCL upper limit of 1,000 mg/L.

The average TDS concentration in the recycled water is currently 590 mg/L. The TDS concentration is expected to be reduced to approximately 550 mg/l after the Tertiary Treatment Reclamation Plant is operational in July 2011. The expected TDS concentration is only slightly above the secondary MCL of 500 mg/L and significant below the upper secondary MCL of 1,000 mg/L. The application of recycled water from the Tertiary Treatment Reclamation Plant at agronomic rates will minimize further degradation of existing groundwater quality. Additionally, requirements of I.B.17. of this Order requires that the Discharger develop and/or participate in the development of a salt/nutrient management plan for the Antelope Valley that is consistent with Paragraph 6 of the Recycled Water Policy.

State Water Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," states:

- "1. Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that a change will be consistent with the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.*
- 2. Any activity which produces or may produce a waste...and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to*

assure that (a) pollution or nuisance will not occur, and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained."

This Order is consistent with Resolution No. 68-16 for the following reasons.

- a. State Water Board, through Resolution No. 77-1, has identified the beneficial use of recycled water for the people for the State, and directs Regional Water Boards to encourage the use of recycled water in water-short areas of the State. The Antelope Valley is located in a water-short area of the State. The current demand for potable water in the Antelope Valley exceeds supply in the region, and by 2035 this demand is expected to double. The people of the State will benefit from the use of recycled water in the Antelope Valley area, where recycled water will supplement and/or replace existing water supplies (e.g., imported surface waters and overdraft of groundwaters).
- b. This Order prohibits the use of recycled water that causes a pollution or nuisance.
- c. This Order requires the District to implement control measures to minimize degradation of waters of the State. The control measures include (1) applying irrigation within agronomic rates to reduce the potential for runoff and increased nutrients into the groundwater; and (2) developing and implementing a salt/nutrient management plan to reduce the potential for salt and nutrient loading, thereby minimizing the impacts to groundwater quality. The control measures will ensure that the discharge will result in the best practicable control for the maximum benefit of the people of the State, assure that a pollution or nuisance will not occur, and that the highest water quality consistent with maximum benefit to the people of the State will be maintained.
- d. The waste discharge requirements adopted as part of this Order will ensure that the discharge will result in the best practicable control for the maximum benefit of the people of the State to assure that a pollution or nuisance will not occur and that the highest water quality consistent with maximum benefit to the people of the State will be maintained. The control measures will prevent the groundwater quality within the Antelope Valley from exceeding the standards established in existing applicable policies.
- e. The use of recycled water as authorized by this Order will not result in water quality less than that prescribed in applicable policies.

21. California Environmental Quality Act (CEQA)

a. Secondary Treatment Reclamation Plant, Storage Reservoirs and Agricultural Site

This order governs the continued operation of the Reclamation Plant and Agricultural Site. The continued operation of the Reclamation Plant and Agricultural Site are categorically exempt from provisions of the CEQA (Public Resources Code, section 21000 et seq.) in accordance with CEQA Guidelines, section 15301. These are existing uses that involve no expansion of their existing use.

To eliminate the application of treated waste water above agronomic rates at the Agricultural Site, the Discharger is storing secondary treated effluent in two reservoirs at the Storage Reservoir Site. The construction of the storage reservoirs required an addendum to the District's Environmental Impact Report (EIR) for its 2025 Plan. The Notice of Determination for the EIR addendum was issued July 26, 2007. The reservoirs were constructed in 2009 using synthetic liners and construction practices that will limit the amount and rate of leakage from the reservoirs such that there will be no measurable affect on groundwater quality.

b. Tertiary Treatment Reclamation Plant

On October 18, 2005, the District certified an Environmental Impact Report (EIR) (SCH No. 2004091123) for its 2025 Plan, which included the construction of an activated-sludge secondary treatment with nitrification/denitrification capability, tertiary treatment, and reservoir storage. The Water Board has considered the environmental document and incorporated mitigation measures within its jurisdiction into this Order to mitigate the project's significant impacts that relate to water quality. Attachment G, which is made part of this Order, summarizes the project's significant impacts that relate to water quality, the mitigation measures, and the Water Board's findings regarding these measures. This Order and the accompanying Monitoring and Reporting Program will ensure compliance with required mitigation measures. The Water Board will file a Notice of Determination within five days from the issuance of this Order.

22. Notification of Interested Parties

The Water Board has notified the Discharger and interested persons of its intent to revise WDRs/WRRs for the discharge.

23. Consideration of Public Comments

The Water Board, in a public meeting held March 9, 2011, heard and considered all

comments pertaining to the discharge.

24. Consideration of Water Code Section 13241 Factors

Water Code, section 13263 requires that the Water Board, when prescribing WDRs, take into consideration six specific factors in Water Code, section 13241. The Board has considered these factors as follows.

- a. Past, Present, and Probable Future Beneficial Uses of Water - The receiving waters are the groundwaters of the Antelope Valley Groundwater Basin. The beneficial uses of the groundwater are described in Finding No. 19. The receiving water limits in this Order are to maintain the most sensitive beneficial uses: Municipal and Domestic Supply (MUN) and Agricultural Supply (AGR).
- b. Environmental Characteristics of the Hydrographic Unit under Consideration, Including the Quality of Water Available Thereto - Hydrogeologic characteristics of the Antelope Valley Groundwater Basin are described in Finding No. 14. Because of past and ongoing use of groundwater for domestic and agricultural purposes, the Groundwater Basin is in overdraft. Groundwater quality is described in Finding Nos. 15 and 16. In general, the groundwater quality is sufficient to support the beneficial uses of MUN and AGR.
- c. Water Quality Conditions that Could Reasonably Be Achieved Through the Coordinated Control of All Factors, Which Affect Water Quality in the Area - The current and future beneficial uses and existing water quality in the area will be maintained.
- d. Economic Considerations - This Order regulates the operation and upgrading the Discharger's Facility. The revenue sources for the upgrades are service charges and connection fees. The current service charge rate approximately \$381 per year. The state-wide median cost for waste water collection and treatment is \$290 per year.
- e. The Need for Developing Housing in the Region - The Discharger is committed to providing treatment capacity for new housing and will expand facilities with sufficient lead time to accommodate population growth. In addition, treated waste water recycling will help offset future demands on the limited supply of fresh water in the Palmdale area.
- f. The Need to Develop and Use Recycled Water - The water quality of the effluent after oxidation pond treatment limits potential reuses of the recycled water pursuant to California Code of Regulations, title 22. The Tertiary Treatment Reclamation Plant will upgrade the level of treatment and produce effluent that is acceptable for all uses described in California Code of Regulations, title 22, thus

maximizing potential reuse.

25. Requirement to Submit Technical and Monitoring Reports

A Monitoring and Reporting Program has been developed for this discharge and is incorporated into the requirements of this Order. The Monitoring and Reporting Program is necessary to ensure that the requirements of this Order are sufficient to protect groundwater quality.

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

I. DISCHARGE SPECIFICATIONS

A. Effluent Limitations

1. The flows of waste water to the oxidation ponds at Secondary Treatment Reclamation Plant and Storage Reservoir Site shall not exceed the following limits:

Average Daily Flow (MGD)⁶	Maximum Daily Flow (MGD)
15.0	37.5

2. The flows of waste water to the Tertiary Treatment Reclamation Plant shall not exceed the following limits:

Plant Development (Finding No. 7d)	Average Daily Flow (MGD)⁶	Maximum Daily Flow (MGD)
Phase I	12.0	30.0
Phase II	15.0	37.5

3. All effluent discharged from the existing Secondary Treatment Oxidation ponds shall not contain concentrations of parameters outside of the following limits:

⁶ The arithmetic mean of total daily flow values for each month.

Parameter	Daily Maximum	Monthly Mean ⁷	Instantaneous Minimum	Instantaneous Maximum
BOD ⁸	45 mg/L	30 mg/L	--	--
dissolved oxygen	--	--	1.0 mg/L	--
pH	--	--	6.0	9.0

4. All effluent supplied to uses that require tertiary recycled water, as specified in California Code of Regulations, title 22, article 3, shall be tertiary-treated effluent and shall not contain concentrations of parameters outside of the following limits:

Parameter	Daily Maximum	Weekly Mean ⁹	Monthly Mean ⁷	Instantaneous Minimum	Instantaneous Maximum
BOD ¹⁰	30 mg/L	15 mg/L	10 mg/L	--	--
MBAS ¹¹	2.0 mg/L	--	1.0 mg/L	--	--
dissolved oxygen	--	--	--	1.0 mg/L	--
pH	--	--	--	6.0	9.0

5. Effective as of July 25, 2011, all effluent discharged to the storage reservoirs as described in Finding No. 12.a. shall meet the limits in I.A.4.
6. All discharges of effluent to the Agricultural Site or other authorized water recycling sites shall meet the water quality specified in California Code of Regulations, title 22, article 3 for that particular use of recycled water.

B. Water Recycling Requirements

1. A new Engineering Report must be submitted to the Water Board and DPH for any material modification in the manner or method that recycled water is produced or used.
2. Until a new Engineering Report is submitted, the use of recycled water is limited to irrigation at agronomic rates at the Agricultural Site (described in Finding No. 12.c) and non-potable uses at the Discharger's 30th Street East site, 40th Street East site, and Storage Reservoir Site. The non-potable uses include facility

⁷ The arithmetic mean of laboratory results for 24-hour composite samples collected during a calendar month. The mean shall be calculated and reported in accordance with Section I.K.3 of the Monitoring and Reporting Program (MRP).

⁸ Biochemical oxygen demand (5 day, 20°C of a filtered sample).

⁹ The arithmetic mean of laboratory results for 24-hour composite samples collected during one week (7 days). The mean shall be calculated and reported in accordance with Section I.K.3 of the MRP.

¹⁰ Biochemical oxygen demand (5 day, 20°C of an unfiltered sample).

¹¹ Methylene blue active substances.

washdown, construction-related soil compaction, and dust control.

3. The Discharger shall not over apply recycled water above crop agronomic needs at the Agricultural Site. For nutrients, the agronomic rate is the rate of application of nutrients to plants that is necessary to satisfy the plants' nutritional requirements while strictly minimizing the amount of nutrients that pass below the root zone of the plants in accordance to the *Annual Cropping Plan* described in the Monitoring and Reporting Program (MRP). For water, the agronomic rate is the rate of application of irrigation water necessary for plant evapotranspiration, to prevent salinization of the root zone, for plant germination, for suppression of wind erosion, for frost protection, and to account for distribution uniformity. All reasonable efforts must be taken to ensure uniform distribution of the recycled water.
4. As described in California Code of Regulations, title 22, section 60304 (d), recycled water used for producing fodder and fiber crops (agricultural fields), ornamental nursery stock (tree farm) and orchards where the recycled water does not come into contact with edible portion of the crop (pistachios) must, at a minimum, meet the requirements of "undisinfected secondary recycled water."
5. Pursuant to California Code of Regulations, title 22, sections 60301.900 and 60301.650, "undisinfected secondary recycled water" must be effluent that is fully oxidized in which the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen.
6. Pursuant to California Code of Regulations, title 22, section 60301.225, "disinfected secondary-23 recycled water" must be effluent that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a MPN of 23 per 100 milliliters utilizing the bacteriological results of the last seven days for which analysis have been completed, and the number of total coliform bacteria does not exceed an MPN of 240 per 100 milliliters in more than one sample in any 30-day period.
7. As described in California Code of Regulations, title 22, section 60307(b), recycled water used for dust control and soil compaction during construction must meet the requirements of "disinfected secondary-23 recycled water."
8. The Discharger must comply with all requirements for recycled water use areas as specified in California Code of Regulations, title 22, section 60310. The Discharger must assure that the Secondary Users comply with all requirements for recycled water use areas as specified in California Code of Regulations, title 22, section 60310.

9. The Discharger, as producer of recycled water, must comply with all operational requirements specified in California Code of Regulations, title 22, sections 60325 (Personnel), 60327 (Maintenance), 60329 (Operating records and reports), and 60331 (Bypass).
10. The Discharger, as producer of recycled water, must comply with the general Requirements of Design specified in California Code of Regulations, title 22, article 8.
11. The Discharger, as producer of recycled water, must comply with Reliability Requirements for Full Treatment specified in California Code of Regulations, title 22, article 10, for production of water to meet the recycled water uses allowed in this Order.
12. Discharge of recycled water or runoff commingled with recycled water outside of the authorized Agricultural Site or to Little Rock Creek is prohibited.
13. The spray irrigation of nut bearing or ornamental trees and/or the harvesting of nuts from the ground surface is prohibited.
14. Christmas trees irrigated with recycled water shall be harvested no earlier than 30 days after the cessation of irrigation with recycled water. The trees shall be cut at a point on the trunk that is a minimum of two feet above the ground surface for the protection of worker and public health.
15. The use of recycled water shall not cause pollution or threatened pollution as defined in Water Code, section 13050 (l).
16. The use of recycled water shall not cause nuisance as defined in Water Code, section 13050 (m).
17. The District must develop and/or participate in the development of a salt/nutrient management plan for the Antelope Valley that is consistent with Paragraph 6 of the Recycled Water Policy. The salt/nutrient management plan must be submitted to the Water Board by **May 14, 2014**.

C. Receiving Water Limitations

Discharges from this Facility shall not cause a violation of any applicable water quality standard for the receiving water adopted by the Water Board or the State Water Resources Control Board. If more stringent applicable water quality standards are promulgated or approved, the Water Board will revise and modify this Order in accordance with such more stringent standards.

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

1. Non-degradation – State Water Resource Control Board Resolution No. 68-16 “Statement of Policy With Respect to Maintaining High Quality of Waters In California,” known as the Non-degradation Objective, requires maintenance of existing high quality in surface waters, groundwaters, and wetlands. Whenever the existing quality of water is better than the quality of water established in the Basin Plan, such existing quality shall be maintained unless appropriate findings are made under Resolution No. 68-16.
2. Bacteria - Groundwaters shall not contain concentrations of coliform organisms attributable to human wastes.
3. Chemical Constituents - Groundwaters shall not contain concentrations of chemical constituents in excess of the maximum contaminant level or secondary maximum contaminant level based on drinking water standards specified in the following provisions of California Code of Regulations, title 22: Table 64431-A of section 64431 (Inorganic Chemicals), Table 64444-A of section 64444 (Organic Chemicals), Table 64433.2-B of section 64433.2 (Fluoride), Table 64449-A of section 64449 (Secondary Maximum Contaminant Levels - Consumer Acceptance Limits), and Table 64449-B of section 64449 (Secondary Maximum Contaminant Levels - Ranges). This incorporation-by-reference is prospective including future changes to the incorporated provisions as the changes take effect.
4. Radioactivity - Radionuclides shall 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 shall not contain concentrations of radionuclides in excess of limits specified in the California Code of Regulations, title 22, chapter 15, article 5, section 64443.
5. Taste and Odors - Groundwaters shall not contain taste or odor-producing substances in concentrations that cause nuisance (Water Code section 13050 (m)) or that adversely affect waters for beneficial uses.

D. Additional Receiving Water Limitations for Groundwater Beneath the Storage Reservoirs

The discharge shall not cause a violation of the water quality objectives listed under I. C. Furthermore, discharge to the storage reservoirs shall not cause a violation of the following additional water quality objectives.

Nitrate and total dissolved solids (TDS) - Groundwater at this site shall not contain nitrate and TDS above background water quality concentrations.

E. Secondary Users

1. The Discharger is responsible for ensuring Secondary Users, as defined in Finding No. 2, comply with the following requirements:
 - a. Section I.B (Water Recycling Requirements), I.C (Receiving Water Limitations), and I.G (General Requirements and Prohibitions) of this Order;
 - b. California Code of Regulations, title 22, sections 60304, 60307, and 60310.
2. The Discharger must notify the Water Board at least 15 days prior to adding, removing or changing the Secondary Users of recycled water, and the Discharger must ensure that agreements with Secondary Users require compliance with requirements stated herein.

F. General Requirements and Prohibitions

1. The use of recycled water under this Order must be limited to the Authorized Recycled Water Sites and uses defined in Finding No. 12 of this Order.
2. The discharge to waters of the State shall not contain substances in concentrations that are toxic to, or produce detrimental physiological responses in humans, plants, animals, or aquatic life.
3. The source of recycled water must be limited to that described in Finding Nos. 7.a. and 7.d. of this Order.
4. Treated waste water used for dust control or soil compaction must be applied at a rate and amount that does not cause runoff or excessive ponding.

5. Recycled water used to irrigate landscape areas must not be applied at a rate and amount that exceeds the irrigation and nutrient needs of the vegetation.
6. Recycled water must not be applied at a rate and amount that causes ponding or runoff that is other than incidental runoff.
7. Pipelines must be maintained so as to prevent leakage.
8. There shall be no discharge, bypass, or diversion of untreated or treated waste water, sludge, grease, or oils from the transport, treatment, or authorized storage/recycling sites (described in the Finding No. 12) to adjacent land areas or surface waters.
9. Surface flow, or visible discharge of untreated or treated waste water from the authorized storage/recycling sites (described in Findings Nos. 7.c and 12) to adjacent land areas or surface waters is prohibited.
10. All facilities used for collection, transport, treatment, or disposal of waste regulated by this Order 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.
11. The vertical distance between the liquid surface elevation and the lowest point of a pond or reservoir dike shall not be less than 2.0 feet.
12. The discharge shall not cause a pollution, as defined in Water Code section 13050, subdivision (l), or a threatened pollution.
13. The treatment or the discharge shall not cause a nuisance, as defined in Water Code, section 13050, subdivision (m).
14. The disposal of waste residue, including sludge, shall be in a manner in compliance with all local, state, and federal requirements.
15. The Discharger shall comply with all existing federal and State laws and regulations that apply to biosolids use and disposal practices. The Discharger shall further comply with all requirements regarding biosolids use and disposal specified in the Clean Water Act, section 405 (d).

16. The Secondary Treatment Reclamation Plant and Tertiary Treatment Reclamation Plant must be designed and operated as described in the conditions of this Order.
17. In accordance with 40 CFR section 122.41(e), 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 conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Discharger only when necessary to achieve compliance with this Order.
18. The discharge of waste, as defined in the Water Code, which causes violation of any narrative water quality objective contained in the Basin Plan, including the Non-degradation Objective, is prohibited.
19. The discharge of waste that causes violation of any numeric water quality objective contained in the Basin Plan is prohibited.
20. The use or storage of recycled water that causes a violation of any narrative water quality objective contained in the Basin Plan, is prohibited.
21. The use or storage of recycled water that causes a violation of any numeric water quality objective contained in the Basin Plan, is prohibited.
22. Where any numeric or narrative water quality objective contained in the Basin Plan is already being exceeded, the use of recycled water that causes further degradation or pollution, is prohibited.

II. PROVISIONS

A. Rescission of Waste Discharge Requirements and Water Recycling Requirements

Board Order Nos. 6-00-57, 6-00-57A01, 6-00-57A02, 6-00-57A03, and 6-00-57-A04 are hereby rescinded except for the purposes of enforcement.

B. Monitoring and Reporting

1. Monitoring and Reporting Program - Pursuant to the Water Code, section 13267, the Discharger must comply with the attached Monitoring and

Reporting Program No. R6V-2011-TENATIVE, which is made a part of this Order. Reports requested under the Monitoring and Reporting Program are 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 waste water regulated by this Order.

2. General Provisions 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.

C. Standard Provisions

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

D. Secondary User Agreements

The Primary User shall include the following conditions in any oral or written provision for disposition of recycled water:

1. Any Secondary User of recycled waste water from the Primary User hereby authorizes, at all reasonable times, the Primary User or any authorized representative of the Water Board to enter upon the property where the recycled water is being used and to investigate such person's use of recycled water.
2. Any Secondary User of recycled water from the Primary User shall report at least once each month to the Primary User on the irrigation method and the name and final usage of all crops irrigated with recycled water during such period. Such user of recycled water from the Primary User agrees to insert the substance of this clause in any oral or written provision for disposition of recycled water.

E. Additional Storage Reservoirs

Before beginning discharge of treated waste water to any additional reservoirs, the Discharger must provide documentation that the reservoirs and associated monitoring networks were constructed in accordance with the workplan, *Installation Specifications for Proposed Palmdale Reservoir Vadose Zone Monitoring System*, dated August 11, 2008.

F. Operator Certificates

The Reclamation Plant must be supervised by persons possessing a Waste Water Treatment Plant Operator certificate of appropriate grade pursuant to California Code of Regulations, title 23, section 3670 et seq.

G. Monitoring Program Availability

A copy of this Order and the Monitoring and Reporting Program shall be available at all times at the treatment plant for immediate reference by the plant operator.

I, Lauri Kemper, Assistant Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Water Quality Control Board, Lahontan Region, on March 9, 2011.

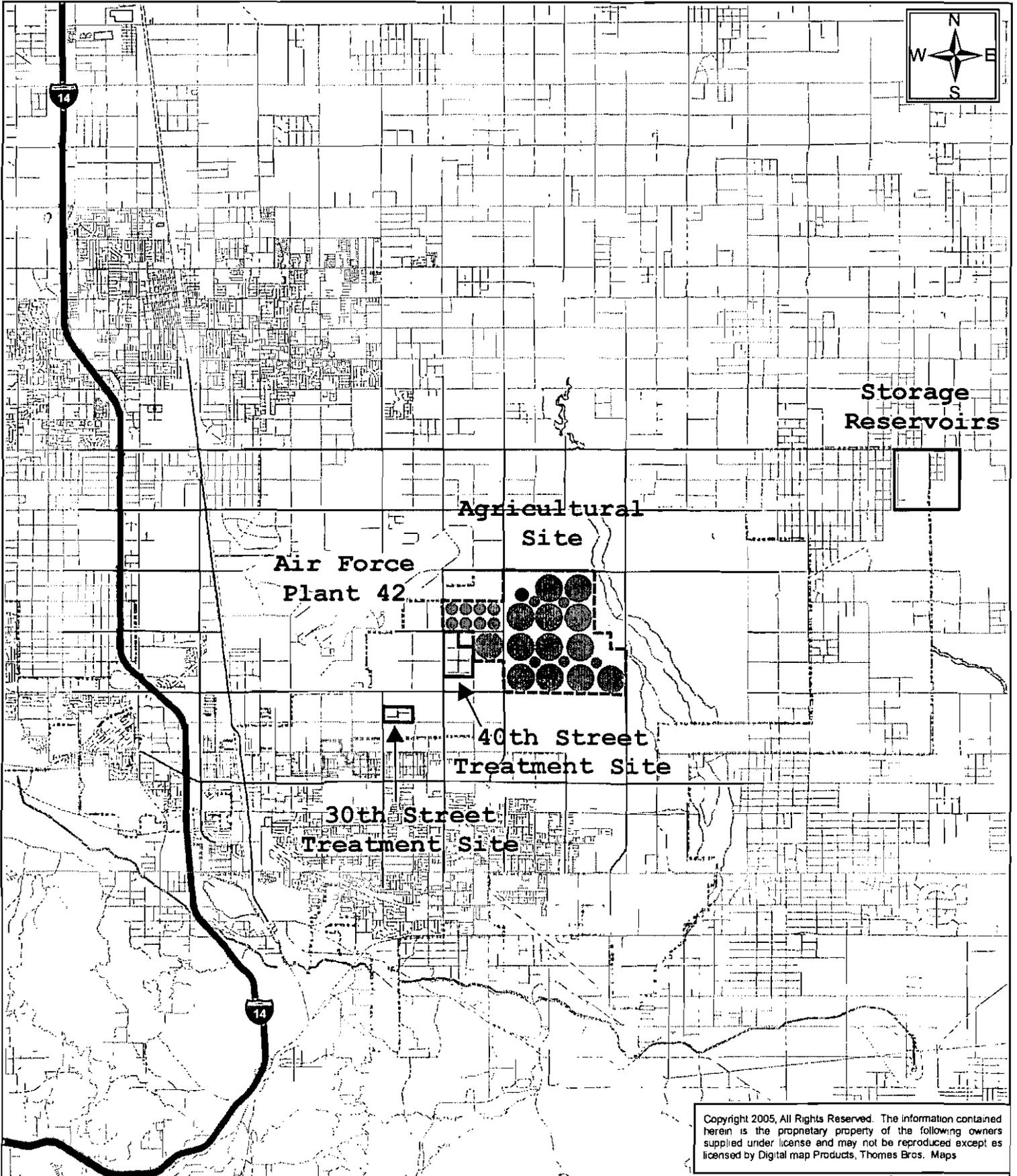

LAURI KEMPER
ASSISTANT EXECUTIVE OFFICER

Attachments:

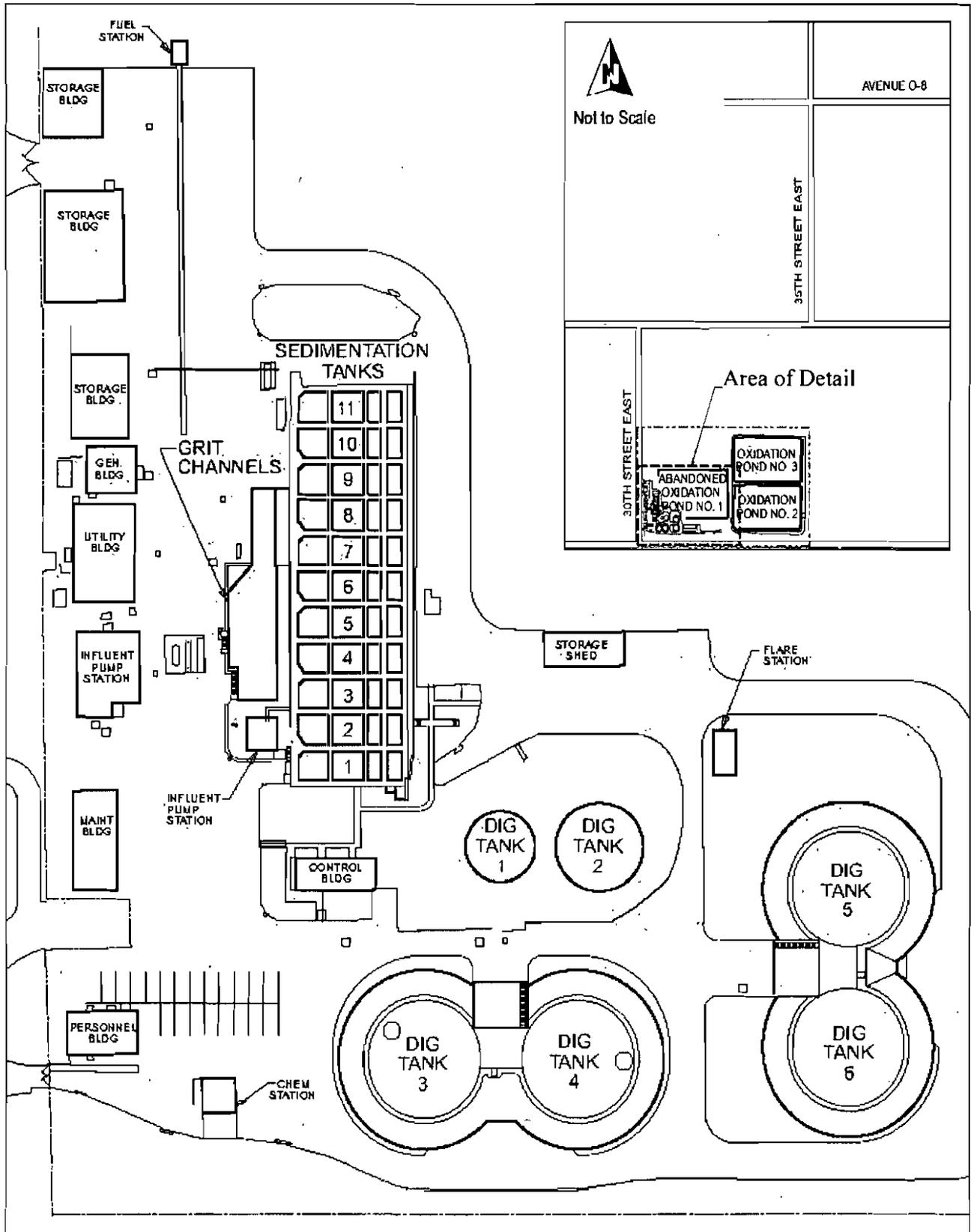
- A. General Facilities Locations
- B. Secondary Treatment Reclamation Plant
- C. Agricultural Site
- D. Secondary Treatment Facilities Process Schematic
- E. Storage Reservoirs
- F. Tertiary Treatment Facilities Process Schematic
- G. Water Board Findings on EIR Significant Impacts and Mitigation Measures
- H. Standard Provisions for Waste Discharge Requirements

Monitoring and Reporting Program – R6V-2011-0012

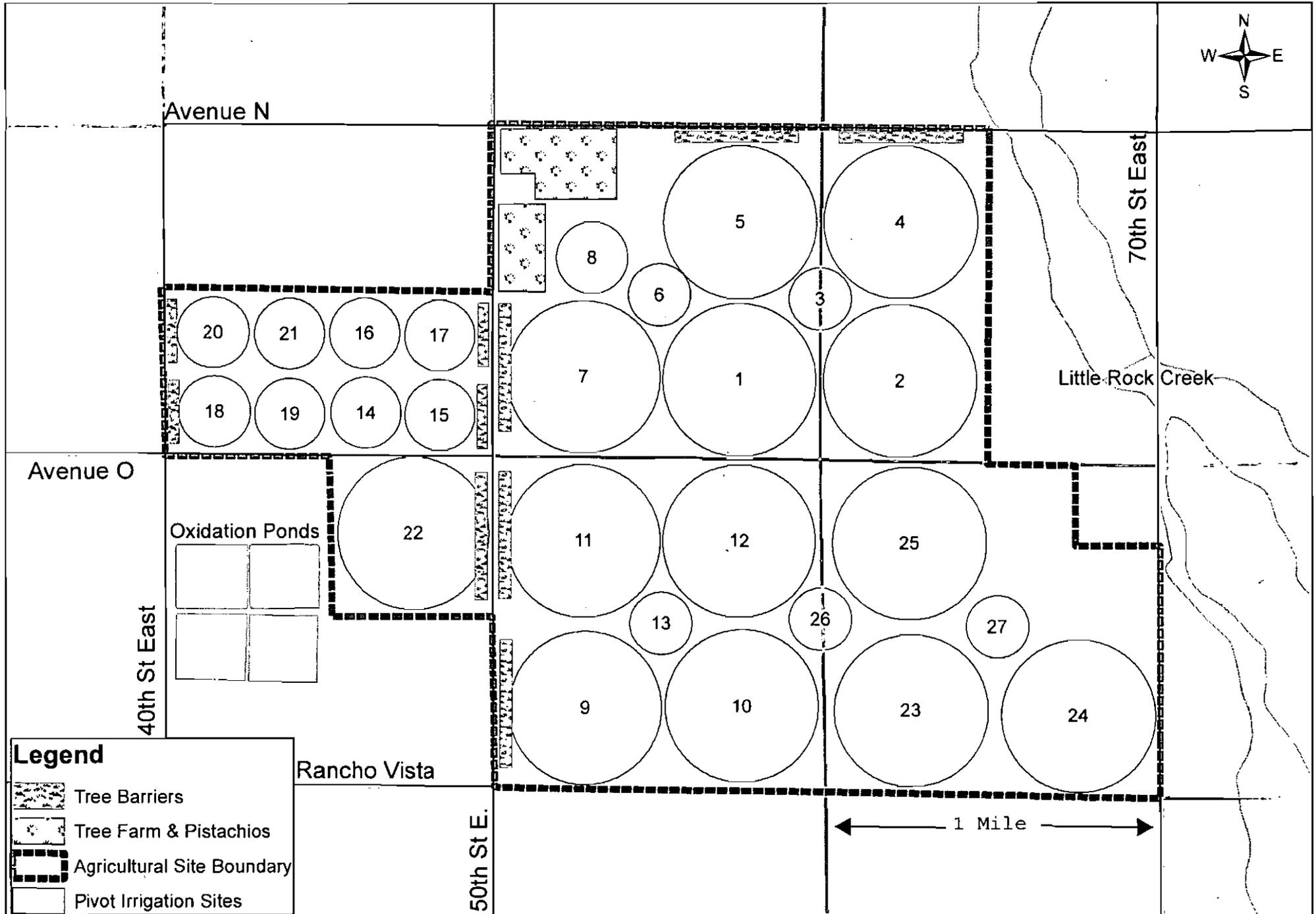
General Facilities Locations



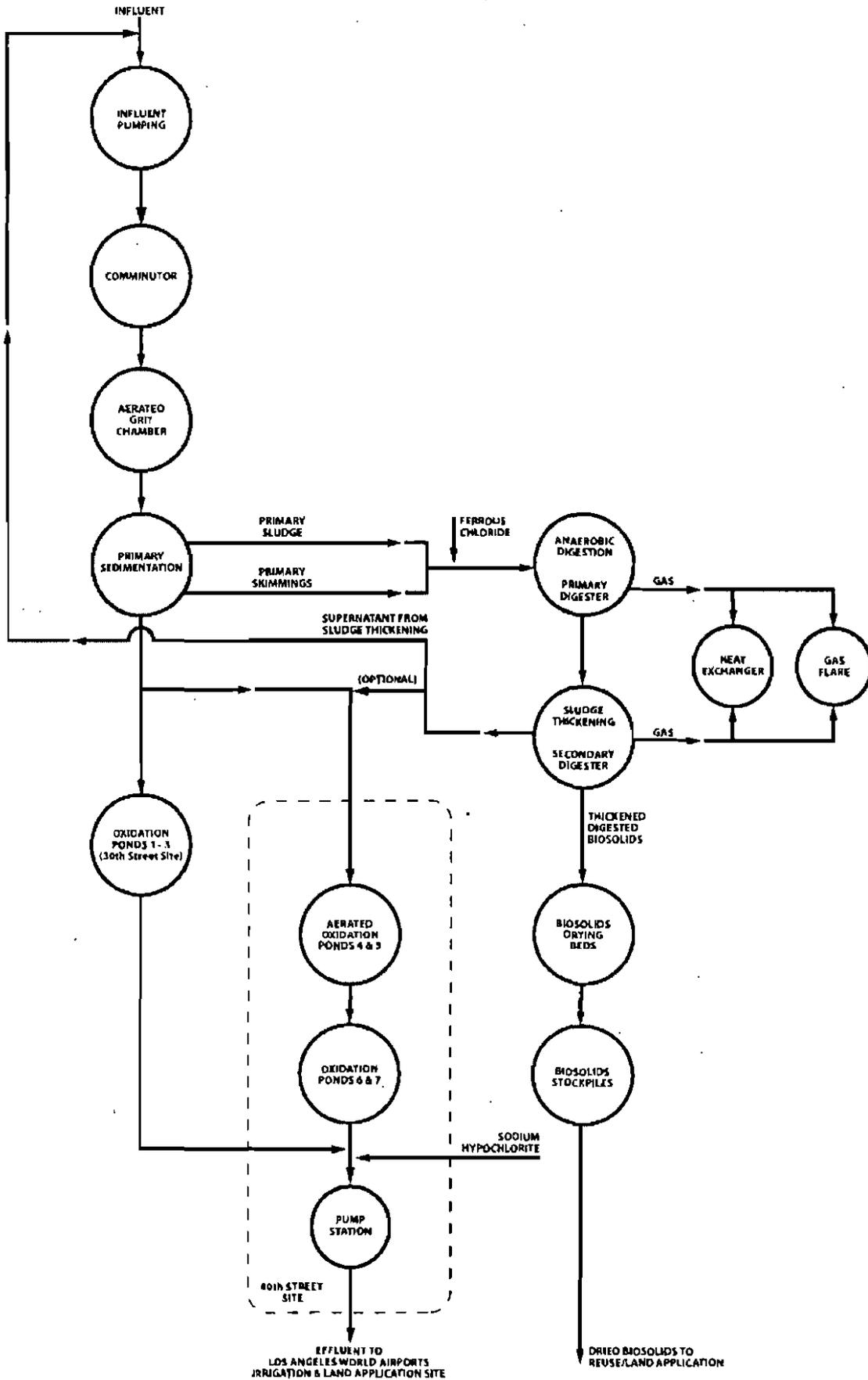
Secondary Treatment Reclamation Plant



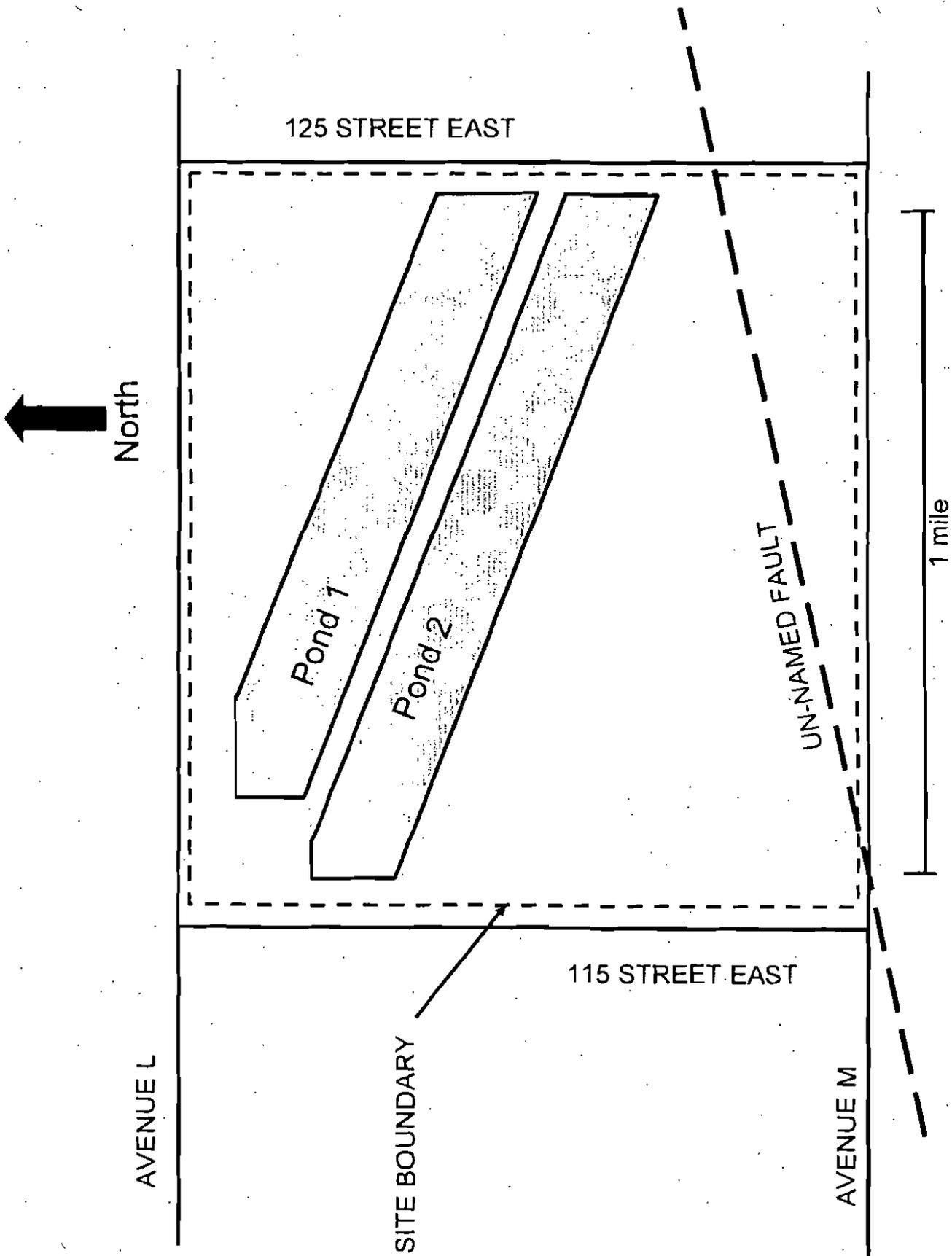
Agricultural Site



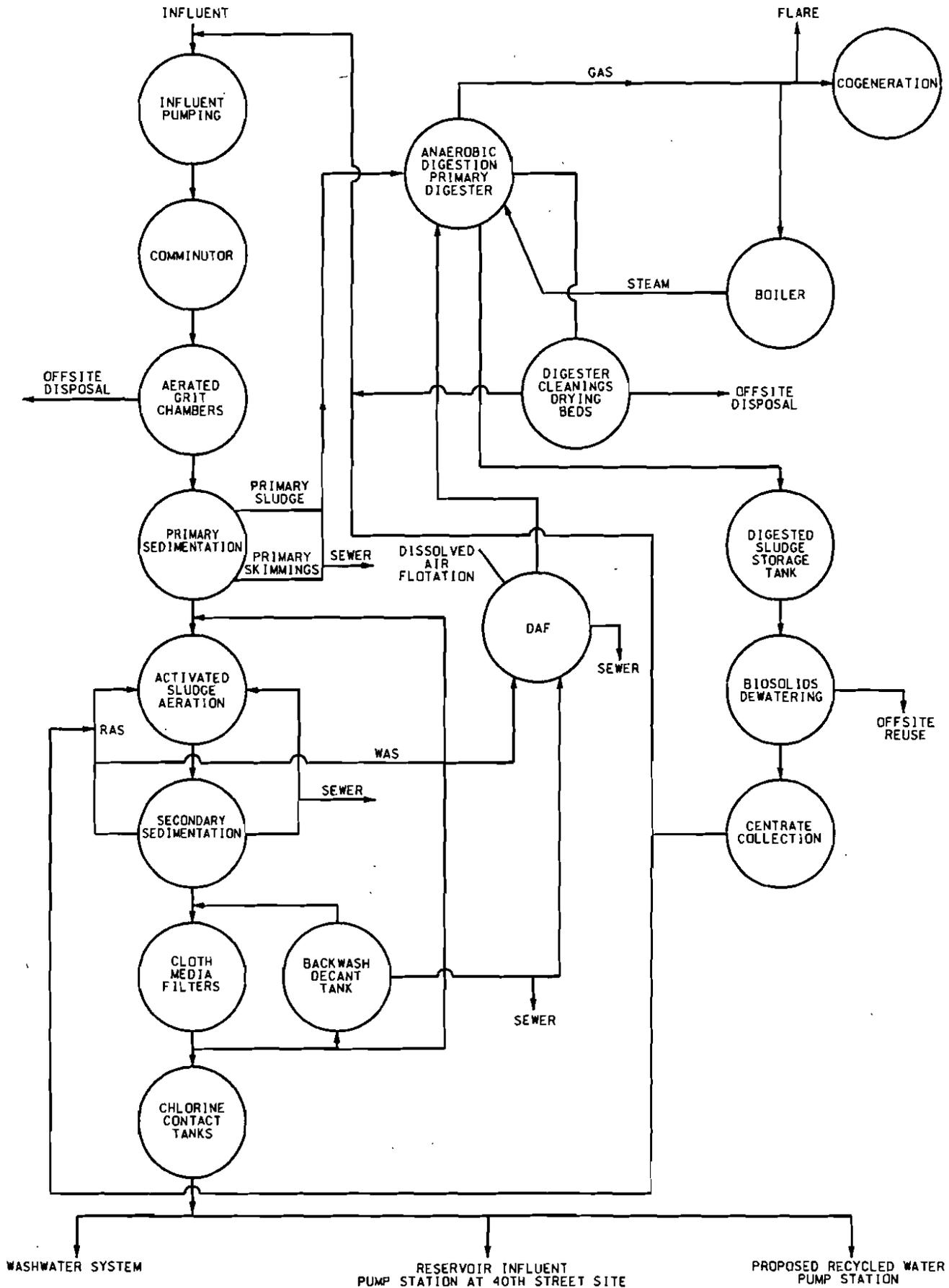
Secondary Treatment Facilities Process Schematic



Attachment E
Storage Reservoirs



Attachment F Tertiary Treatment Facilities Process Schematic



ATTACHMENT G
WATER BOARD FINDINGS On EIR SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Hydrology and Water Quality Impact	Impact Reduced to Less Than Significant By the Specified Mitigation Measures	Water Board Analysis and Findings
<p>Impact 14-1: Project construction activities could induce soil erosion and transport contaminants to downstream dry washes and playas.</p>	<p>Mitigation Measure 14-1: District shall prepare a State Water Pollution Prevention Project for all construction phases of the proposed project. The objectives of the Storm Water Pollution Prevention Plans are to identify pollutant sources that may affect the quality of storm water discharge and to implement Best Management Practices to reduce pollutants in storm water discharges.</p>	<p>Mitigation Measure 14-1: Changes have been required in, or incorporated into the project to avoid or substantially lessen the potential significant environmental effect as identified in the final EIR. Project construction is almost complete and the District has fulfilled this mitigation measure. All District construction-related projects are required to develop and implement a SWPPP.</p>
<p>Impact 14-2: Effluent water infiltrating into the groundwater from the proposed storage reservoirs could degrade water quality.</p>	<p>Mitigation Measure 14-2: The District shall line all proposed storage reservoirs (bottoms and sides) with synthetic materials to minimize infiltration of treated effluent into the subsurface.</p>	<p>Mitigation Measure 14-2: Changes have been required in, or incorporated into the project to avoid or substantially lessen the potentially significant environmental effect as identified in the final EIR. The storage reservoirs were lined in accordance to specifications approved by the Water Board. This Order requires any new storage reservoir be lined in accordance to these specifications.</p>
<p>Impact 14-3: Effluent water infiltrating into the groundwater from agricultural or municipal reuse operations could degrade groundwater quality</p>	<p>Mitigation Measure 14-3: The District shall implement a Farm Management Plan outlining procedures for ensuring that effluent is applied at agronomic rates to minimize the potential for infiltration.</p> <p>Mitigation Measure 14-4: The District shall provide liners to retention basins to prevent substantial infiltration of applied water or, with the Water Board's approval, manage these basins to minimize infiltration to ensure protection of</p>	<p>Mitigation Measure 14-3: Changes have been required in, or incorporated into the project to avoid or substantially lessen the potentially significant environmental effect as identified in the final EIR. The components of this mitigation measure were required under the previous MRP and are required in the current MRP.</p> <p>Mitigation Measure 14-4: The District currently has no retention basins. District representatives state that there are no plans to construct retention basins, but if they are necessary in the future, they would</p>

Hydrology and Water Quality Impact	Impact Reduced to Less Than Significant By the Specified Mitigation Measures	Water Board Analysis and Findings
	groundwater.	comply with this mitigation measure and WDRs would be revised accordingly. Changes have, therefore, been required in, or incorporated into the project to avoid or substantially lessen the potentially significant environmental effect as identified in the Final EIR.
<p>Impact 14-4: Recycled effluent could run off the site if over-applied or applied during storm events.</p>	<p>Mitigation Measure 14-5: The District shall construct a combination of earthen berms, modify existing site grades, and/or construct catch or pump basins at points around the proposed agricultural areas to prevent unauthorized runoff. The improvements would be designed to allow peak flood waters to inundate fields without modifying the flood plain by providing flood access culverts or other design features. The location and description of the improvements will be provided in the Farm Management Plan (FMP).</p>	<p>Mitigation Measure 14-5: This mitigation measure pertains to a new agricultural site identified in the Facilities Plan/EIR. These improvements are in place at the current Agricultural Site in accordance with Board Order No. 6-00-57 and this Order. Development of the new site has been delayed because an expansion is not necessary at this time. This Order requires the District to submit a FMP to the Water Board prior to the development of the new site. Changes have, therefore, been required in, or incorporated into the project to avoid or substantially lessen the potentially significant environmental effect as identified in the Final EIR.</p>
<p>Impact 14-5: Improperly abandoned wells could transport recycled water used for irrigation directly to the groundwater aquifer.</p>	<p>Mitigation Measure 14-6: The District shall identify and properly abandon groundwater wells in the proximity of the proposed project operations in conformance with Title 22 Article 4 requirements.</p> <p>Mitigation Measure 14-7: Title 22 requirements shall be used to determine the appropriate distance between agricultural irrigation activities and separating water wells.</p>	<p>Mitigation Measure 14-6: This mitigation measure pertains to new agricultural site identified in the Facilities Plan/EIR. These actions have been completed at the existing agricultural site. Well abandonment is under the jurisdiction of Los Angeles County Department of Public Health.</p> <p>Mitigation Measure 14-7: This Impact pertains to a new agricultural site. Development of the new site has been postponed because the existing Agricultural Site meets the District's current needs. The District fulfilled these requirements at the</p>

Hydrology and Water Quality Impact	Impact Reduced to Less Than Significant By the Specified Mitigation Measures	Water Board Analysis and Findings
		existing Agricultural Site. If the District develops a new agricultural site, the Order requires it to implement this mitigation measure prior the development of the new agricultural site. Changes have been required in, or incorporated into the project to avoid or substantially lessen the potentially significant environmental effect as identified in the final EIR.
<p>Impact 14-6: Project facilities located in a floodplain could redirect flood waters and cause localized flooding.</p>	<p>Mitigation Measure 14-8: The District shall incorporate engineering considerations in reservoir design to accommodate flood waters to prevent road inundation and minimize scouring.</p>	<p>Mitigation Measure 14-8: This mitigation measure is the jurisdiction of Los Angeles County Department of Public Works.</p>

WDR ATTACHMENT H

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. Any such proposal shall be reported to the Regional Board at least 120 days in advance of implementation. 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. 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**

**MONITORING AND REPORTING PROGRAM NO. R6V-2011-0012
WDID NO. 6B190107069**

FOR

**LOS ANGELES COUNTY SANITATION DISTRICT NO. 20
PALMDALE WATER RECLAMATION PLANT**

Los Angeles County

The County Sanitation District No. 20 of Los Angeles County (Discharger) owns and operates the Palmdale Water Reclamation Plant (Reclamation Plant) and the Storage Reservoir Site. Effluent from the Reclamation Plant is stored at the Storage Reservoir Site and reused at the Agricultural Site (formerly referred to as the Effluent Management Site), which is owned by the City of Los Angeles World Airports.

This Monitoring and Reporting Program, MRP R6V-2011-0012, applies to the Facility, which includes the Reclamation Plant, Storage Reservoir Site, and Agricultural Site. This MRP supersedes all previous MRPs for this Facility.

The Discharger submitted a Sampling and Analysis Plan (SAP), dated November 3, 2010, which describes sample collection methods, laboratory reporting limits, and quality control and assurance methods. The SAP shall be kept current and revised as necessary based on modified procedures, methods, or locations. All revisions must be submitted to the Water Board at least 30 days before their implementation. The November 3, 2010 SAP must be revised in accordance with WDR R6V-2011-0012 and this MRP and submitted to the Water Board within 30 days of the signature date of this MRP.

I. MONITORING

A. Flow Monitoring for Secondary and Tertiary Treatment Reclamation Plants

The following information on the Secondary and Tertiary Treatment Reclamation Plants (Reclamation Plant) shall be recorded in a permanent logbook and the information submitted according to the required frequency.

1. The total volume, in millions of gallons (MG), of waste water to the treatment facilities for each day.
2. The total volume, in MG, of waste water to the treatment facilities for each month.
3. The maximum instantaneous flow rate, in millions of gallons per day (MGD), of waste water to the treatment facilities that occurs each day.
4. The calculated average flow rate, in MGD, of waste water to the treatment facilities for each month.

5. The total volume, in MG, of recycled water to the Agricultural Site (i.e., land leased from Los Angeles World Airports) for each month.
6. The calculated average flow rates in MGD of recycled water to the Agricultural Site for each month.
7. The flow of recycled water in MGD to each center pivot or other irrigation system at the Agricultural Site shall be recorded, and the volume in MG of recycled water to each center pivot or other irrigation system for each month shall be recorded. This information shall be used to assess the crop agronomic water and nutrient needs.
8. The total volume, in MG, of recycled water to the storage reservoirs for each month.
9. The calculated average flow rates in MGD of recycled water to the storage reservoirs for each month.
10. The volumes, in MG, of recycled water for reuse at the Reclamation Plant and Storage Reservoir Site for each month.
11. The calculated average flow rate, in MGD, of recycled water for reuse at the Reclamation Plant and Storage Reservoir Site for each month.
12. The freeboard (distance from the top of the lowest part of the dike to the water surface in a pond or reservoir) measured once each week in each pond or reservoir. If a pond or reservoir does not contain water, indicate that it is empty.

B. Influent Monitoring

Influent samples taken prior to the primary clarifiers shall be analyzed to determine the magnitude of the Table 1 parameters.

Table 1: Influent Monitoring

Parameter	Reporting Units ⁱ	Type of Sample	Frequency ⁱⁱ
BOD ⁱⁱⁱ	mg/L	24-hr composite	W
COD ^{iv}	mg/L	24-hr composite	W
nitrate nitrogen	mg/L as N	24-hr composite	M
kjeldahl nitrogen	mg/L as N	24-hr composite	M
ammonia nitrogen	mg/L as N	24-hr composite	M
TPH gasoline range ^v	µg/L	grab ^{vi}	Q
TPH diesel range ^v	µg/L	grab ^{vi}	Q
total trihalomethanes ^{vii}	µg/L	grab ^{vi}	SA
bromodichloromethane	µg/L	grab ^{vi}	SA
bromoform	µg/L	grab ^{vi}	SA
chloroform	µg/L	grab ^{vi}	SA
dichlorobromomethane	µg/L	grab ^{vi}	SA
total dissolved solids (TDS)	mg/L	24-hr composite	SA
total phenols	µg/L	24-hr composite	A
inorganics ^{viii}	µg/L	24-hr composite	A

total cyanides	µg/L	grab ^{vi}	A
volatile organics ^{viii}	µg/L	grab ^{vi}	A
semi-volatile organics ^{viii}	µg/L	24-hr composite	A
pesticides - PCBs ^{viii}	µg/L	24-hr composite	A

Endnotes are at the end of the MRP.

C. Effluent Monitoring

1. Disinfected Secondary-Treated Effluent

Samples of the disinfected secondary-treated effluent from the existing oxidation ponds shall be collected downstream of all treatment units and analyzed to determine the magnitude of Table 2 parameters.

Table 2: Effluent Monitoring - Disinfected Secondary

Parameter	Minimum Level ^{ix} / Units	Type of Sample	Frequency ⁱ
total coliform	MPN/100 ml	grab ^{vi}	D
BOD ⁱⁱⁱ	mg/L	24-hr composite	W
total suspended solids	mg/L	24-hr composite	W
COD ^{iv}	mg/L	24-hr composite	W
dissolved oxygen	mg/L	grab ^{vi}	W
pH	pH units	grab ^{vi}	W
temperature	°Celsius	grab ^{vi}	W
total chlorine residual	mg/L	grab ^{vi}	W
MBAS ^x	mg/L	24-hr composite	M
TDS	mg/L	24-hr composite	M
chloride	mg/L	24-hr composite	M
sodium	mg/L	24-hr composite	M
sulfate	mg/L	24-hr composite	M
ammonia nitrogen	mg/L as N	24-hr composite	M
kjeldahl nitrogen	mg/L as N	24-hr composite	M
nitrate nitrogen	mg/L as N	24-hr composite	M
dissolved organic carbon ^{xi}	mg/L	24-hr composite	Q
TPH gasoline range ^v	50 µg/L	24-hr composite	Q
TPH diesel range ^v	100 µg/L	24-hr composite	Q
oil and grease	mg/L	grab ^{vi}	Q
total trihalomethanes ^{vii}	80 µg/L	grab ^{vi}	Q
bromodichloromethane	0.5 µg/L	grab ^{vi}	Q
bromoform	0.5 µg/L	grab ^{vi}	Q
chloroform	0.5 µg/L	grab ^{vi}	Q
dibromochloromethane	0.5 µg/L	grab ^{vi}	Q
total phenols	6.0 µg/L	24-hr composite	A
inorganics ^{xii}	µg/L	24-hr composite	A
total cyanides	5.0 µg/L	grab ^{vi}	A
volatile organics ^{viii}	µg/L	grab ^{vi}	A

Table 2: Effluent Monitoring - Disinfected Secondary

Parameter	Minimum Level ^{ix} / Units ⁱ	Type of Sample	Frequency ⁱⁱ
semi-volatile organics ^{viii}	µg/L	24-hr composite	A
pesticides - PCBs ^{viii}	µg/L	24-hr composite	A
MTBE ^{xiii}	5.0 µg/L	grab ^{vi}	A

Endnotes are at the end of the MRP.

2. Disinfected Tertiary-Treated Effluent

Samples of disinfected tertiary-treated effluent shall be collected from the treatment plant and analyzed to determine the magnitude of the parameters listed in Table 3.

Table 3: Effluent Monitoring - Tertiary Treatment

Parameter	Minimum Level ^{ix} /Units ⁱ	Type/Method	Minimum Frequency ⁱⁱ
flow	MGD	flow meter	continuous
turbidity ^{xiv}	NTU	turbidity meter	continuous
total chlorine residual	mg/L	chlorine residual meter	continuous
modal contact time ^{xv}	Minutes	calculated	D
CT value ^{xvi}	mg-minutes/L	calculated	D
total coliform	CFU/100 ml	grab ^{vi}	D
dissolved oxygen	mg/L	grab ^{vi}	W
pH	pH units	grab ^{vi}	W
temperature	°Celsius	grab ^{vi}	W
BOD ⁱⁱⁱ	mg/L	24-hr composite	M
COD ^{iv}	mg/L	24-hr composite	M
ammonia nitrogen	mg/L-N	24-hr composite	M
kjeldahl nitrogen	mg/L-N	24-hr composite	M
nitrate nitrogen	mg/L-N	24-hr composite	M
nitrite nitrogen	mg/L-N	24-hr composite	M
chloride	mg/L	24-hr composite	Q
sodium	mg/L	24-hr composite	Q
sulfate	mg/L	24-hr composite	Q
calcium	mg/L	24-hr composite	Q
magnesium	mg/L	24-hr composite	Q
MBAS ^x	mg/L	24-hr composite	Q
TOC ^{xvii}	mg/L	24-hr composite	Q
TDS	mg/L	24-hr composite	Q
total trihalomethanes ^{vii}	80 µg/L	grab ^{vi}	Q
bromodichloromethane	0.5 µg/L	grab ^{vi}	Q
bromoform	0.5 µg/L	grab ^{vi}	Q
chloroform	0.5 µg/L	grab ^{vi}	Q
dichlorobromomethane	0.5 µg/L	grab ^{vi}	Q

Table 3: Effluent Monitoring - Tertiary Treatment

Parameter	Minimum Level ^{ix} /Units ⁱ	Type/Method	Minimum Frequency ⁱⁱ
haloacetic acids (five) ^{xviii}	60 µg/L	grab ^{vi}	Q
monochloroacetic acid	2 µg/L	grab ^{vi}	Q
dichloroacetic acid	1 µg/L	grab ^{vi}	Q
trichloroacetic acid	1 µg/L	grab ^{vi}	Q
monobromoacetic acid	1 µg/L	grab ^{vi}	Q
dibromoacetic acid	1 µg/L	grab ^{vi}	Q
N-nitrosodimethylamine	0.002 µg/L	24-hr composite	Q
bis(2diethylhexyl)phthalate	2 µg/L	24-hr composite	Q
TPH gasoline range ^v	50 µg/L	grab ^{vi}	Q
TPH diesel range ^v	100 µg/L	grab ^{vi}	Q
total chromium ^{viii}	2 µg/L	24-hr composite	A
hexavalent chromium ^{viii}	2.5 µg/L	grab ^{vi}	A
total phenols	6.0 µg/L	24-hr composite	A
inorganics ^{viii}	µg/L	24-hr composite	A
total cyanides	5.0 µg/L	grab ^{vi}	A
volatile organics ^{viii}	µg/L	grab ^{vi}	A
semi-volatile organics ^{viii}	µg/L	24-hr composite	A
pesticides - PCBs ^{viii}	µg/L	24-hr composite	A
MTBE ^{xiii}	5.0 µg/L	grab ^{vi}	A

Endnotes are at the end of the MRP.

D. Groundwater Monitoring

The groundwater monitoring network is intended to evaluate the effects of the discharge from the unlined secondary oxidation/percolation ponds, historic land disposal, agricultural reuse operations, and corrective actions. The network consists of the wells listed in Tables 4, 5, and 6. The well locations are shown in Attachment A.

Beginning immediately, grab samples shall be collected from the monitoring, supply, and extraction wells in Tables 4, 5, and 6. Additional wells shall be added as necessary to evaluate impacts to groundwater and the corrective actions. The SAP shall be updated accordingly.

Each well in Tables 4 and 5 that is designated to be sampled on both a quarterly and tri-annual basis shall be sampled to determine the magnitude of the parameters shown in Tables 7 and 8 on a quarterly basis (with the exception of the quarterly monitoring parameter, DEHP [bis(2diethylhexyl)phthalate], which will be monitored as described in the following paragraph) and Table 9 parameters on a tri-annual basis.

Quarterly monitoring for DEHP is only required in the following monitoring wells: MW-2, MW-4, MW-16, MW-22, MW-28, and MW-32. After a minimum of four quarters of groundwater monitoring for DEHP, the Discharger may present the

findings and recommendations regarding whether to continue, modify or cease DEHP monitoring. Recommendations to decrease or cease monitoring must be approved by Water Board's Executive Officer prior to implementation.

The Table 4 wells that are designated for tri-annual sampling, but are not designated for quarterly sampling, shall be sampled at a tri-annual frequency to determine the magnitude of the parameters shown in Tables 7, 8, and 9. No sampling is required for the Table 4 wells designated for "Water Level Only" (i.e., MW-17, MW-20, and MW-37). These three wells will be used to collect water level data during each sampling event.

Table 4: Groundwater Monitoring Wells

Well	Screened Interval feet bgs	Location Section #	Frequency ¹⁾	Water Level Only
MW-1	360 – 400	21	Q, Tri-A	
MW-2	480 – 540	20	Q, Tri-A	
MW-4	289 – 334	9	Q, Tri-A	
MW-15R	333 – 363	3	Q, Tri-A	
MW-16	286 – 331	10	Q, Tri-A	
MW-17	245 – 290	12		X
MW-18R	326 – 356	11	Q, Tri-A	
MW-19	290 – 335	3	Q, Tri-A	
MW-20	257 – 295	9		X
MW-21	300 – 339	2	Q, Tri-A	
MW-22	282 – 320	4	Q, Tri-A	
MW-23	268 – 397	16	Q, Tri-A	
MW-24R	325 – 350	15	Q, Tri-A	
MW-25	320 – 349	17	Q, Tri-A	
MW-26	361 – 372	2	Q, Tri-A	
MW-27	390 – 399	2	Q, Tri-A	
MW-28	420 – 430	4	Q, Tri-A	
MW-29	490 – 500	4	Q, Tri-A	
MW-31	483 – 518	19	Q, Tri-A	
MW-32	372 – 395	18	Q, Tri-A	
MW-33	362 – 376	8	Q, Tri-A	
MW-37	318 – 352	1		X
MW-38	281 – 315	24	Tri-A	
MW-39	306 – 345	23	Tri-A	
MW-40	330 – 360	17	Q, Tri-A	
MW-46	510 – 549	20	Q, Tri-A	
MW-51	330 – 339	16	Q, Tri-A	
MW-52	317 – 347	10	Q, Tri-A	
MW-53	295 – 330	9	Q, Tri-A	
MW-54	331 – 356	9	Q, Tri-A	
MW-55	465 – 475	9	Q, Tri-A	
MW-56	325 – 365	3	Q, Tri-A	

Table 4: Groundwater Monitoring Wells

Well	Screened Interval feet bgs	Location Section #	Frequency ¹	Water Level Only
MW-57	339 – 349	5	Q, Tri-A	
MW-58	375 – 390	5	Q, Tri-A	

Endnotes are at the end of the MRP.

The Discharger must monitor the water supply wells listed in Table 5 at the required frequencies, unless factors beyond the Discharger's control prevent sampling, e.g., the supply well has been dismantled or is out of service. Each factor shall be noted in the monitoring report. The Discharger must make an effort to monitor supply wells that are used during the quarter but are not in use on the day that samples are typically collected. Water level measurements are not required for supply wells SW-2, DW 4-2, 17D1 since these wells have a sealed construction that prohibits water level measurements.

Table 5: Groundwater Supply Wells

Well	Screened Interval feet bgs	Location Section #	Frequency/ Parameter ¹
DW4-2	410 – 430	5	Q, Tri-A
	470 - 490		
	650 – 670		
17D1	380 – 771	17	Q, Tri-A
LAWA 7	414 – 626	8	Q, Tri-A
SW-2	376 – 706	9	Q, Tri-A

Endnotes are at the end of the MRP.

Samples from the extraction wells shall be analyzed for the first four parameters of Table 8 (i.e., ammonia as nitrogen, Kjeldahl as nitrogen, nitrate as nitrogen, and total dissolved solids [TDS]).

Table 6: Extraction Wells

Well	Screened Interval feet bgs	Location Section #	Frequency/ Parameter ²
EW-1 (R-10)	320 – 365	16	Q
EW-2 (R-2)	280 – 460	9	Q
EW-3 (R-3)	290 – 435	9	Q
EW-4 (R-4)	290 – 315	16	Q
	335 – 410		
EW-5 (R-9)	295 – 375	10	Q
EW-6 (R-8)	321 – 340	10	Q

Endnotes are at the end of the MRP.

Table 7: Field Parameters

Parameter	Units ¹
static water depth	feet bgs
electrical conductivity	µS/cm
pH	pH units
Temperature	degrees Celsius
dissolved oxygen	mg/L
Turbidity	NTU
Color	visual

Endnotes are at the end of the MRP.

Table 8: Quarterly Groundwater Monitoring Parameters

Parameter	Minimum Level ^{ix} / Units ¹	Parameter	Minimum Level ^{ix} / Units ¹
ammonia nitrogen	0.1 mg/L as N	sodium	mg/L
kjeldahl nitrogen	0.2 mg/L as N	sulfate	mg/L
nitrate nitrogen	0.2 mg/L as N	TOC	mg/L
TDS	25 mg/L	TPH gasoline range ^v	50 µg/L
MBAS ^x	mg/L	TPH diesel range ^v	100 µg/L
Chloride	mg/L	DEHP ^{xix}	2 µg/L

Endnotes are at the end of the MRP.

Table 9: Tri-Annual Groundwater Monitoring Parameters

Parameter	Minimum Level ^{ix} /Units ¹	Parameter	Minimum Level ^{ix} /Units ¹
ammonia nitrogen	0.1 mg/L as N	total trihalomethanes ^{vii}	80 µg/L
kjeldahl nitrogen	0.2 mg/L as N	bromodichloromethane	0.5 µg/L
nitrate nitrogen	0.2 mg/L as N	bromoform	0.5 µg/L
TDS	25 mg/L	chloroform	0.5 µg/L
total cyanides	5 µg/L	dichlorobromomethane	0.5 µg/L
total phenols	6 µg/L	haloacetic acids (five) ^{xviii}	60 µg/L
inorganics ^{viii}	viii	monochloroacetic acid	2 µg/L
volatile organics ^{viii}	viii	dichloroacetic acid	1 µg/L
semi-volatile organics ^{viii}	viii	trichloroacetic acid	1 µg/L
pesticides - PCBs ^{viii}	viii	monobromoacetic acid	1 µg/L
MTBE ^{xiii}	2.5 µg/L	dibromoacetic acid	1 µg/L

Endnotes are at the end of the MRP.

Groundwater monitoring wells listed in Table 4 shall be sampled and purged in accordance with USEPA, *Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers* or subsequent revisions

(http://www.epa.gov/tio/tsp/download/gw_sampling_guide.pdf). Low-stress (also known as low-flow) and well-volume purging shall be in accordance to the methods and stability criteria contained in this guidance. Note, for low-stress

methods, the guidance specifies that well drawdown be minimized and should never exceed 0.33 feet. Well purge methods and extracted water volumes and rates shall be recorded. Although groundwater supply wells (Table 5) and extraction wells (Table 6) are not designed for standard purging and sample collection, reasonable efforts must be made to collect representative samples from these wells.

Groundwater monitoring reports shall contain running graphs and trend analyses of TDS and nitrate (as nitrogen) from historical groundwater monitoring data. The flow direction of groundwater shall be calculated quarterly. A graphical representation of the groundwater flow direction shall be included in the quarterly monitoring reports. Semi-annually, an updated figure(s) showing the groundwater nitrate plume and TDS concentrations shall be included. Because of the large spatial distribution of the monitoring well network, these figures should be presented on 11 by 14 inches or larger format. All Table 4, 5, and 6 monitoring wells must be clearly displayed and labeled on these figures.

E. Groundwater Extraction Operation

The following information shall be collected and reported.

1. Volumes of Extracted Groundwater

The rate, volume and operation of groundwater extraction wells shall be recorded in a permanent log book for each well listed in Table 6 and reported in tabular form in the quarterly reports and summarized in the annual reports.

- a. The maximum and average daily pumping rate in gallons per minute (gpm);
- b. The total monthly, annual, and cumulative total volumes extracted from each well;
- c. The time periods of operation, i.e., the specific days that the extraction well was in operation;
- d. Any operational problems or maintenance activities.

2. Nitrate and TDS Mass Removal

The Discharger shall provide estimates of the following information in tabular form and shall describe procedures used to develop these estimates.

- a. Estimated total monthly, annual, and cumulative total mass, in pounds, of nitrate as nitrogen and TDS extracted from each well.
- b. Estimated total monthly, annual, and cumulative total mass, in pounds, of nitrate and TDS extracted from all wells.

The Discharger shall report this information in the quarterly reports and shall provide summaries of this information and recommendations to further optimize the extraction system in the annual reports.

F. Vadose Zone Monitoring

1. Agricultural Site

Vadose zone monitoring for the Agricultural Site shall be performed at the stations listed in Table 10 and shown on Attachment B. Station numbers refer to the field center pivot number. Vadose zone monitoring shall be for the parameters and frequencies described in Table 11.

**Table 10: Vadose Zone Monitoring Stations
Agricultural Site**

Station ID	Location	Monitoring Depth (feet bgs)			
		Pressure/Vacuum Samplers		Passive Capillary Lysimeter	Soil Moisture Sensor
		Shallow	Deep		
VZ 1	Pivot 1	5	14	4.8	2, 3, 5, 10, & 14
VZ 4	Pivot 4	5	14	5.0	2, 3, 5, 10, & 14
VZ 5	Pivot 5	5	14	5.0	2, 3, 5, 10, & 14
VZ 7	Pivot 7	5	14	4.6	2, 3, 5, 10, & 14
VZ 7A	Pivot 7	5	--	4.7	2, 3, 5, 10, & 14
VZ 7B	Pivot 7	5	--	4.3	2, 3, 5, 10, & 14
VZ 12	Pivot 12	5	14	4.5	2, 3, 5, 10, & 14
VZ 14	Pivot 14	5	14	4.7	2, 3, 5, 10, & 14
VZ 15	Pivot 15	5	14	4.3	2, 3, 5, 10, & 14
VZ 19	Pivot 19	5	14	5.0	2, 3, 5, 10, & 14
VZ P	pistachio orchard	5	14	5.0	2, 3, 5, 10, & 14
VZ 23	Pivot 23	--	--	5.0	2, 3, 5, 10, & 14
VZ 24	Pivot 24	5	14	5.0	2, 3, 5, 10, & 14
VZ 25	Pivot 25	--	--	5.0	2, 3, 5, 10, & 14
VZ 27	Pivot 27	5	14	5.0	2, 3, 5, 10, & 14

**Table 11: Vadose Zone Monitoring Parameters &
Frequencies Agricultural Site**

Parameter	Minimum Level/Units	Frequency ^{II}
ammonia nitrogen	0.1 mg/L as N	Q
kjeldahl nitrogen	0.2 mg/L as N	Q
nitrate nitrogen	0.2 mg/L as N	Q
nitrite nitrogen	0.1 mg/L as N	Q
electrical conductivity	µS/cm	Q
Bromoform	0.5 µg/L	A
Chloroform	0.5 µg/L	A
Dibromochloromethane	0.5 µg/L	A
Dichlorobromomethane	0.5 µg/L	A

Endnotes are at the end of the MRP.

2. Storage Reservoir Site

The vadose monitoring system at the Storage Reservoir Site consists of 36 soil moisture sensors and five lysimeters. The monitoring system is designed to provide for early detection of recycled water leakage from the storage reservoirs. The monitoring locations were selected at areas thought to have the greatest risk of leakage, i.e., where pipes protrude through the reservoir liner. The monitoring procedures and data evaluation described in the Discharger's Revised Groundwater Delineation and Monitoring Plan for Proposed Storage Reservoir Site, dated May 30, 2008, and subsequent revisions shall be incorporated into the revised SAP.

Vadose zone monitoring shall be performed at the stations listed in Table 12 and shown on Attachment C. Vadose zone monitoring shall be for the parameters and frequencies described in Table 13.

**Table 12: Vadose Zone Monitoring Stations
Storage Reservoir Site**

Station ID	Location (see Attachment C)	Monitoring Depth (ft bgs)	
		Pressure/Vacuum Sampler	Soil Moisture Sensor
Storage Reservoir No. 1			
MS-1	east of NW corner	--	3, 5, & 8
MS-2	NW corner	--	3, 5, & 8
MS-3	SW corner	8	3, 5, & 8
MS-4	midpoint of south wall	8	3, 5, & 8
MS-5	SE corner	--	3, 5, & 8
MS-6	NE corner	--	3, 5, & 8
MS-12	midpoint of north wall	8	3, 5, & 8
Storage Reservoir No. 2			
MS-7	NW Corner	--	3, 5, & 8
MS-8	SW Corner	8	3, 5, & 8
MS-9	midpoint of north wall	8	3, 5, & 8
MS-10	SE corner	--	3, 5, & 8
MS-11	NE corner	--	3, 5, & 8

**Table 13: Vadose Zone Monitoring Parameters & Frequencies
Storage Reservoir Site**

Parameter	Minimum Level/Units ¹	Frequency ²
ammonia nitrogen	0.1 mg/L as N	Q
kjeldahl nitrogen	0.2 mg/L as N	Q
nitrate nitrogen	0.2 mg/L as N	Q
nitrite nitrogen	0.1 mg/L as N	Q
Conductivity	µS/cm	Q

Endnotes are at the end of the MRP.

G. Biosolids Storage and Disposal

The following information on the biosolids generated at the Reclamation Plant shall be recorded monthly and reported in the quarterly monitoring reports.

1. Total quantity of biosolids generated during the monitoring period;
2. The location where biosolids were dried or stored on site;
3. Cumulative total quantity of biosolids currently on site including the quantity of biosolids added during this monitoring period;
4. Date and quantity of biosolids removed off site, location of use, recipient (including name and address) and biosolids disposal method (including crops grown if applicable) for all biosolids removed off site;

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

H. Agricultural Site Monitoring

1. An Annual Cropping Plan shall be submitted by November 15 of each year containing, but not limited to, the following items describing the proposed cropping plan for the upcoming calendar year.
 - a. Names, addresses, and telephone numbers of all users of reclaimed waste water at the Agricultural Site.
 - b. For each field, provide the following information:
 - i. Location using a U.S. Geological Survey 7.5 minute topographic quadrangle map;
 - ii. Acreage, crop names, and types (i.e. fodder, seed or other);
 - iii. Approximate planting dates;
 - iv. Approximate harvest dates;
 - v. Irrigation method;
 - vi. Volume of water expected to be used based on crop needs (irrigation efficiency, evapotranspiration and need for maintenance leaching). Provide basis for calculations including field data or references;
 - vii. Amount of nitrogen expected to be applied to the crop from all sources including estimates of nitrogen available in the root zone;
 - viii. Amount of nitrogen expected in the harvested crop per harvest and total amount expected to be removed from the field per year;
 - ix. Describe the fate of nitrogen that has been applied or is available in the root zone that is not accounted for in the crops harvested.
2. The following shall be reported in the Agricultural Site Monitoring, Operation, and Chemical Use Report on a quarterly basis.
 - a. Monthly analyses and a summary, by a certified soil scientist or qualified agronomist, of the amount of water and nitrogen applied or is available to the crops per irrigated field. The analyses must compare the actual water

and nitrogen applications to those predicted in the Annual Cropping Plan and discuss any significant differences. Additionally, this monthly report must include an evaluation of the actual crop production using normally accepted quantifiable measure of crop growth status to that projected in the Annual Cropping Plan at harvest.

- b. For each harvest completed during the quarter, the report must include the total amount of nitrogen harvested based on the results of site-specific plant tissue analyses. Conservative estimates of the amount of nitrogen harvested may be used in lieu of site-specific plant tissue analysis provided the estimate is justified by literature references. The production from the field may be determined by multiplying the number of bales by an average bale weight. The results of this calculation must be compared to the total amount of nitrogen applied to the crop from all sources (recycled water, other water, and fertilizer) or available during production. Any significant differences must be addressed in Farm Management Plan or Annual Cropping Plan.
 - c. Recycled water balance for the quarter and the crop cycle including: the amount of water applied to each field, water losses due to irrigation efficiency, evapotranspiration, and the amount of water in storage in the vadose zone or available for percolation below the root zone. These values must be compared to the values proposed in the Annual Cropping Plan and any significant differences must be addressed. If recycled water is blended with non-recycled water to meet an increased water demand during warmer seasons or for other reasons, the quantity and percentage of recycled water and the total water applied shall be determined and reported. Nitrogen content of non-recycled water shall also be determined and reported.
3. Monthly, the Discharger shall make a Recycled Water Treatment and Use Report that includes, but is not limited to the following information.
 - a. Results of a daily use area inspection (when recycled water is used) to ensure that application of recycled water is consistent with use area criteria specified in California Code Of Regulations, title 22, sections 60304(d) and 60310. Findings of the inspections shall be recorded in a permanent logbook maintained at the Facility.
 - b. The Operating Records as required in California Code of Regulations, title 22, section 60329 to demonstrate that all recycled water applied complies with the Department of Public Health's water recycling requirements specified in the Waste Discharge Requirements. The information must include verification that the treatment levels for disinfected secondary recycled water were achieved and that the methods of recycled water application were implemented as required in California Code of Regulations, title 22, section 60304(d).
 4. An Agricultural Site Operations Report shall be submitted quarterly, maintained onsite, and made available for inspection by Water Board staff.

I. Chemical Use Monitoring

The Discharger shall 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 Agricultural Site in a permanent log book. Chemical use information shall be submitted to the Water Board on a quarterly basis.

J. Operation and Maintenance Monitoring

A brief summary of any operational problems and maintenance activities that may affect effluent quality shall be submitted to the Water Board with each monthly monitoring report. This summary shall discuss:

1. Any modifications or additions to the waste water conveyance system, treatment facilities, disposal/water recycling facilities, or storage facilities;
2. Any major maintenance conducted on the waste water conveyance system, treatment facilities, disposal/water recycling facilities, or storage facilities;
3. Any major problems occurring in the waste water conveyance system, treatment facilities, disposal/water recycling facilities, or storage facilities;
4. The calibration of any flow measuring devices.

K. Sampling and Analytical Methods

The Discharger must collect, store, and analyze samples according to the most recent version of appropriate USEPA methods and in accordance with a sampling and analysis plan approved by the Water Board's Executive Officer. A laboratory certified for these analyses by the State of California Environmental Laboratory Program or approved by the Executive Officer must perform all water analyses. All reporting of laboratory results must identify the specific methods of analysis.

1. Definitions

Median - The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the $n/2$ and $n/2+1$).

Method Detection Limit (MDL) - MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in Code of Federal Regulations, Title 40, Part 136, Attachment D, revised as of July 3, 1999.

Minimum Level (ML) - ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure,

assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Not Detected (ND) - Sample results that are less than the laboratory's MDL.

Reporting Level (RL) - RL is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this MRP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

2. General

Analytical method for each constituent shall be selected to provide the reporting limits specified in this MRP.

3. Reporting Protocols

The Discharger shall report with each sample result the applicable reported ML and the current MDL.

The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols.

- a. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported. For the purposes of data collection, the laboratory shall 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.
- c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
- d. The Discharger is to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data

derived from extrapolation beyond the lowest point of the calibration curve.

- e. When determining an average of more than one analytical result, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure.
 - i. The data set shall be ranked from low to high, ranking the reported ND determinations the lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
 - ii. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

4. Priority Pollutants

The inorganics, volatile organics, semi-volatile organics, and pesticides and PCBs to be analyzed shall be from the U.S. Environmental Protection Agency (USEPA) List of Priority Pollutants (Attachment E). Monitoring for the following Attachment E constituents are not required: polychlorinated biphenyls (Constituent Nos. 119 - 125), dioxin (Constituent No. 16), and asbestos (Constituent No. 15). The required MLs are contained in Attachment E.

The Discharger shall follow the chemical nomenclature of priority pollutant constituents as shown in Attachment E. All detection levels for priority pollutants will be equal to or lower than the minimum level specified in Attachment E except for the following exceptions. In the case of hexavalent chromium, use appropriate USEPA methods that will quantify concentrations to least 2.5 µg/L. In the case of mercury for disinfected secondary treatment effluent and groundwater samples, use appropriate USEPA methods that will provide an ML of at least 0.01 µg/L.

5. N-nitrosodimethylamine (NDMA)

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 General Provisions for Monitoring and Reporting (Attachment D), if the discharger uses a modified USEPA method (e.g., Method 1625) in order to achieve a reporting limit of 0.002 µg/L.

II. REPORTING

A. General Provisions

1. The Discharger shall comply with the "General Provisions for Monitoring and Reporting," dated September 1, 1994, which is attached to and made part of this MRP (Attachment D).
2. The Discharger shall arrange all reported data in tabular format. The data shall be summarized to clearly illustrate whether the Facility is operating in compliance this MRP.
3. The results of any analysis taken more frequently than required for the parameters and locations specified in this MRP shall be submitted to the Water Board in the next monitoring report.
4. The Discharger must attach to any monitoring report provided to the Water Board a certified cover letter containing the information in Attachment F. The information contained in the certified cover letter must clearly identify any violations of this MRP and the Waste Discharge Requirements for the Facility, discuss corrective actions taken or planned, and propose a time schedule for completing identified corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation. The Discharger shall notify the Water Board by letter when compliance with requirement has been achieved.
5. The monitoring and reporting required by this program becomes effective on the first day of month after the MRP's signature date. The monitoring and reporting prescribed in MRP 00-57A06 applies to all data collected before the first day of the month after the MRP's signature date.
6. The Discharger shall furnish to the Water Board within a reasonable time, any information that the Water Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this MRP or to determine compliance with the MRP. Upon request, the Discharger shall also furnish to the Water Board copies of records required to be kept by this MRP. (Water Code, section 13267)

B. Report Content and Submittal Periods

Monthly and annual reporting due dates have been extended from the statewide standard guidelines at the Discharger's justified request. The Discharger must submit monitoring reports according to the following schedule:

1. Monthly monitoring reports shall be submitted to the Water Board by the 15th working day of the second month following each monthly monitoring period. Data that is required on a frequency longer than one month will be incorporated into the monthly report for the month the analyses are required. The following treatment plant reports shall be provided on a monthly frequency.

- a. Flow Monitoring
 - b. Influent Monitoring Report
 - c. Effluent Monitoring Report
 - d. Operation and Maintenance Report
 - e. Recycled Water Treatment and Use Report
2. Quarterly monitoring reports shall be submitted to the Water Board by the 15th working day of the second month following each quarterly monitoring period. This reporting schedule provides the Discharger with an additional 14 days beyond the Water Board's standard reporting schedule because the Discharger has indicated additional time was needed to provide for logistical constraints associated with access to water supply wells and monitoring wells located on land not owned or controlled by the Discharger.
3. The quarterly monitoring period shall end on March 31st, June 30th, September 30th, and December 31st of each calendar year. 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 shall be provided on a quarterly frequency:
- a. Groundwater Monitoring Report
 - b. Groundwater Extraction Operations Report
 - c. Agricultural Site Monitoring Report
 - d. Agricultural Vadose Zone Monitoring Report
 - e. Agricultural Site Monitoring, Operations, and Chemical Use Monitoring Report
 - f. Chemical Use Monitoring Report
 - g. Storage Reservoir Site Vadose Zone Monitoring Report
 - h. Biosolids Storage and Disposal Report
4. An annual monitoring report for the period from January through December shall be submitted by March 1st of each year. The report must contain the following:
- a. Treatment Plant
 - i. A summary and evaluation of the monthly and quarterly information in Reporting Requirement II.B.1 and II.B.2, which also includes compliance status;
 - ii. The names and grades of all the certified operators;
 - iii. The Annual Federal Biosolids Report (40 Code of Federal Regulations Part 503).
 - b. Groundwater Monitoring
 - i. Discussion of groundwater monitoring results, specifically:
 - spatial and temporal trends in nitrate and TDS concentrations;
 - detection of or increase in any parameters listed in Tables 7, 8, and 9 that may indicate the Discharger's activities have caused additional impacts to groundwater;
 - detection of any parameter above its water quality objective.

- ii. Summary of groundwater monitoring data and evaluation of adequacy of the existing monitoring well network to:
 - establish the lateral and vertical extent of the nitrate/TDS groundwater plume and monitor for future migration;
 - monitor for any groundwater quality impacts involving other parameters (as identified in Tables 7, 8, and 9).
- iii. If indicated by b.ii, the Discharger shall propose additional monitoring wells and a well completion schedule to ensure the well network will adequately monitor groundwater impacts quality.
- iv. If a sample cannot be obtained from any well specified in Tables 4, 5 and 6, the Discharger shall include a explanation of the cause of the problem and describe how the monitoring deficiency will be corrected.
- v. If a sample cannot be obtained from any well listed in Table 4 for three consecutive quarterly monitoring events, the Discharger shall propose corrective actions that address the current and anticipated data needs for the groundwater monitoring program and provide a schedule for implementation of the corrective action. The proposed corrective action shall be submitted to the Water Board within 60 days after the third missed sampling event.
- vi. A summary of the compliance record and corrective actions needed or taken or planned to bring the discharge into full compliance with this MRP and the Facilities waste discharge requirements.

5. An Annual Cropping Plan as described in I.H.1 shall be submitted on November 15 of each year.

Ordered by: 
LAURI KEMPER
ASSISTANT EXECUTIVE OFFICER

Dated: March 9, 2011

Attachments: MRP - A. Groundwater Monitoring Network
MRP - B. Agricultural Site Vadose Zone Monitoring Locations
MRP - C. Storage Reservoir Site Vadose Zone Monitoring Locations
MRP - D. General Provisions for Monitoring and Reporting
MRP - E. Priority Pollutant List
MRP - F. Sample Monitoring Report Cover Letter

Endnotes:

ⁱ Units: mg/L = milligrams/liter; µg/L = micrograms/liter; ng/L = nanograms/liter; N = nitrogen; CFU/100 ml = colony forming units/100 milliliters; kg = kilograms; C = centigrade; MGD = million gallons/day; µS/cm = micro-Seimens/centimeter; NTU = nephelometric turbidity units; bgs = below ground surface.

ⁱⁱ Frequencies: D = daily; W = weekly; M = monthly; Q= quarterly; SA = semiannually; A = annually; TriA = triannual (every three years).

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- iii BOD = biochemical oxygen demand (5 day, 20°Celsius) of an unfiltered influent sample; filtered sample for final effluent.
- iv COD = chemical oxygen demand of an unfiltered influent sample; filtered sample for final effluent.
- v TPH = total petroleum hydrocarbons. Use USEPA Test Method SW 8015 with calibration based on the appropriate fuel standard.
- vi Grab samples as defined for respective parameters in current SAP. Note, for influent and effluent samples, 1,2,4-trichlorophenol, hexchlorobenzene, hexachlorobutadiene, hexachlorethane, & naphthalene will be collected as 24-hour composites rather than grab samples.
- vii Total trihalomethanes = sum of bromodichloromethane, bromoform, chloroform, and dibromochloromethane.
- viii Analyses shall be conducted for analytes with the specified minimum levels listed in Attachment E with the exception of hexavalent chromium, which will have a minimum level of 2.5 µg/L and mercury will have a minimum level of 0.01 µg/L. PCBs = polychlorinated biphenyls.
- ix The parameter must be reported in the same units as specified for the minimum level. Minimum level is defined in Section I. K. 1. of the MRP.
- x MBAS = methylene blue active substances.
- xi Dissolved organic carbon of a filtered sample.
- xii For disinfected secondary effluent monitoring inorganic analyses shall be conducted for analytes with the specified minimum levels listed in Attachment E with the exception of hexavalent chromium, which will have a minimum level of 2.5 µg/L, and mercury, which will have a minimum level of 0.04 µg/L.
- xiii MTBE = methyl tertiary butyl ether.
- xiv For each 24-hour period, record and report the average turbidity, amount of time (minutes) the turbidity exceeded 5 NTUs (if any), and the maximum turbidity.
- xv The modal contact time at the highest and lowest flows shall be recorded and reported for each 24-hour period where there is production of disinfected tertiary treated waste 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 shall be derived from a predetermined plot correlating modal contact times to varying flow conditions. (CCR, Title 22, section 60301.600)
- xvi CT = chlorine residual (mg/L) x modal contact time (minutes). When chlorine is used as the disinfectant in production of disinfected tertiary treated waste water, the lowest CT value shall be calculated for each 24-hour period. 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.

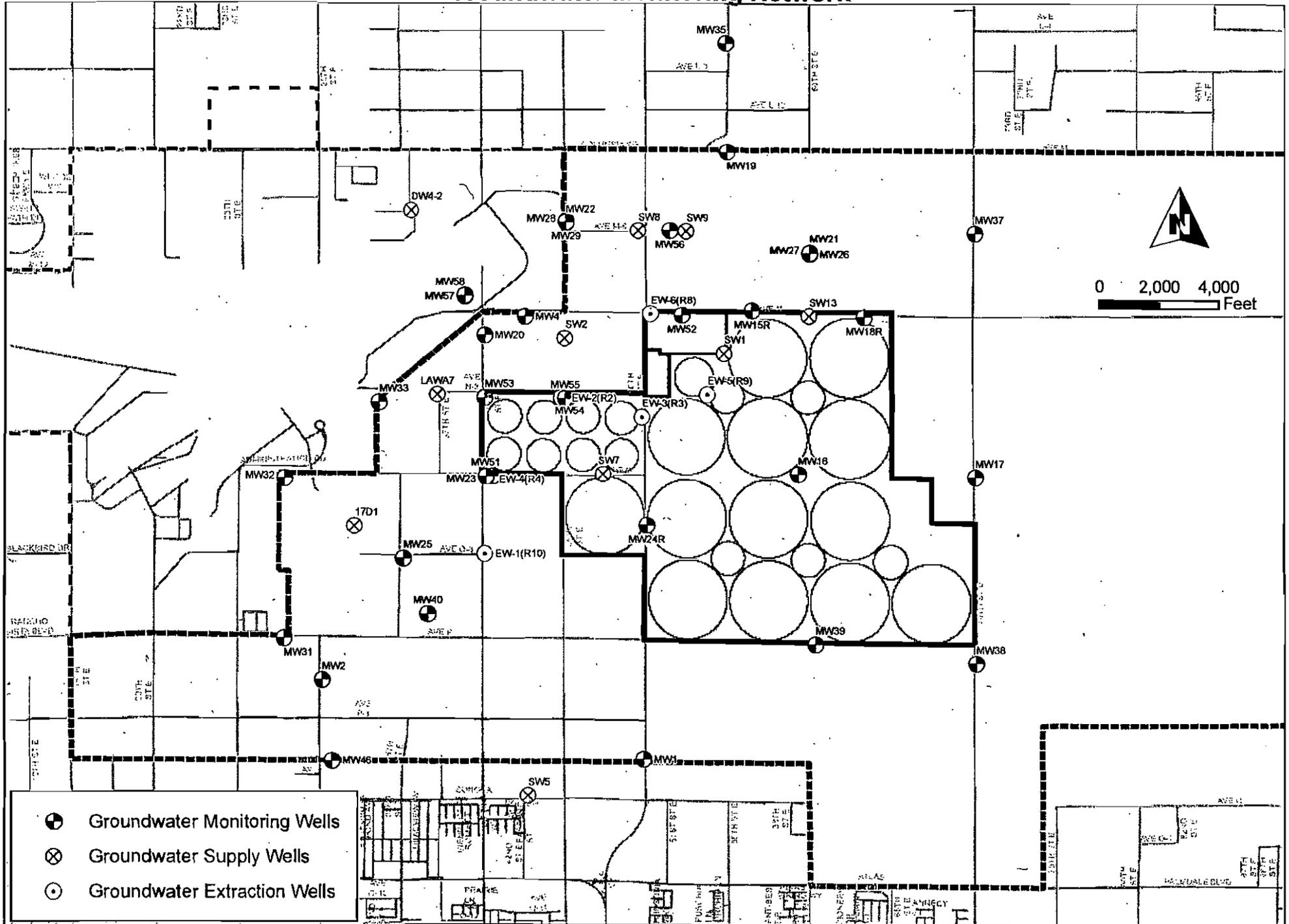
Calculate CT values for each of the four conditions. The lowest of the calculated CT values is the lowest CT for the period.

^{xvii} TOC = total organic carbon of an unfiltered influent sample; filtered sample for final effluent.

^{xviii} Haloacetic acids (five) = sum of monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, dibromoacetic acid.

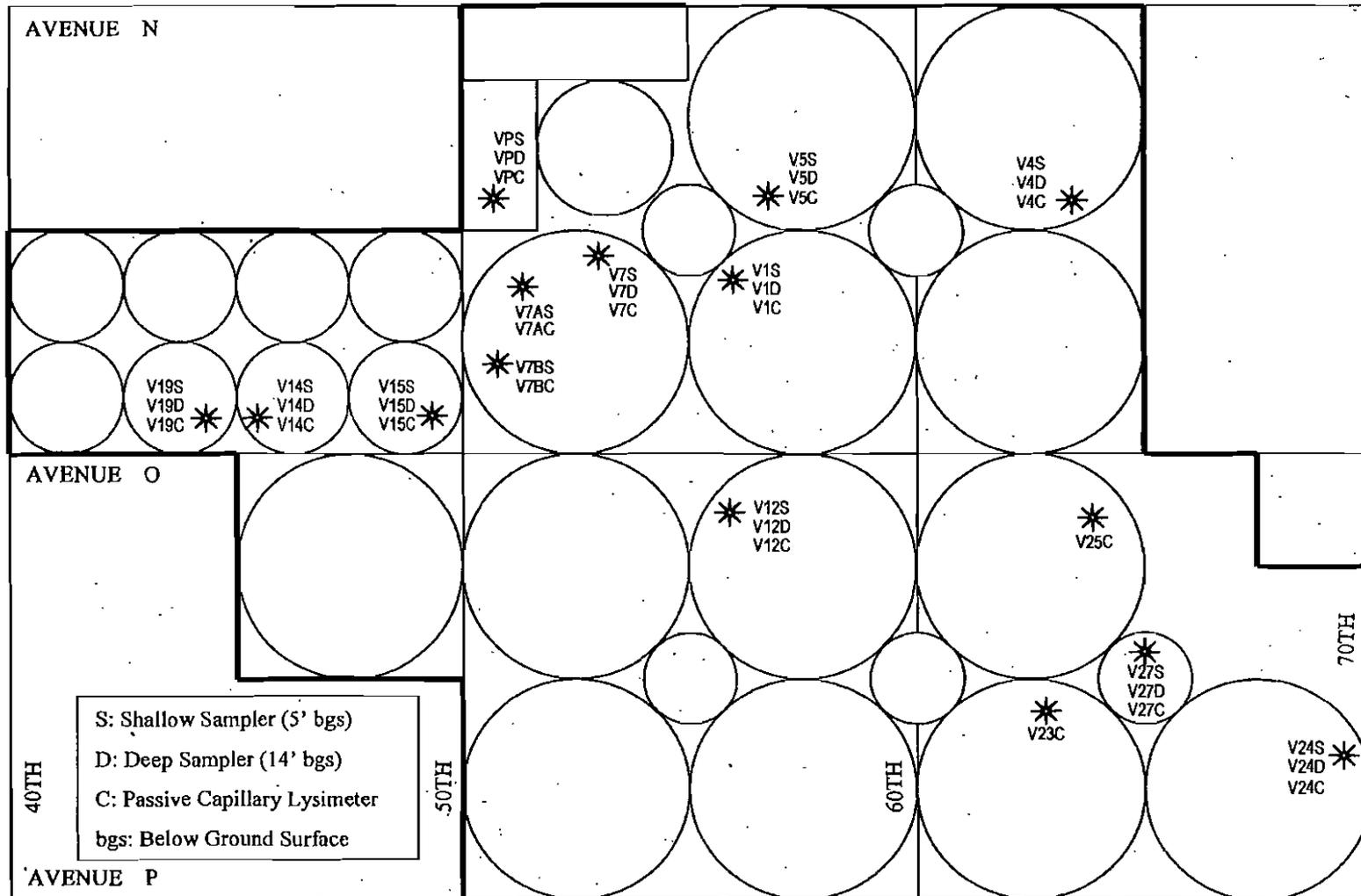
^{xix} Quarterly monitoring for DEHP [bis(2diethylhexyl)phthalate] is only required in the following monitoring wells: MW-2, MW-4, MW-16, MW-22, MW-28, and MW-32.

MRP - Attachment A Groundwater Monitoring Network

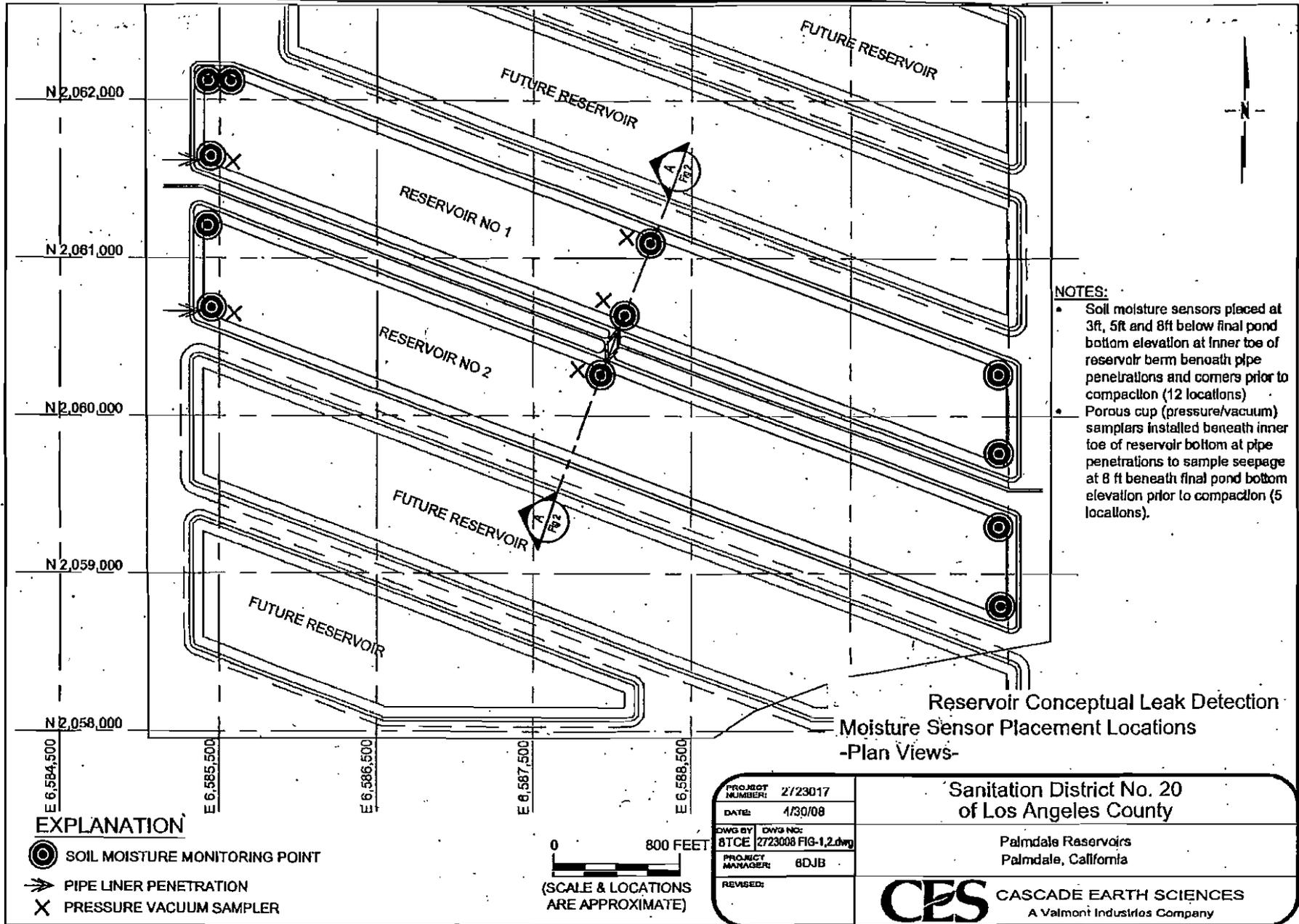


MRP - Attachment B

Palmdale Agricultural Site Vadose Zone Monitoring Locations



MRP - Attachment C. Storage Reservoir Site Vadose Zone Monitoring Locations



MRP - ATTACHMENT D

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 Public Health or a laboratory approved by the Water 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 Water 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 Water 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 Water Board.
- c. The discharger shall provide a brief summary of any operational problems and maintenance activities to the Water 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 Water 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.

MRP - ATTACHMENT E – PRIORITY POLLUTANTS

CTR No.	Priority Pollutant	CAS No.	Reporting Level (µg/L or as noted)	Suggested EPA Test Method
INORGANICS				
1	Antimony	7440360	5	6020/200.8
2	Arsenic	7440382	1	6020/Hydride
15	Asbestos	1332214	0.2 MFL >10µm	EPA/600/R-93/116(PCM)
3	Beryllium	7440417	1	6020/200.8
4	Cadmium	7440439	0.25	1638/200.8
5a	Chromium (total)	7440473	2	6020/200.8
5b	Chromium (VI)	18540299	5	7199/1636
6	Copper	7440508	0.5	6020/200.8
14	Cyanide	57125	5	9012A
7	Lead	7439921	0.5	1638
8	Mercury	7439976	0.0005	1669/1631
9	Nickel	7440020	5	6020/200.8
10	Selenium	7782492	5	6020/200.8
11	Silver	7440224	1	6020/200.8
12	Thallium	7440280	1	6020/200.8
13	Zinc	7440666	10	6020/200.8
VOLATILE ORGANICS				
28	1,1-Dichloroethane	75343	1	8260B
30	1,1-Dichloroethene	75354	0.5	8260B
41	1,1,1-Trichloroethane	71556	2	8260B
42	1,1,2-Trichloroethane	79005	0.5	8260B
37	1,1,2,2-Tetrachloroethane	79345	0.5	8260B
75	1,2-Dichlorobenzene	95501	2	8260B
29	1,2-Dichloroethane	107062	0.5	8260B
31	1,2-Dichloropropane	78875	0.5	8260B
101	1,2,4-Trichlorobenzene	120821	5	8260B
76	1,3-Dichlorobenzene	541731	2	8260B
32	1,3-Dichloropropene	542756	0.5	8260B
77	1,4-Dichlorobenzene	106467	2	8260B
17	Acrolein	107028	5	8260B
18	Acrylonitrile	107131	2	8260B
19	Benzene	71432	0.5	8260B
20	Bromoform	75252	2	8260B
34	Bromomethane	74839	2	8260B
21	Carbon Tetrachloride	56235	0.5	8260B
22	Chlorobenzene (mono chlorobenzene)	108907	2	8260B
24	Chloroethane	75003	2	8260B
25	2-Chloroethyl vinyl ether	110758	1	8260B
26	Chloroform	67663	0.5	8260B
35	Chloromethane	74873	2.0	8260B
23	Dibromochloromethane	124481	0.5	8260B
27	Dichlorobromomethane	75274	0.5	8260B
36	Dichloromethane	75092	2	8260B
33	Ethylbenzene	100414	2	8260B
88	Hexachlorobenzene	118741	1	8260B

MRP - ATTACHMENT E – PRIORITY POLLUTANTS

CTR No.	Priority Pollutant	CAS No.	Reporting Level (µg/L or as noted)	Suggested EPA Test Method
89	Hexachlorobutadiene	87683	1	8260B
91	Hexachloroethane	67721	1	8260B
94	Naphthalene	91203	10	8260B
38	Tetrachloroethene	127184	0.5	8260B
39	Toluene	108883	2	8260B
40	trans-1,2-Dichloroethylene	156605	1	8260B
43	Trichloroethene	79016	2	8260B
44	Vinyl chloride	75014	0.5	8260B
SEMI-VOLATILE ORGANICS				
60	1,2-Benzanthracene	56553	5	8270C
85	1,2-Diphenylhydrazine	122667	1	8270C
45	2-Chlorophenol	95578	2	8270C
46	2,4-Dichlorophenol	120832	1	8270C
47	2,4-Dimethylphenol	105679	2	8270C
49	2,4-Dinitrophenol	51285	5	8270C
82	2,4-Dinitrotoluene	121142	5	8270C
55	2,4,6-Trichlorophenol	88062	10	8270C
83	2,6-Dinitrotoluene	606202	5	8270C
50	2-Nitrophenol	25154557	10	8270C
71	2-Chloronaphthalene	91587	10	8270C
78	3,3-Dichlorobenzidine	91941	5	8270C
62	3,4-Benzofluoranthene	205992	10	8270C
52	4-Chloro-3-methylphenol	59507	5	8270C
48	4,6-Dinitro-2-methylphenol	534521	10	8270C
51	4-Nitrophenol	100027	10	8270C
69	4-Bromophenyl phenyl ether	101553	10	8270C
72	4-Chlorophenyl phenyl ether	7005723	5	8270C
56	Acenaphthene	83329	1	8270C
57	Acenaphthylene	208968	10	8270C
58	Anthracene	120127	10	8270C
59	Benzidine	92875	5	8270C
61	Benzo(a)pyrene (3,4-Benzopyrene)	50328	2	8270C
63	Benzo(g,h,i)perylene	191242	5	8270C
64	Benzo(k)fluoranthene	207089	2	8270C
65	Bis(2-chloroethoxy)methane	111911	5	8270C
66	Bis(2-chloroethyl)ether	111444	1	8270C
67	Bis(2-chloroisopropyl) ether	39638329	10	8270C
68	Bis(2-ethylhexyl)phthalate	117817	5	8270C
70	Butyl benzyl phthalate	85687	10	8270C
73	Chrysene	218019	5	8270C
81	Di-n-butyl phthalate	84742	10	8270C
84	Di-n-octyl phthalate	117840	10	8270C
74	Dibenzo(a,h)anthracene	53703	0.1	8270C
79	Diethyl phthalate	84662	2	8270C
80	Dimethyl phthalate	131113	2	8270C
86	Fluoranthene	206440	10	8270C
87	Fluorene	86737	10	8270C

MRP - ATTACHMENT E – PRIORITY POLLUTANTS

CTR No.	Priority Pollutant	CAS No.	Reporting Level (µg/L or as noted)	Suggested EPA Test Method
90	Hexachlorocyclopentadiene	77474	5	8270C
92	Indeno(1,2,3-c,d)pyrene	193395	0.05	8270C
93	Isophorone	78591	1	8270C
98	N-nitrosodiphenylamine	86306	1	8270C
96	N-nitrosodimethylamine	62759	5	8270C
97	N-nitrosodi-n-propylamine	621647	5	8270C
95	Nitrobenzene	98953	10	8270C
53	Pentachlorophenol	87865	1	8270C
99	Phenanthrene	85018	5	8270C
54	Phenol	108952	1	8270C
100	Pyrene	129000	10	8270C
PESTICIDES – PCBS				
110	4,4-DDD	72548	0.05	8081A
109	4,4-DDE	72559	0.05	8081A
108	4,4-DDT	50293	0.01	8081A
112	alpha-Endosulfan	959988	0.02	8081A
103	alpha-Hexachlorocyclohexane (BHC)	319846	0.01	8081A
102	Aldrin	309002	0.005	8081A
113	beta-Endosulfan	33213659	0.01	8081A
104	beta-Hexachlorocyclohexane	319857	0.005	8081A
107	Chlordane	57749	0.1	8081A
106	delta-Hexachlorocyclohexane	319868	0.005	8081A
111	Dieldrin	60571	0.01	8081A
114	Endosulfan sulfate	1031078	0.05	8081A
115	Endrin	72208	0.01	8081A
116	Endrin Aldehyde	7421934	0.01	8081A
117	Heptachlor	76448	0.01	8081A
118	Heptachlor Epoxide	1024573	0.01	8081A
105	Lindane (gamma-Hexachlorocyclohexane)	58899	0.02	8081A
119	PCB-1016	12674112	0.5	8082
120	PCB-1221	11104282	0.5	8082
121	PCB-1232	11141165	0.5	8082
122	PCB-1242	53469219	0.5	8082
123	PCB-1248	12672296	0.5	8082
124	PCB-1254	111097691	0.5	8082
125	PCB-1260	111096825	0.5	8082
126	Toxaphene	8001352	0.5	8081A
16	2,3,7,8-TCDD (dioxin)	1746016	5.00 x 10 ⁻⁶	8290 (HRGC) MS

MRP - ATTACHMENT F

Date _____ Monitoring Report Cover Letter

California Regional Water Quality Control Board
 Lahontan Region
 2501 Lake Tahoe Boulevard
 South Lake Tahoe, CA 96150

Facility Name:

Address:

Contact Person:

Job Title:

Phone:

Email:

WDR/NPDES Order Number:

WDID Number:

Type of Report (circle one):

Monthly Quarterly Semi-Annual Annual Other

Month(s) (circle applicable month(s)**:

JAN FEB MAR APR MAY JUN
JUL AUG SEP OCT NOV DEC

*annual Reports (circle the first month of the reporting period)

Year:

Violation(s)? (Please check one):

 NO

 YES*

*If YES is marked complete a-g (Attach Additional information as necessary)

a) Brief Description of Violation:

b) Section(s) of WDRs/NPDES
Permit Violated:
