

Lahontan Regional Water Quality Control Board

February 24, 2022

WDID No. 6B190107017
GeoTracker Global ID: WDR100030189

TO: ATTACHED MAILING LIST as bcc

Revision of Waste Discharge Requirements, Board Order No. R6V-2002-0053 with Subsequent Amendments and Board Order No. R6V-2006-0051 for Los Angeles County Sanitation District's Lancaster Water Reclamation Plant, Lancaster, Los Angeles County

Lahontan Regional Water Quality Control Board (Water Board) staff are proposing to revise waste discharge requirements for the Los Angeles County Sanitation District's Lancaster Water Reclamation Plant (Board Order No. R6V-2002-0053 with subsequent amendments and Board Order No. R6V-2006-0051). If you are interested in reviewing and providing written comments regarding this proposed order, then please complete the following steps.

1. Add project specific details to your communication:
 - Include the subject line "LACSD Lancaster Water Reclamation Plant WDID No. 6B190107017 Comments."
 - Address to Lahontan Regional Water Quality Control Board attention of Sergio Alonso.
2. Submit comments via one of two ways with arrival by **April 12, 2022**:
 - Email to Lahontan@waterboards.ca.gov.
 - Mail to 15095 Amargosa Rd., Bldg. 2 – Suite 210, Victorville, CA 92394.

In addition to or instead of written comments, you may provide verbal comments during the scheduled Water Board meeting. This item is tentatively scheduled for consideration during the regular board meeting on June 8 and 9, 2022. You can view the Water Board's meeting agenda 10 days before the meeting on our [web site](#) to ensure the item remains scheduled for that meeting.

If you need further information regarding the relevant meeting, please contact our office at (760) 241-6583. Additionally, if you need further information regarding this agenda item, please contact Sergio Alonso at (760) 243-7324 or sergio.alonso@waterboards.ca.gov or TJ Middlemis-Clark at (530) 542-5463 or timothy.middlemis-clark@waterboards.ca.gov.



Angelica Soto
Office Technician

cc: Sergio Alonso, Water Resource Control Engineer
Timothy Middlemis-Clark, Acting Senior Water Resource Control Engineer

Enc: Tentative Revision of Waste Discharge Requirements, LACSD Lancaster Water Reclamation Plant

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

**BOARD ORDER NO. R6V-2022-TENTATIVE
WDID NO. 6B190107017**

**REVISED WASTE DISCHARGE REQUIREMENTS
AND WATER RECLAMATION REQUIREMENTS**

FOR

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

Los Angeles County

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

1. DISCHARGER

The Sanitation Districts of Los Angeles County, District No. 14, Lancaster (Discharger) provides domestic wastewater collection, treatment, and disposal services for the City of Lancaster (City). The Discharger owns and operates the Lancaster Water Reclamation Plant. The City owns and operates a separately regulated sewer collection system. The Discharger also operates a separately regulated trunk line sewer collection system connecting the City collection system to the Discharger's plant. A portion of the effluent is disposed to Piute Ponds, located on Edwards Air Force Base (EAFB). As landowner, the United States Air Force (USAF) is a responsible party with respect to Piute Ponds. The Discharger and EAFB have a Memorandum of Understanding (MOU) that was approved by both entities in 1991, providing for coordination between the Discharger and EAFB regarding Piute Ponds discharge, entry, and maintenance.

2. REASON FOR ACTION

The Water Board is revising waste discharge requirements (WDRs) and the monitoring and reporting program (MRP No. R6V-2022-Tentative) for the reasons described in this section.

2.1. Maintain Discharge to Eastern Agricultural Site

Allow continued discharge of tertiary disinfected recycled water use for irrigating the Eastern Agricultural Site (EAS). Board Order No. R6V-2002-0053A2, Provision II.H.3., required the Discharger to file a revised report of waste discharge and obtain revised WDRs from the Water Board for continued use of the EAS beyond 2020. The Discharger submitted a complete report of waste discharge in December 2020; with the adoption of this order, this requirement in Board Order No. R6V-2002-0053A2 will be satisfied. In a letter dated December 1, 2020, the Water Board's Executive Officer

indicated that no enforcement action would be taken for continued discharge of recycled water to the EAS after December 31, 2020, provided compliance with WDRs in effect were maintained.

2.2. Investigate Nature and Extent of Polluted Water

Require the investigation of the nature and extent of groundwater polluted with nitrate and total dissolved solids (TDS) concentrations that exceed respective water quality objectives listed in the *Water Quality Control Plan for the Lahontan Region* (Basin Plan) and emanating from the decommissioned, unlined oxidation ponds. Use of these former ponds ceased in 2012. However, leakage from the former oxidation ponds has resulted in elevated concentrations of TDS in downgradient groundwater monitoring wells. The construction and use of the Storage V Reservoirs have mitigated the leakage to groundwater that occurred during the operation of the oxidation ponds.

2.3. Remove Sludge from Unlined Oxidation Ponds

Included a time schedule for sludge removal from the decommissioned, unlined oxidation ponds. After sludge in these lagoons is sufficiently dry, all remaining sludge in the lagoon bottoms must be removed and hauled offsite for proper disposal, in compliance with the United States Environmental Protection Agency (USEPA) biosolids regulations of the Code of Federal Regulations (CFR), title 40, section 503 (40 CFR 503). Following sludge removal, the oxidation ponds must then be abandoned.

2.4. Update and Consolidate Board Order Requirements

Update and consolidate the requirements of Board Order No. R6V-2002-0053 and subsequent amendments, along with the requirements of Board Order No. R6V-2006-0051 into one consolidated board order. The Discharger's method of treatment described in Board Order No. R6V-2002-0053, and its amendments, has changed significantly since its adoption.

2.5. Establish Effluent Limitations

Establish new effluent limitations for chlorine, total residual; total suspended solids (TSS); and total nitrogen (TN).

2.6. Classify Piute Ponds

Establish that Piute Ponds, receiving recycled water discharges and located on land owned by EAFB, are waters of the state, and discharges must not adversely affect the surface water beneficial uses associated with Piute Ponds. Include requirements for both surface water and groundwater beneficial use protections consistent with receiving water quality objectives and prohibitions in the Basin Plan.

2.7. Note Title 27 Exemption

Establish that discharges from the Facility qualify for an exemption of California Code of

Regulations (CCR), title 27, sections 20090(a) and (b), because the effluent discharged is in compliance with the applicable Basin Plan.

2.8. Former Nebeker Ranch

Remove requirements for the Discharger to collect groundwater samples at the former Nebeker Ranch and include a time schedule for proposed further use or destruction of these wells. Groundwater monitoring wells at the former Nebeker Ranch are property of the Discharger pursuant to a November 14, 1986, letter from the Discharger to Eugene Nebeker (previous owner of Nebeker Ranch). Groundwater monitoring wells at the former Nebeker Ranch have not been sampled since 2015. Prior to well destruction, a groundwater sample must be collected.

Rescind individual Water Recycling Requirements for the former Nebeker Ranch.

2.9. Approve Industrial Pretreatment Program

Approve the Discharger's Industrial Pretreatment Program.

2.10. Incorporate Toxicity Monitoring

Incorporate toxicity monitoring requirements.

2.11. Add GeoTracker Upload Requirements

Continue the requirement that all reports and data must be uploaded to the State Water Board's GeoTracker database.

2.12. Update Permit Contents

Include language consistent with current state law, requirements, and policies.

3. FACILITY SETTING

For the purposes of this board order, the Lancaster Water Reclamation Plant and associated effluent storage facilities and disposal areas owned by the Discharger are the "Facility." The Facility has a design average daily flow of 18 million gallons per day (MGD) and currently provides tertiary treated disinfected wastewater by utilizing the following: comminution, grit removal, primary sedimentation, activated sludge treatment with biological nitrification and denitrification, secondary sedimentation, inert-media gravity filtration, and chloramine disinfection. Solids processing occurs onsite and biosolids are hauled to an offsite location for composting.

Effluent from the Facility is discharged to on-site storage reservoirs and from there delivered as recycled water to Piute Ponds, Apollo Community Park, the EAS (owned by the Discharger and part of the Facility), onsite uses, and various locations within the Lancaster area.

3.1. Location

3.1.1. General

The Facility is located approximately five miles north of central Lancaster between California State Highway 14 and Sierra Highway at West Avenue D. The EAS is located one mile south and seven miles east of the Lancaster Water Reclamation Plant. These locations are shown on Attachment A.

3.1.2. Legal Description

The main wastewater treatment plant Facility is located within Township 8 North (T8N), Range 12 West (R12W), Sections 9, 15, 16, and 17, of the San Bernardino Baseline and Meridian (SBB&M).

The EAS consists of three adjacent irrigated fodder crop areas.

- Site No. 1 is located within T8N, R11W, Sections 23 and 24; and T8N, R10W, Section 19, SBB&M.
- Site No.2 includes land within T8N, R11W, Section 25, and T8N, R10W, Section 30, SBB&M.
- Site No. 3 includes land within T8N, R11W, Section 35; T8N, R11W, Section 36; and T8N, R10W, Section 31, SBB&M. This site is currently inactive and reserved for future growth flow disposal.

3.1.3. Physical Address

The Facility address is 1865 West Avenue D, Lancaster, CA 93534.

3.1.4. Land and Facility Ownership

The Discharger owns the Wastewater Treatment Plant and EAS parcels. Piute Ponds are on USAF property and located on EAFB lands. The assessor's parcel numbers (APNs) for the main wastewater treatment plant are shown on Attachment B. The APNs for the EAS parcels are shown on Attachment C.

3.2. Land Uses

The Facility is in Los Angeles County, northeast of the intersection of State Route 138 (SR-138) and SR-14 in the City of Lancaster. Commercial and residential areas are located to the northwest, west, and south. To the east of the Facility is Edwards Air Force Base (EAFB), containing Piute Ponds and Rosamond Dry Lake. The County of Los Angeles General Plan designates the Facility land use as "Heavy Industrial" use.

3.3. Topography

The Facility is located within the Antelope Valley in southern California, which is a

closed groundwater basin with no outlet to the ocean. The San Gabriel Mountains are to the south and southwest, and the Tehachapi Mountains lie to the west and northwest. To the east within EAFB is Rosamond Dry Lake. The natural ground-surface gradient at the Facility is relatively flat with a slope towards Rosamond Dry Lake at a gradient of approximately 0.001 feet vertically per horizontal foot. The natural ground-surface gradient at the EAS is approximately 0.003 feet vertically per horizontal foot sloping north towards Rosamond Dry Lake. The EAS lies approximately 7 miles east of the Facility and Piute Ponds are located east of the Facility and southwest of Rosamond Dry Lake.

3.4. Climatology

The Antelope Valley has an arid climate characterized by infrequent rainfall, cold winters and hot summers, and low relative humidity. The mean annual temperature is 61 degrees (°) Fahrenheit (F) and ranges from a high of 110° F in the summer to a low of 2° F in the winter. Precipitation in the vicinity of the Facility averages 4 inches per year. The maximum expected precipitation for a 100-year recurrence interval, 24-hour duration design storm event is approximately 3.81 inches per hour.

3.5. Soils

According to the *Soil Survey of the Antelope Valley Area* developed by the United States Division of Agriculture (USDA), soils of the Mojave Desert are located in a high basin that includes remnants of old regions. The soil association that is closest to the Facility is the Pond-Tray-Oban Association. This soil association is in the basins north of Lancaster and south of Rosamond. The soils are very deep, are moderately well drained, and in places slight to moderate amounts of soluble salts or alkali. Pond soils make up about 55 percent of this association; Tray soils, about 30 percent; and the remaining 15 percent consists of Oban soils. The soils of this association are used for irrigated crops. Other areas are used for industrial purposes or for duck ponds and recreation.

3.6. Geology

The Antelope Valley is situated within the northwest portion of the larger Mojave Desert geomorphic province. This province is a wedge-shaped tectonic block bounded to the south and southwest by the San Andreas Fault Zone and on the northwest by the Garlock Fault Zone. The San Andreas and Garlock Fault Zones are approximately 16 miles southwest and 22 miles northwest of the Facility, respectively. There are no known active faults beneath the Facility or within a 5-mile radius of the Facility.

The geologic units beneath the Facility consist of the following, from oldest to youngest.

- Pre-Tertiary plutonic igneous and metamorphic rocks together form the crystalline basement rock beneath the site at depths ranging up to 3,000 feet below ground surface (ft bgs). They are largely granitic intrusions typical of the Sierra Nevada Batholith of late Jurassic or Cretaceous age and range in

composition from hornblende diorite to granite.

- The Tertiary Tropico Group overlies the basement rock and consists of interbeds of shales, limestones, and coarse fluvial sedimentary rocks with basalts and pyroclastic deposits. The Tropico Group has a maximum exposed thickness of 2,800-feet in the vicinity of the site.
- Overlying the Tropic Group is Quaternary-age older and recent alluvium composed of unconsolidated and poorly sorted sands, silts, clays, and gravels.

3.7. Hydrology and Surface Water Quality

The Facility is within the Lancaster Hydrologic Area (Hydrologic Area No. 626.50) of the Antelope Valley Hydrologic Unit (Hydrologic Unit No. 626.00). All water that enters the valley infiltrates into the groundwater, evaporates, or flows overland eventually toward one of three dry lakes: Rosamond Dry Lake, Buckhorn Dry Lake, or Rogers Dry Lake. These are dry lakes that receive water from intermittent streams. Surface water flows support vegetation that is mainly annual forbs and grasses and scattered desert shrubs such as creosote brush, Mormon tea, Joshua tree, saltbush, and rabbitbrush, but big sagebrush grows in some places.

In addition to natural precipitation, waters that enter the Piute Ponds area consist of treated wastewater from the Facility and natural flow from the nearby ephemeral Amargosa Creek drainage. This Board Order specifies effluent and receiving water limitations for the discharge to Piute Ponds receiving waters.

3.8. Hydrogeology and Groundwater Quality

The Facility overlies the Antelope Valley Groundwater Basin (Department of Water Resources Basin No. 6-44, as listed in the Basin Plan). The average depth to groundwater varies between site components. Historically, groundwater flow within the Antelope Valley was to towards the Rosamond and Rogers Dry Lakes. Groundwater near the lakebeds was confined by lakebed playa deposits and under artesian pressure causing numerous springs at the periphery of the playas.

- Beneath the wastewater treatment plant Facility, the depth to groundwater is approximately 44 to 96 ft bgs and has a north/northwesterly flow gradient due to historical agricultural groundwater pumping in that direction.
- Beneath Piute Ponds, the depth to groundwater is approximately 4 to 50 ft bgs and flows radially away from the ponds due to recharge from these artificial ponds.
- Beneath the EAS, the depth to groundwater ranges from 96 to 140 ft bgs and now flows generally from north to south, opposite the historical groundwater flow direction.

Historically, groundwater beneath the site was likely under artesian conditions as groundwater in the Antelope Valley flowed towards Rosamond Dry Lake, surfacing in

springs adjacent to the lakebed. Pumping from agricultural (and residential and commercial) use has caused groundwater level declines and shifted the flow to a northwesterly direction beneath the wastewater treatment plant site, although the groundwater originally flowed towards Rosamond Dry Lake. Effluent discharged to Piute Ponds percolates to groundwater contributing to a groundwater recharge zone. Groundwater beneath Piute Ponds lies in shallow alluvial deposits that overlie the lacustrine clay east of the Facility. Similarly, the direction of groundwater flow beneath the EAS has shifted from flowing towards Rosamond Dry Lake to the south, towards a cone of groundwater depression.

Operation of the former oxidation ponds beginning in 1952 resulted in a continuous source of recharge to groundwater until operations ceased in 2012. During this time, seepage from these ponds contributed to the elevated total dissolved solids (TDS) concentrations below the Facility. TDS concentrations range between 200 to 1,120 mg/L. Nitrate concentrations in this vicinity range from 2.6 to 16.1 mg/L. The concentrations of TDS beneath the Facility indicate a condition of pollution. The Discharger is in the process of delineating TDS and nitrate concentrations downgradient of the former oxidation ponds, and this Board Order includes additional requirements to complete this activity. This Board Order does not establish groundwater cleanup requirements. Table 1 summarizes the data from 2019 obtained from the groundwater monitoring wells adjacent to the Facility, and only represents groundwater quality adjacent to the storage reservoirs. The data include methylene blue active substances (MBAS), TDS, ammonia as nitrogen (NH₄-N), nitrate as nitrogen (NO₃-N), and total Kjeldahl nitrogen (TKN).

Table 1 – 2019 Groundwater Quality Data

Values	MBAS mg/L	TDS mg/L	NH₄-N mg/L	NO₃-N mg/L	TKN mg/L
Minimum	ND	209	ND	2.58	ND
Maximum	0.1	1,120	0.405	16.1	0.378
Average	<0.1	469	<0.1	2.58	0.270

3.9. Salt and Nutrient Management Plan

The Antelope Valley, where the Facility is located, has a Water Board accepted Salt and Nutrient Management Plan, dated May 2014, as required by the State Water Board's Recycled Water Policy, section 6.2. This Board Order requires the Discharger to participate with an existing stakeholder group to maintain the Salt and Nutrient Management Plan.

4. 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. Subsequent amendments to the Basin Plan were adopted. This Board Order implements the Basin Plan, as amended.

4.1. Receiving Waters

The receiving waters include surface waters and groundwater. Receiving surface waters include Piute Ponds, a surface water pond and wetland within the Lancaster Hydrologic Area (Department of Water Resources [DWR] Hydrologic Unit 626.50) of the Antelope Hydrologic Unit. The receiving groundwaters are the part of the Antelope Valley Groundwater Basin (DWR Basin No. 6-44).

4.2. Beneficial Uses

4.2.1. Antelope Valley Groundwater Basin

The beneficial uses of groundwater for the Antelope Valley Groundwater Basin listed in the Basin Plan are the following:

- Municipal and domestic supply (MUN)
- Agricultural supply (AGR)
- Industrial supply (IND)
- Freshwater replenishment (FRSH).

4.2.2. Surface Water in the Lancaster Hydrologic Area

The beneficial uses for surface water in the Lancaster Hydrologic Area listed in the Basin Plan are contained in Table 2.

Table 2 – List of applicable beneficial uses

Beneficial Use	Piute Ponds	Piute Ponds Wetlands	Amargosa Creek
Municipal and domestic supply (MUN)	Not applicable	Not applicable	Applicable
Agricultural Supply (AGR)	Applicable	Applicable	Applicable
Groundwater Recharge (GWR)	Applicable	Applicable	Applicable
Freshwater Replenishment (FRSH)	Applicable	Applicable	Applicable
Water Contact Recreation (REC-1)	Not applicable	Not applicable	Applicable
Non-Water Contract Recreation (REC-2)	Applicable	Applicable	Applicable
Commercial and Sportfishing (COMM)	Not applicable	Not applicable	Applicable

Beneficial Use	Piute Ponds	Piute Ponds Wetlands	Amargosa Creek
Warm Freshwater Habitat (WARM)	Applicable	Applicable	Applicable
Wildlife Habitat (WILD)	Applicable	Applicable	Applicable
Water Quality Enhancement (WQE)	Not applicable	Applicable	Not applicable
Flood Peak Attenuation/Flood Water Storage (FLD)	Not applicable	Applicable	Not applicable

4.3. Surface Water Quality Objectives

Water quality objectives for all surface waters in the Lahontan Region, found on page 3-3 of the Basin Plan, include:

4.3.1. Narrative and Numerical Water Quality Objectives

- Ammonia
- Bacteria, Coliform
- Biostimulatory Substances
- Chemical Constituents
- Chlorine, Total Residual
- Color
- Dissolved Oxygen
- Floating Materials
- Oil and Grease
- Non-Degradation of Aquatic Communities and Populations
- pH
- Radioactivity
- Sediment
- Settleable Materials
- Suspended Materials
- Taste and Odor
- Temperature
- Toxicity
- Turbidity

4.3.2. Water Quality Objectives for Certain Water Bodies

Water quality objectives specific to the Antelope Valley apply to Amargosa Creek and Piute Ponds. These objectives can be found on page 3-11 of the Basin Plan.

- Ammonia, Total
- Acute Toxicity

- Chronic Toxicity
- Temperature and pH Measurement

There are pH-dependent concentration limits for both acute total ammonia toxicity and chronic ammonia toxicity. The total ammonia water quality objectives are dependent on pH values between 6.5 and 9.0. Tables 3-19a and 3-19b from the Basin Plan reference toxicity limitations.

4.4. Groundwater Water Quality Objectives

The water quality objectives for groundwater that apply to all groundwaters in the Lahontan Region are listed in page 3-13 of the Basin Plan and include the following:

4.4.1. Narrative Water Quality Objectives

- Bacteria, Coliform
- Chemical Constituents
- Radioactivity
- Taste and Odors

4.4.2. Site-Specific Numerical Water Quality Objectives

There are no applicable site-specific groundwater quality objectives for the Antelope Valley Groundwater Basin.

4.5. Waste Discharge Prohibitions

There are no watershed-specific Basin Plan waste discharge prohibitions associated with the Facility site area. Chapter 4 of the Basin Plan contains waste discharge prohibitions that apply to the entire Lahontan Region.

5. ANTI-DEGRADATION ANALYSIS

State Water Board Resolution No. 68-16 “*Statement of Policy with Respect to Maintaining High Quality Waters in California*,” also called the non-degradation policy, 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.”

To the extent a discharge covered under this permit may be to high quality waters, this permit authorizes degradation consistent with the Antidegradation Policy and the Basin Plan as described in the following text.

This Board Order establishes a new total nitrogen effluent limitation and other requirements to ensure the discharge will not contribute to a condition of pollution or nuisance and will meet water quality objectives. Additionally, this effluent limitation will result in best practicable treatment or control of the discharge to ensure pollution will not occur and provide the highest water quality consistent with maximum benefit to people of the State. Furthermore, the application of treated effluent to the EAS is expected to reduce the nitrate concentrations percolating into groundwater because of nitrogen uptake by irrigated crops. Previous Facility upgrades ensure that the effluent will not contribute to pollution. Construction of the lined storage reservoirs constitute best practicable treatment or control practices.

The Water Board finds that the discharge is consistent with Resolution No. 68-16 because this board order: (1) requires compliance with the requirements set forth in this Board Order; (2) requires implementation of MRP No. R6V-2022-Tentative; and (3) requires compliance with new effluent limitations for nitrogen to protect beneficial uses.

5.1. Surface Water

The surface water in Piute Ponds are maintained by natural flow from Amargosa Creek and effluent discharges of disinfected tertiary treated wastewater from the Facility. The surface water at Piute Ponds then percolates into the groundwater.

The Discharger currently uses chloramine to disinfect treated effluent. The rolling average chlorine residual in effluent discharged to Piute Ponds during 2019 was non-detect. Chlorine is toxic to aquatic life. The surface water quality objective for total chlorine residual is a median value of 0.002 mg/L and maximum value of 0.003 mg/L. The 2019 discharges to Piute Ponds meet the surface water quality objectives for total chlorine residual.

Surface water concentrations of ammonia in 2019 ranged between non-detect to 2.62 mg/L. Effluent discharged to Piute Ponds in 2019 contained an average ammonia value of 0.98 mg/L at Receiving Station RS-2 and 0.045 mg/L at Receiving Station RS-4. These 2019 sampling results were less than the ammonia surface water quality objective for Piute Ponds and suggest the effluent did not exceed the water quality objective during that time.

Concentrations of coliform bacteria (sourced from warm blooded animals) have not been evaluated for Piute Ponds, however the effluent discharged is disinfected. Piute Ponds provides a habitat for wildlife and waterfowl. These animals may contribute coliform bacteria to Piute Ponds.

5.2. Groundwater

Concentrations of ammonia and nitrate in groundwater surrounding the Lancaster Water Reclamation Plant and the Stage V Reservoirs during 2019 were less than 0.405 mg/L and 16.1 mg/L, respectively. Sample results from these groundwater monitoring wells in 2019 showed average concentrations of 0.267 mg/L for TKN, 0.405 mg/L for ammonia, and 2.58 mg/L for nitrate as nitrogen.

5.3. New Effluent Limitations

To ensure the Discharger meets best practicable treatment or control of the discharge and to ensure that pollution will not occur, this Board Order established effluent limitations protective of beneficial uses. Specifically, new effluent limitations establish an annual average total nitrogen effluent limitation of 10 mg/L. This Board Order requires surface water monitoring of Piute Ponds to determine whether the ammonia receiving water quality criteria protective of beneficial uses is met. Verification that receiving water quality objectives are met will prevent Piute Ponds from becoming an impaired water body with respect to ammonia.

6. CALIFORNIA WATER CODE, SECTION 13241 CONSIDERATIONS

Pursuant to California Water Code (CWC), section 13241, the requirements of this Board Order take into consideration the following factors.

6.1. Past, present, and Probable Future Beneficial Uses of Water

The receiving waters are groundwater of the Antelope Valley Groundwater Basin, an adjudicated basin, and Piute Ponds, a surface water wetland located within Edwards Air Force Base. The requirements in this Board Order are designed to protect all beneficial uses of the receiving water. This Board Order maintains the requirements from previous Board Order No. R6V-2002-0053A2, but also establishes a new total nitrogen effluent limitation protective of these uses. This Board Order establishes new toxicity testing protocols to comply with Basin Plan objectives for ammonia in Piute Ponds.

6.2. Environmental Characteristics of the Hydrographic Unit Under Consideration, Including the Quality of the Water Available Thereto

The Antelope Valley Groundwater Basin is a closed basin and will experience increases in salt loading from natural and anthropogenic sources, over time. Near the Facility, historical data indicate that background TDS concentrations exceeds maximum contaminant levels (MCLs). It is in the best interest of the people of the state for the Discharger to continue producing and managing an effluent complying with Basin Plan water quality objectives and limiting further contribution of groundwater pollution.

6.3. Water Quality Conditions that Could Reasonably be Achieved Through the Coordinated Control of All Factors that will Affect Water Quality in the Area

The Antelope Valley Groundwater Basin is adjudicated, and the Discharger participates

with the Antelope Valley Watermaster in groundwater allocation functions. The Discharger also participates with the Antelope Valley Integrated Regional Water Management Planning Group in establishing priorities for grant applications of projects to improve water quality and coordinated water supply efforts. Continued use of the EAS with nitrogen removal by irrigated fodder crops will ensure receiving groundwater quality is not impacted with respect to nitrogen, but will not remove TDS, which will remain in shallow soil. In the future, the Water Board may separately consider whether to require the Discharger to cleanup underlying polluted groundwater that is present near the treatment plant site. The Discharger has an MOU with EAFB governing access, discharge of recycled water, and maintenance of Piute Ponds.

6.4. Economic Considerations

The costs associated with continued Facility operation are like costs in previous years. The Discharger currently has no planned future major wastewater treatment projects.

6.5. The Need for Developing Housing Within the Region

A small increase in housing trends would not immediately affect treatment capacity. The Facility has a treatment capacity of 18 MGD. Daily flows to the Facility do not exceed the design capacity. Based on recent flows to the Facility, there is no need to upgrade treatment capacity.

6.6. The Need to Develop and Use Recycled Water

The Discharger produces tertiary treated wastewater with discharge to various locations. Recycled water is produced for fodder crop irrigation and for environmental enhancement of Piute Ponds. Recycled water is dechlorinated prior to discharge to Piute Ponds. Under this Board Order, the Facility will continue to produce tertiary treated recycled water for uses in the community that are separately regulated under Board Order No. R6V-2009-0141, Master Recycling Requirements and Waste Discharge Requirements (MWRRs). In the future, the Discharger may identify other recycled water uses and divert portions of the current Piute Pond discharge to those uses.

Increased diversions of water from Piute Pond are subject to CWC, section 1211, that states:

“(a) Prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater, the owner of any wastewater treatment plant shall obtain approval of the [State Water] board for that change. The [State Water] board shall review the changes pursuant to the provisions of Chapter 10 (commencing with Section 1700) of Part 2 of Division 2. (b) Subdivision (a) does not apply to changes in the discharge or use of treated wastewater that do not result in decreasing the flow in any portion of a watercourse.”

7. HUMAN RIGHT TO SAFE, CLEAN, AFFORDABLE, AND ACCESSIBLE WATER

CWC, section 106.3, establishes a state policy that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes and directs state agencies to consider this policy when adopting regulations pertinent to those uses of water. This board order promotes that policy by prohibiting the discharge from causing further groundwater pollution and establishing a new total nitrogen effluent limitation. The groundwater in the area includes a MUN beneficial use. The nearest water supply well (State Well No. 1500485-001) is located about 0.7 miles to the southwest (upgradient) of the Facility.

8. RELATED BOARD ORDERS

8.1. History

A history of Board Orders adopted for the Facility is presented in Table 3:

Table 3 – Board Order History

Board Order	Description	Date Adopted	Date Rescinded or as Noted
6-58-9	Resolution Order Establishing WDRs for Facility Discharges	June 6, 1958	May 24, 1973
6-73-51	Revised WDRs for Facility Discharges	May 24, 1973	March 30, 1972
6-80-2	Revised WDRs for Facility Discharges	January 10, 1980	May 15, 1986
6-85-35	Established recycled water use requirements at Apollo Park	April 11, 1985	December 9, 2009
6-86-58	Established use of secondary treated wastewater at Nebeker Ranch	May 15, 1986	<i>Rescinded by this board order</i>
6-86-61	Revised WDRs for Facility Discharges	May 15, 1986	February 9, 1989
6-89-32	Revised WDRs for Facility Discharges	February 9, 1989	August 12, 1993
CDO 6-93-46	Established CDO for unauthorized discharges	May 14, 1993	June 12, 2002
6-93-75	Revised WDRs for Facility Discharges	August 12, 1993	September 11, 2002
R6V-2002-0043	Rescission of CDO 6-93-46	June 12, 2002	June 12, 2002

Board Order	Description	Date Adopted	Date Rescinded or as Noted
R6V-2002-0053	Revised WDRs for Facility Discharges	September 11, 2002	<i>Rescinded by this board order</i>
CDO R6V-2004-0038	Established CDO for unauthorized overflow discharge to Rosamond Dry Lake	October 13, 2004	June 13, 2013
R6V-2002-0053A1	Amended WDRs for Facility Discharges	July 13, 2005	<i>Rescinded by this board order</i>
R6V-2006-0009	Established MWRRs for Division Street Recycled Water Project	March 8, 2006	June 10, 2009
R6V-2006-0035	Revised WDRS and MWRRs for Facility Discharges to East Agricultural Site	September 14, 2006	March 14, 2007
R6V-2006-0051	Revised WDRs for Facility Discharges to Stage V Storage Reservoirs	November 8, 2006	<i>Rescinded by this board order</i>
R6V-2002-0053A2	Amended WDRs for Facility Discharges	March 14, 2007	<i>Rescinded by this board order</i>
CDO R6V-2004-0038A1	Amended CDO to comply with additional provisions to CDO R6V-2004-0038	November 29, 2007	June 19, 2013
R6V-2009-0034	Revised MWRRs to include municipal and industrial application of recycled water	June 10, 2009	December 9, 2009
R6V-2009-0141	Revised MWRRs to expand municipal and industrial application of recycled water	December 9, 2009	<i>Active Board Order</i>
CDO R6V-2013-0036	Established CDO to rescind CDOs R6V-2004-0038 and R6V-2004-0038A1	June 19, 2013	June 19, 2013

8.2. Sanitary Sewer Collection System

The Discharger's sanitary sewer collection system is regulated under the State Water Board's Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Board Order No. 2006-0003-DWQ, Waste Discharge Identification (WDID) No. 6SSO11136.

8.3. Site Stormwater Management

The Facility is not regulated under State Water Board's Order 2001-0057-DWQ

(*General Permit for Storm Water Discharges associated with Industrial Activities*) even though the facility design flow exceeds 1 MGD, (criteria for coverage under the permit) because the site is not considered tributary to a water of the United States.

Stormwater protection at the Facility is primarily accomplished through drainage control based on the following objectives: protection from run-on; minimize infiltration of precipitation into the waste; minimize exposure of pollutants to precipitation; manage run-off to minimize erosion and sedimentation; and minimize offsite migration of stormwater. To achieve these objectives, the Discharger implements structural and non-structural Best Management Practices (BMPs) to mitigate potential pollution of stormwater discharges and performs site compliance inspections to evaluate the effectiveness of the BMPs. The Discharger will continue to implement BMPs and perform inspections throughout the Facility.

This Board Order requires prohibitions, limitations, and provisions for stormwater and non-stormwater discharges at the Facility to protect both groundwater and surface water quality.

9. FACILITY DESCRIPTION

9.1. Revised Report of Waste Discharge

The Discharger submitted a complete revised report of waste discharge (RWD) to update WDRs under CWC, section 13260, on November 26, 2019. The documents constituting the RWD are listed in Table 4.

Table 4 – Revised Report of Waste Discharge

Date	Item	Author
December 3, 2018	Form 200 signed by Discharger Lancaster Water Reclamation Plant RWD	Sanitation Districts of Los Angeles County
January 24, 2019	Response to January 3, 2020 Water Board Staff Comments on RWD	Sanitation Districts of Los Angeles County

The Facility has a design daily average flow rate of 18 million gallons per day (MGD). During 2019, the annual average daily flow was 13.44 MGD. The Facility provides tertiary, disinfected treatment by utilizing the following treatment process sequence: comminution, grit removal, primary sedimentation, activated sludge treatment with biological nitrification and denitrification, secondary sedimentation, inert-media gravity filtration, and chloramine disinfection. Prior to delivery to Piute Ponds, disinfected recycled water is dechlorinated to protect aquatic life. Influent flow to the Facility is conveyed from the Sanitation District's sewer collection system. Solids processing occurs onsite and biosolids are hauled off-site for composting. See Attachment D for a process-flow schematic.

9.2. Industrial Pretreatment Program

As required under CCR, title 23, section 2233(a), Publicly Owned Treatment Works treating an average dry weather flow of 5 MGD or more of community wastewater must have and enforce an adequate pretreatment program approved by the Water Board. The Discharger implements a pretreatment program to prevent the introduction of constituents that will interfere with the operation of the treatment works, pass through the treatment system, reduce opportunities to recycle and reuse domestic wastewater and sludge, or expose operators to hazardous chemicals. The pretreatment plan should address the pretreatment requirements contained in 40 CFR 403. Water Board staff notified the Discharger that its pretreatment program satisfied these requirements by letter on December 23, 2013. This Board Order approves the pretreatment program and requires submittal of an annual report of effectiveness to the Water Board.

9.3. Sewer Collection System

Domestic and industrial wastewater from authorized dischargers is delivered to the Discharger's main trunk sewer collection system for delivery to the Facility's headworks.

9.4. Septage Receiving

The Facility accepts liquid waste consisting of portable toilet, septic tank, and cesspool wastes of domestic origin in compliance with 40 CFR 4035(b)(8). Approximately 85,000 gallons per month were received in 2019. The Facility liquid waste handling station consists of a septage interceptor connected to the trunk sewer. The trunk sewer directs flow to the plant headworks for treatment. Grit removal from the interceptor is conducted on a biweekly basis.

9.5. Headworks

The headworks consists of an influent pump station, comminutors, bar screen, aerated grit chambers, and primary sedimentation. There are six primary sedimentation tanks that are operated in parallel. Primary sludge and skimmings are pumped to the anaerobic digestion system.

9.6. Secondary Treatment

Following primary sedimentation, effluent is pumped into nine aeration tanks divided into three aeration units operating in parallel with biological nitrification and denitrification. The secondary clarifiers consist of 14 tanks operating in parallel. Return activated sludge is sent back to one of each aeration tank. Waste activated sludge is sent to the dissolved air flotation system prior to being sent to the anaerobic digestion system.

9.7. Recycled Water Treatment

Effluent is disinfected with chloramine (ammonia and sodium hypochlorite) prior to entering six dual media gravity filters for reduction of turbidity and suspended solids.

Filtrate is sent to chlorine contact tanks while backwash is sent to influent sewer or aeration tanks. Chlorine contact tanks provide residence time for disinfection by chloramines, which are formed by the addition of ammonia and sodium hypochlorite to the effluent.

9.7.1. Recycled Water Exceptions

As stated in the CCR, title 22, section 60303, recycled water requirements do not apply to recycled water used onsite at a water recycling plant or wastewater treatment plant, provided access by the public to the area of onsite recycled water use is restricted.

9.7.2. Recycled Water Requirements

This Board Order includes water-recycling Producer requirements for the wastewater treatment plant and User requirements for Piute Ponds and the EAS. It requires the Discharger to comply with Uniform Statewide Reclamation Criteria (CCR, title 22, sections 60301 through 60355) established pursuant to CWC, section 13521. As required under CCR, title 22, section 60323, the Discharger has completed an engineering report for the Facility. User requirements for all other recycled water uses are established in the MWRRs.

Discharge to unauthorized locations are prohibited by this Board Order.

9.7.3. Recycled Water Use

Currently, the Discharger delivers recycled water under MWRRs issued in Board Order No. R6V-2009-0141. The following uses of disinfected tertiary recycled water are permitted under the MWRRs.

- Irrigation for parks and playgrounds
- Irrigation for school yards
- Irrigation for residential landscaping (non-individually owned common areas)
- Irrigation for golf courses (both restricted and unrestricted access)
- Irrigation for cemeteries
- Irrigation for freeways and greenbelt landscaping
- Irrigation for landfills
- Consolidation of backfill (around potable and non-potable pipes)
- Firefighting (both structural and non-structural)
- Mixing concrete
- Soil compaction
- Decorative fountains
- Flushing sanitary sewers
- Flushing toilets and urinals
- Dust control for construction activities (includes demolition)
- Dust control on roads and streets
- Dust control at landfills

- Commercial laundries
- Priming drain traps
- Cleaning roads (street sweeping), sidewalks, and outdoor work areas

The State Water Board adopted the following related to recycled water.

- Criteria for the treatment and use of recycled water in CCR, title 22, section 60001 et seq.
- The Water Quality Control Policy for Recycled Water ([Policy](#)¹) to encourage the safe use of Recycled Water from wastewater sources that meet the definition in CWC, section 13050(n).
- Board Order WQ 2016-0068-DWQ allowing entities to enroll for coverage to become an Administrator of recycled water. Eligible permittees must submit a Title 22 Engineering Report to the Department of Drinking Water (DDW) for review and approval along with a Notice of Intent application for coverage to the Water Board.

The Discharger is in the process of applying for coverage as a Producer and Administrator of recycled water under State Water Board Order No. 2016-0068-DWQ. If the coverage is obtained, State Water Board Order No. 2016-0068-DWQ would replace the use area authorizations adopted in the MWRRs. This provides consistency with the Policy for recycled water uses and establishes recycled water treatment requirements that encourage the safe use of recycled water that protects health and the environment.

The DDW, under CCR, title 22, section 60305, classified Piute Pond as restricted recreational impoundment. Recycled water discharged to Piute Ponds must meet at least disinfected secondary-2.2 recycled water. Recycled water used for surface irrigation at the EAS for livestock fiber and fodder crops per CCR, title 22, section 60304, must be at least undisinfected secondary recycled water.

9.8. Effluent Quality

The Facility will produce disinfected, tertiary-treated effluent that will be discharged to lined Stage V Reservoirs, internal plant uses, EAS, Piute Ponds, and other authorized recycled water uses under the Discharger's Administrator authority.

9.8.1. Effluent Quality

Effluent water quality for selected constituents collected and analyzed from 2016 to 2019 for the Facility is summarized in Table 5.

¹ https://www.waterboards.ca.gov/water_issues/programs/recycled_water/policy.html

Table 5 – Effluent Quality Between 2016 to 2019

Values	BOD mg/L	TKN mg/L	NH3-N mg/L	NO2-N mg/L	NO3-N mg/L	TN mg/L	TDS mg/L
Minimum	3	1.22	0.93	0.03	2.31	5.92	389
Maximum	11.9	9.95	8.49	0.14	9.97	15.18	559
Median	3	3.57	1.9	0.06	5.55	9.34	450
Average	3.37	3.75	2.29	0.07	6.06	9.87	466

Table 5 Notes:

- BOD – Biochemical Oxygen Demand.
- NO2-N – Nitrite as Nitrogen.
- TN – Total Nitrogen.

These data indicate that effluent quality for TDS averages below the MCL of 500 mg/L. Total nitrogen has an average of 9.87 mg/L, below the proposed annual effluent limitation included in this Board Order. Lower total nitrogen in the effluent will ensure that effluent applied as recycled water to the EAS will not cause nitrate groundwater pollution.

9.9. Solids Handling

Anaerobic sludge digestion occurs in the digesters. Biosolids from the digesters are temporarily stored in storage digesters. Dewatered biosolids are stored in drying beds covering 130,860 square feet and are eventually hauled off-site for composting to an authorized facility.

9.10. Oxidation Ponds

Twelve existing unlined oxidation ponds have not been in use since 2012, when use of the Storage V Reservoirs was initiated. Ten oxidation ponds began operation in 1959 and were constructed with compacted native soil. An additional four oxidation ponds were installed in 1988. These unlined ponds have contributed to leakage from the oxidation ponds over the span of their use. To limit leakage, four lined storage reservoirs were constructed in 2012.

9.11. Repaving of Drying Pads for Biosolids

The maintenance performed on the existing drying pads for biosolids has allowed digested biosolids to be air dried, which helps reduce weight and hauling costs. The maintenance project began in July 2020 and was completed in 2021. The project consisted of repaving the concrete surfaces of the existing drying beds.

9.12. Authorized Disposal Sites/Recycling Sites

This Board Order authorizes the discharge of tertiary disinfected effluent to the following locations, as described in Table 6.

Table 6 – Authorized Disposal Sites

Name	Effluent Use
Stage V Lined Storage Reservoirs	Storage, prior to subsequent recycled water use
Piute Ponds	Environmental Enhancement
Eastern Agricultural Site (EAS)	Crop Irrigation, field preparation, and dust control

9.12.1. Lined Storage V Reservoirs

The facility has four existing lined storage reservoirs that are used for seasonal storage of tertiary treated recycled water. The Storage V Reservoirs were constructed in 2012. The storage reservoirs hold a combined volume of 1,299 million gallons and cover a combined area of 283 acres. The storage reservoirs are all constructed with single, 40 mil reinforced polypropylene (RPE) liners overlying native soil that is scarified, graded, and recompact.

9.12.2. Eastern Agricultural Site

The EAS consists of approximately 3,200 cropped acreage in two adjacent sites: Site 1 and Site 2. The Discharger owns the land within the EAS. The EAS, Site 1, consists of 12, 160-acre, center pivot irrigation systems (1,920 acres, pivots 1 - 12) and the EAS, Site No. 2, consists of 8, 160-acre, center pivot irrigation systems (1,280 acres, pivots 13 – 20). Not all the EAS, Site 2 pivots are currently in operation, pending increases in Facility flow. The Discharger also owns an adjacent EAS, Site 3, which is reserved for future growth flow and has no irrigation equipment installed (approximately 1,420 acres owned by the Discharger, no pivots). The locations of the three sites are shown in Attachment E.

The Discharger leases the land to a local farmer for farming operations. Fodder crops for cattle feeding are grown consisting of oats, barley, Sudan grass, and alfalfa. As part of the lease, the farmer is required to follow all applicable recycled water use rules, requirements, and regulations, including the Title 22 water recycling criteria. Recycled water is applied at agronomic rates to ensure nitrogen in recycled water remaining in the root zone does not deep percolate to groundwater. The Discharger follows a Cropping Plan to ensure these practices are maintained. The Cropping Plan is revised and submitted annually for activities in the upcoming year. Cropping results based on the preceding year's Cropping Plan are reported annually.

9.12.3. Effluent Reuse and Disposal

Disinfected tertiary recycled water is conveyed to the EAS for crop irrigation and related activities like dust control and pivot construction. During 2019, approximately 2,657 million gallons of disinfected tertiary recycled water were delivered to the EAS.

Disinfected tertiary recycled water is conveyed to Apollo Park and discharged into three

interconnected impoundments. Water from the impoundments is withdrawn for landscape irrigation. During 2019, approximately 68 million gallons of disinfected tertiary recycled water were delivered to Apollo Park.

Disinfected tertiary recycled water is conveyed to Piute Ponds. Piute Ponds are located on EAFB property and provide a habitat for wildlife and waterfowl. The ponds are used by EAFB personnel during duck hunting season. Piute Ponds have been classified by the State Water Board, DDW, as a “restricted recreational impoundment.” Despite secondary treated wastewater being a requirement for discharge to Piute Ponds, the Facility treats and discharges all of its wastewater as disinfected tertiary treated wastewater. During 2019, approximately 1,283 million gallons of disinfected tertiary recycled water were delivered to Piute Ponds.

Table 7 summarizes effluent reuse and disposal balances in 2019, in million gallons.

Table 7 – 2019 Effluent Reuse and Disposal Balances

Location	Amount (million gallons)	Percent
Apollo Park	68	2
Piute Ponds	1,283	32
EAS	2,657	66
Total volume	4,008	100

9.13. Groundwater Monitoring Network

There are currently 17 groundwater monitoring wells operated by the Discharger and located in the vicinity of the Lancaster Water Reclamation and Stage V Storage Reservoirs. The area surrounding Piute Ponds contains 13 groundwater monitoring wells, and the EAS contains 11 groundwater monitoring wells. The locations of all the groundwater monitoring wells are shown in Attachment F of this Board Order. MRP No. R6V-2022-Tentative for this Board Order requires monitoring of these monitoring wells.

10. IMPLEMENTATION

10.1. California Code of Regulations, Title 27

CCR, title 27, sections 20090 (a) and (b) state that discharges of solid waste to land for treatment, storage, or disposal are exempt from title 27 requirements for waste disposal provided the activity meets and continues to meet the following pre-conditions:

“(a) Sewage – Discharges of domestic sewage or treated effluent which are regulated by WDRs issued pursuant to Chapter 9, Division 3, title 23 of this code, or for which WDRs have been waived, and which are consistent with applicable water quality objectives, and treatment or storage facilities associated with municipal wastewater treatment plants, provided that residual sludges or solid waste from wastewater treatment facilities must be discharged only in accordance with the applicable SWRCB-

promulgated provisions of this division;” and

“(b) Wastewater – Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leachfields if the following conditions are met:

- 1. The applicable RWQCB has issued WDRs, reclamation requirements, or waived such issuance;*
- 2. The discharge is in compliance with the applicable water quality control plan; and*
- 3. The wastewater does not need to be managed according to Chapter 11, Division 4.5, title 22 of this code as a hazardous waste.”*

Treated wastewater discharged as irrigation water is from domestic sewage that has been regulated by waste discharge requirements issued by the Water Board. The facility is a municipal wastewater treatment plant. Sludge is properly disposed offsite. The Facility discharges are consistent with Basin Plan water quality objectives. Therefore, the discharge meets the exemption criteria of CCR, title 27, section 20090.

10.2. Basis for Establishing Effluent Limitations

The basis for the numerical effluent limitations contained in this Board Order are described in Table 8.

Table 8 – Basis for Effluent Limitations

Effluent Limitation	Basis of Limitation
Acidity/basicity as pH	Protective of MUN beneficial use and maintains a generally neutral effluent quality. Effluent limitations are based on Basin Plan Water Quality Objectives for surface waters that require a pH value between 6.5 and 8.5.
Ammonia	No effluent limitation for ammonia is established in this board order. Rather, the board order implements an effluent limitation for total nitrogen and controls surface receiving water ammonia through the receiving water quality objectives.
BOD and TSS	Effluent limitations are based on USEPA secondary treatment standards for domestic wastewater treatment facilities, as allowed by the Basin Plan.
Chlorine, Total Residual	No effluent limitation for chlorine residual is established in this board order. Rather, this board order establishes compliance with the receiving water limitation for chlorine residual through the MRP to verify protection of aquatic organisms. Laboratory analytical detection levels typically are not as low as the water quality objective, essentially requiring non-detectable concentrations present in receiving waters.

Effluent Limitation	Basis of Limitation
Dissolved oxygen (DO)	Effluent limitations are based on the protection of WARM beneficial use. The effluent minimum dissolved oxygen concentration for discharges to Piute Ponds must not be less than the WARM beneficial use standard specified in Table 3-6 of the Basin Plan.
Flow	The flow effluent limitations are based on the current designed average 30-day flow of the Facility.
MBAS	Effluent limitation is protective of MUN beneficial use and is established at the secondary MCL for foaming agents.
Total Nitrogen	This board order establishes a new effluent limitation for total nitrogen of an annual average of 10 mg/L protective of MUN beneficial with a primary MCL of 10 mg/L for nitrate as nitrogen. Total nitrogen is the sum of total Kjeldahl nitrogen (ammonia and organic nitrogen), nitrate, and nitrite. Thus, achieving an effluent limitation of 10 mg/L for total nitrogen will ensure protection of the primary MCL in receiving groundwater for nitrate. The MRP requires continued evaluation of nitrogen uptake by crops produced at the EAS. The Discharger would still rely on crop management to maximize nitrogen removal and help ensure that the effluent does not pose a threat to groundwater quality. Currently, the Discharger's board orders have no numerical effluent limitation for nitrogen, but Facility improvements completed in 2012 allow the Discharger to achieve this effluent limitation.

10.3. Technical and Monitoring Reports

This Board Order requires the Discharger to submit self-monitoring and technical MRP reports pursuant to CWC, section 13267. These reports will evaluate compliance with this Board Order, MRP No. R6V-2022-Tentative, and the Basin Plan. The elements in the monitoring program are focused on the major activities and constituents of concern associated with the treatment and disposal of domestic wastewater that are polluting receiving groundwater. The burden, including costs, of these reports bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports.

MRP R6V-2022-Tentative generally requires the Discharger to submit technical groundwater reports including the following:

- Establishing compliance with effluent limitations.
- Collecting representative groundwater samples to establish compliance with receiving water quality objectives.

10.4. Classification and Annual Fees

Pursuant to CCR, title 23, section 2200(a), the “Threat to Water Quality” from the Facility discharge is “Category (1)” because discharges could cause long-term loss of a beneficial use, such as drinking water supply or aquatic habitat. The “Complexity” is “Category A” because the Facility has major discharges to numerous discharge points and includes groundwater monitoring wells to monitor groundwater quality. This classification is subject to change based on treatment or discharge method modifications or revised state regulations. Annual fees are based on this classification.

10.5. Time Schedules

Pursuant to CWC, section 13263(c), WDRs may contain time schedules. This Board Order includes time schedules that will result in the discharge meeting Basin Plan requirements.

10.6. Right to Petition

The Water Board has notified the Discharger and interested agencies and persons of its intent to revise WDRs for this Facility and has provided them with an opportunity to submit their written views and recommendations.

Any person aggrieved by this action of the Water Board may petition the State Water Board to review the action in accordance with CWC, section 13320, and CCR, title 23, sections 2050 et. seq. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the [website](#)² or will be provided in hard copy or electronic format upon request.

10.7. California Environmental Quality Act (CEQA)

The project to adopt this board order is categorically exempt from the California Environmental Quality Act (CEQA) pursuant to CCR, title 14, section 15301, because the issuance of this board order regulates dischargers from existing facilities with no authorized expansion.

10.8. California Climate Change Mitigation Strategy

The Water Board adopted Resolution No. R6T-2019-0277 that addresses impacts of climate change. The four protection strategies stated in the Resolution are addressed by this board order in the manner as stated below:

² https://www.waterboards.ca.gov/public_notices/petitions/water_quality/

10.8.1. Protection of Wetlands, Floodplains and Headwaters

Support external efforts and initiate necessary regulatory actions to facilitate improved meadow, wetland, and floodplain conditions and stream flows in headwater areas to achieve greater levels of watershed resiliency.

This Board Order authorizes discharge of tertiary treated effluent to Piute Ponds, a freshwater wetland east of the Facility within the boundary of EAFB. Piute Ponds supports a wildlife habitat for various species of migratory birds. The Discharger is committed to maintaining Piute Ponds at approximately 400 acres. The Discharger's staff and EAFB staff cooperate in maintaining physical structures in the Piute Pond complex, vegetation management, and management of equipment.

10.8.2. Infrastructure Protection

Support external efforts and initiate necessary regulatory actions to help build and maintain sustainably functioning infrastructure so built systems remain safe and reliable during extreme weather events including heat waves, extreme precipitation, severe droughts, and wildfires.

On September 19, 2019, the Discharger's District 14 Board of Directors authorized issuance of a purchase order to hire a consultant to prepare a climate change vulnerability assessment plan for the Sanitation Districts' facilities in the Antelope Valley. The Discharger expects the plan will include information regarding infrastructure protection (i.e., resiliency of the sewer collection system, wastewater treatment plant facilities, and equipment during extreme weather events).

10.8.3. Protection of Groundwater Quality and Supply

Support external efforts and initiate necessary regulatory actions to protect groundwater quality and improve groundwater recharge for purposes of protecting source water and building sustainability and drought resiliency.

Tertiary treated recycled water produced at the Facility is used for construction activities, municipal uses, agriculture, and non-contact recreational activities. Use of recycled water offsets potable water that might otherwise be drawn from the groundwater, thereby helping to protect the groundwater supply. Monitoring and reporting for the EAS verifies that recycled water is applied at agronomic rates that will minimize infiltration to protect groundwater quality.

10.8.4. Protection of Headwater Forests and Promoting Fire Resiliency

Support external efforts and initiate necessary regulatory actions to facilitate the pace and scale of projects implemented to build long-term resilience of headwater forests including those that (1) reduce vulnerability to catastrophic fires and pest infestations, and (2) support resilience in recovery efforts.

The protection of headwater forests and fire resilience does not apply to the Facility;

however, the Facility effluent water may be used to support fire suppression activities.

10.8.5. Wildfire Suppression

On July 23, 2015, the Discharger sent a letter to the Executive Officers of Regions 4, 6, and 8 requesting advance administrative approval for tertiary effluent produced at the District's Facilities to be used for unrestricted firefighting purposes throughout the forests and wildlands areas within, and surrounding, Los Angeles County. The State Water Board Executive Director provided guidance dated September 16, 2015, indicating that recycled water uses required water recycling requirements issued by the Water Board along with approved engineering reports by DDW. The Water Board's Executive Officer responded to the Discharger on October 28, 2015, stating that no additional authorization was required for wildfire suppression within the boundary of the authorized Master Water Recycling Requirements. That letter further stated that if use of tertiary effluent was in response to a Governor's State of Emergency declaration, then relevant provisions of the emergency proclamation will prevail.

10.9. Consideration of Public Comments

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

IT IS HEREBY ORDERED, pursuant to CWC, sections 13260 and 13263, and the authority of the Water Board, that the Board Orders listed in Table 9 are hereby rescinded, except for enforcement-related purposes.

Table 9 – Rescinded Board Orders

Board Order	Board Order Description
6-86-58	Established use of secondary treated wastewater at Nebeker Ranch
R6V-2002-0053	Revised WDRs for Facility Discharges
R6V-2002-0053A1	Amended WDRs for Facility Discharges
R6V-2002-0053A2	Amended WDRs for Facility Discharges
R6V-2006-0051	Revised WDRs for Facility Discharges to Stage V Storage Reservoirs

IT IS FURTHER HEREBY ORDERED, pursuant to CWC, sections 13260, 13263, and 13267, that the Discharger must comply with the following:

11. WATER QUALITY AND FLOW LIMITS

11.1. Flow, Freeboard and Authorized Discharge Limits

11.1.1. Total Flow

The combined flow of: (1) influent wastewater and, (2) septage influent during a 24-hour period must not exceed an average of 18 MGD.

11.1.2. Freeboard

The freeboard in the Stage V Storage Reservoirs and sludge drying beds must not be less than two feet as measured from a fixed referenced indicator based upon the lowest pond dike elevation.

11.1.3. Authorized Discharge

The authorized discharge sites are Piute Ponds, the Eastern Agricultural Site, and recycled water sites as determined through recycled (also known as reclaimed) water requirements.

11.2. Effluent Discharge Limitations

Facility discharges must not exceed the effluent limitations as listed in Table 10.

Table 10 – Effluent Limitations

Constituent	Limit(s)
BOD (5-day at 20°C)	Monthly Average: 30 mg/L Maximum: 45 mg/L
DO	Monthly Average: >3.0 mg/L If DO is below 1.0 mg/L during three consecutive sampling events, the Discharger must take appropriate action to increase DO and commence daily monitoring until the problem is resolved.
MBAS	Maximum: 0.5 mg/L
Acidity	Range pH: 6.5 to 8.5
Total Nitrogen	Annual Average: 10 mg/L Total nitrogen comprised of total Kjeldahl nitrogen, nitrate, and nitrite.
TSS	Monthly Average: 30 mg/L Maximum: 45 mg/L

11.3. Recycled Water Treatment

11.3.1. Recycling Water Treatment (Production) Requirements

Recycled water quality must meet CCR, title 22 criteria for each use as authorized by the DDW approved Title 22 Engineering Report.

11.3.2. Disinfected Secondary Wastewater Discharged to Piute Ponds

Treated wastewater delivered to Piute Ponds must, at a minimum, meet requirements for disinfected secondary-23 recycled water. These requirements include oxidizing and disinfecting wastewater effluent.

To meet the CCR, title 22 criteria, the turbidity unit requirements must meet the following. Turbidity concentration compliance includes not exceeding the 24-hour specific limit value more than 5 percent of time within a 24-hour period or 75 minutes.

Total coliform compliance includes not exceeding the 30-day specific limit value more than once in a 30-day period.

Recycled water constituent limits for total coliform and turbidity in disinfected secondary treated water are listed in Table 12.

**Table 11 – Recycled Water Constituent Limitations for
Disinfected Secondary Wastewater**

Constituent	Limit(s)
Total Coliform	7-day Median: 2.2 MPN/100 mL 30-day Specific Limit: 23 MPN/100 mL
Turbidity	24-Hour Average: 2 NTU 24-Hour Specific Limit: 5 NTU Instantaneous Maximum: 10 NTU

11.3.3. Disinfected Tertiary Treated Wastewater Discharged to Piute Ponds and EAS

The following requirements include filtering and subsequently disinfecting wastewater effluent. One of the two following disinfection processes must be applied:

- A chlorine disinfection process following the filtration that provides a CT, defined as a product of total chlorine residual and modal contact time, value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow
- A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least as resistant to disinfection as polio virus may be used for purpose of the demonstration

To meet the CCR, title 22 criteria for disinfected tertiary recycled water, the turbidity unit requirements must meet the following: turbidity concentration compliance includes not exceeding the 24-hour specific limit value more than 5 percent of time within a 24-hour period or 75 minutes.

Total coliform compliance includes not exceeding the 30-day specific limit value more than once in a 30-day period.

Wastewater must be adequately disinfected at all times when Piute Ponds/Ducks Unlimited Impoundment are actively being used for recreation. During these times, the "restricted recreational impoundment" (i.e., duck hunting) use applies. Wastewater is considered adequately disinfected if at some location in the treatment process the median number of coliform organisms does not exceed 2.2 MPN/100 ML, as determined from the bacteriological results of the last seven (7) days for which analyses have been completed. At all other times, the discharge to Piute Ponds/Ducks Unlimited Impoundments must be adequately disinfected such that at some location in the treatment process the number of coliform organisms does not exceed 23 MPN/100 ML in more than one sample within any 30-day period. All effluent discharged to Piute Ponds is tertiary treated, despite having minimum requirements for disinfected secondary-23 recycled water.

Recycled water constituent limits for total coliform and turbidity in disinfected tertiary treated water are listed in Table 11.

**Table 12 – Recycled Water Constituent Limitations for
Disinfected Tertiary Treated Water**

Constituent	Limit(s)
Total Coliform	7-day Median: 2.2 most probable number (MPN) per 100 milliliters (mL) 30-day Specific Limit: 23 MPN/100 mL Instantaneous Maximum: 240 MPN/100 mL
Turbidity	24-Hour Average: 2 NTU 24-Hour Specific Limit: 5 NTU Instantaneous Maximum: 10 NTU

11.3.4. Setbacks for Recycled Water

Discharge to Piute Ponds of disinfected tertiary treated wastewater must not occur within 100 feet of any domestic water supply well (CCR, title 22, section 60310, subdivision [b]).

Irrigation at EAS using disinfected tertiary treated wastewater must not take place within 50 feet of any domestic water supply well (CCR, title 22, section 60310, subdivision [a]).

11.3.5. Signage at Piute Ponds and EAS

Areas that are accessible to the public must be posted with signs that are visible to the

public, in a size no less than 4 inches high by 8 inches wide, that include the following wording: "RECYCLED WATER – DO NOT DRINK." Each sign must display an international symbol similar to that shown in CCR, title 22, section 60310, Figure 60310-A. Alternative signage and wording, or an educational program, may be used provided the applicant demonstrates that the alternative approach will assure an equivalent degree of public notifications.

12. RECEIVING WATER LIMITATIONS

The Discharger must not cause an exceedance of any applicable water quality standard for receiving water.

12.1. Discharges to Surface Waters within Piute Ponds

The following sections contain receiving water limitations for discharger to Piute Ponds. The Discharger must ensure these limitations are not exceeded.

12.1.1. Ammonia

Ammonia concentrations must not exceed the values for the corresponding acidity and temperature conditions in the tables provided in Tables 3-19a and 3-19b of the Basin Plan.

If receiving water samples are obtained over a period during which pH and/or temperature is not constant, the pH, temperature, and the concentration of total ammonia in each sample should be determined. For each sample, the toxicity limit should be determined at the pH and temperature of the sample, and then the concentration of total ammonia nitrogen in the sample should be divided by the limit to determine a quotient. The acute or chronic toxicity objective is attained if the mean of the quotients is less than 1 over the duration of the averaging period.

12.1.2. Bacteria, Coliform

Waters must not contain concentrations of coliform organisms attributable to anthropogenic sources, including human and livestock wastes.

The fecal coliform concentration during any 30-day period must not exceed a log mean of 20 MPN/100 mL, nor must more than 10 percent of all samples collected during any 30-day period exceed 40 MPN/100 mL.

12.1.3. Biostimulatory Substances

Waters must not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause a nuisance or adversely affect the water for beneficial uses.

12.1.4. Chemical Constituents

Waters must not contain concentrations of chemical constituents that adversely affect the water for beneficial uses.

Waters designated as MUN must not contain concentrations of chemical constituents in excess of the MCL or secondary maximum contaminant level (SMCL) based upon drinking water standards specified in the following provisions of CCR, title 22 of CCR, which are incorporated by reference into the Basin Plan: Table 64431-A of section 64431 (Inorganic Chemicals), Table 64444-A of section 64444 (Organic Chemicals), Table 64449-A of section 64449 (SMCLs – Consumer Acceptance Limits), and Table 64449-B of Section 64449 (SMCLs – Consumer Acceptance Ranges). This incorporation-by-reference is prospective including future changes to the incorporated provisions as the changes take effect.

Waters designated as AGR must not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses (i.e., agricultural purposes).

12.1.5. Chlorine, Total Residual

For the protection of aquatic life, total chlorine residual must not exceed either a median value of 0.002 mg/L or a maximum value of 0.003 mg/L. Median values must be based on a daily measurement taken within a six-month period.

12.1.6. Color

Waters must be free of coloration that causes nuisance or adversely affects the water for beneficial uses.

12.1.7. Dissolved Oxygen

The dissolved oxygen concentration, as percent saturation, must not be depressed by more than 10 percent, nor must the minimum dissolved oxygen concentration be less than 80 percent of saturation.

For waters with beneficial uses of WARM, the minimum dissolved oxygen concentrations must not be less than that specified in Table 3-6 of the Basin Plan.

12.1.8. Floating Materials

Water must not contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance, or adversely affect the water for beneficial uses.

For naturally high-quality waters, the concentrations of floating material must not be altered to the extent that such alterations are discernable at the 10 percent significance level.

12.1.9. Oil and Grease

Waters must not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect the water for beneficial uses.

For naturally high-quality waters, the concentration of oils, greases, or other film or coat generating substances must not be altered.

12.1.10. Non-Degradation of Aquatic Communities and Populations

All wetlands must be free from substances attributable to wastewater or other discharges that produce adverse physiological response in humans, animals, or plants; or that lead to the presence of undesirable or nuisance aquatic life.

All wetlands must be free from activities that would substantially impair the biological community as it naturally occurs due to physical, chemical, and hydrologic processes.

12.1.11. pH (Acidity)

In fresh waters with designation beneficial uses of COLD or WARM, changes in normal ambient pH levels must not exceed 0.5 pH units. For all other waters of the Region, the pH must not be depressed below 6.5 nor raised above 8.5.

12.1.12. Radioactivity

Radionuclides must not be present in concentrations that are deleterious to human, plant, animal, or aquatic life or that result in the accumulation of radionuclides in the food web to the extent that presents a hazard to human, plant, animal, or aquatic life.

Waters designated as MUN must not contain concentrations of radionuclides in excess of the limits specified in CCR, title 22, section 64443, Table 4.

12.1.13. Sediment

The suspended sediment load and suspended sediment discharge rate of surface waters must not be altered in such a manner as to cause nuisance or adversely affect the water for beneficial uses.

12.1.14. Settleable Materials

Waters must not contain substances in concentrations that result in deposition of material that causes nuisance or that adversely affects the water for beneficial uses.

12.1.15. Suspended Materials

Waters must not contain suspended materials in concentrations that cause nuisance or that adversely affects the water for beneficial uses.

For naturally high-quality waters, the concentration of total suspended materials must not be altered to the extent that such alterations are discernible at the 10 percent significance level.

12.1.16. Taste and Odor Temperature

Waters must not contain taste or odor-producing substances in concentrations that impart undesirable tastes or odors to fish or other edible products of aquatic origin, that cause nuisance, or that adversely affect the water for beneficial uses. For naturally high-quality waters, the taste and odor must not be altered.

12.1.17. Temperature

Natural receiving water temperature of all waters must not be altered unless it can be demonstrated to the satisfaction of the Water Board that such an alteration in temperature does not adversely affect the water for beneficial uses.

12.1.18. Toxicity

All waters must be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.

The survival of aquatic life in surface waters subjected to a waste discharge, or other controllable water quality factors, must not be less than that for the same water body in areas unaffected by the waste discharge or when necessary, for other control water that is consistent with the requirements for “experimental water” as defined in *Standard Methods for the Examination of Water and Wastewater* (American Public Health Association, et al, 2012, or subsequent editions).

12.1.19. Turbidity

Waters must be free of changes in turbidity that cause nuisance or adversely affect the water for beneficial uses. Increases in turbidity must not exceed natural levels by more than 10 percent.

12.2. Discharge to the Antelope Valley Groundwater Basin

The discharge must not cause the groundwater of the Antelope Valley Groundwater Basin to contain:

12.2.1. Bacteria

In groundwaters designated as MUN, the median concentration of coliform organisms over any seven-day period must be less than 1.1 most probable number per 100 milliliters (1.1 MPN/100 mL).

12.2.2. Chemical Constituents

Groundwaters designated as MUN must not contain concentrations of chemical constituents in excess of the MCL or SMCL based upon drinking water standards specified in the following provisions of CCR, title 22, which are incorporated by reference into the Basin Plan: Table 64431-A of section 64431 (Inorganic Chemicals), Table 64444-A of section 64444 (Organic Chemicals), Table 64449-A of section 64449 (SMCLs – Consumer Acceptance Limits), and Table 64449-B of Section 64449 (SMCLs – Consumer Acceptance Ranges). This incorporation-by-reference is prospective including future changes to the incorporated provisions as the changes take effect.

Waters designated as AGR must not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses (i.e., agricultural purposes).

Groundwaters must not contain concentrations of chemical constituents that adversely affect the water for beneficial uses.

12.2.3. Radioactivity

Groundwaters designated as MUN must not contain concentrations of radionuclides in excess of the limits specified in Table 64442 of section 64442 and Table 64443 of section 64443 of title 22 of CCR, which is incorporated by reference into the Basin Plan. This incorporation-by-reference is prospective including future changes to the incorporated provisions as the changes take effect.

12.2.4. Taste and Odors

Groundwaters must not contain taste or odor-producing substances in concentrations that cause nuisance or that adversely affect beneficial uses. For groundwater designated as MUN, at a minimum, concentrations must not exceed adopted SMCLs specified in table 64449-A of section 64449 (SMCLs – Consumer Acceptance Limits), and table 64449-B of section 64449 (SMCLs – Consumer Acceptance Ranges) of CCR, title 22, including future changes as the changes take effect.

13. GENERAL REQUIREMENTS AND PROHIBITIONS

13.1. Basin Plan Prohibitions

13.1.1. Water Quality Objectives

The discharge of waste that causes violation of any narrative or numeric water quality objective contained in the Basin Plan is prohibited.

13.1.2. Further Degradation

Where any numeric or narrative water quality objective contained in the Basin Plan is already being violated, the discharge of waste that causes further degradation or pollution is prohibited.

13.1.3. Waters of the State

The discharge of waste that could affect the quality of waters of the state that is not authorized by the State or Regional Board through waste discharge requirements, waiver of waste discharge requirements, NPDES permit, cease and desist order, certification of water quality compliance pursuant to Clean Water Act section 401, or other appropriate regulatory mechanism is prohibited.

13.1.4. Discharge to Surface Waters

The discharge of untreated sewage, garbage, or other solid wastes into surface waters of the Region is prohibited. (For the purposes of this prohibition, “untreated sewage” is that which exceeds secondary treatment standards of the Federal Water Pollution Control Act, which are incorporated in this plan in Section 4.4 under “Surface Water Disposal of Sewage Effluent.”).

13.1.5. Pesticides

The discharge of pesticides to surface or ground waters is prohibited.

13.2. General Prohibitions

13.2.1. Pollution

The discharge must not cause or threaten to cause pollution, as defined in CWC, section 13050, subdivision (l).

13.2.2. Nuisance

Neither the treatment nor the discharge must cause a nuisance, as defined in CWC, section 13050, subdivision (m).

13.2.3. Discharge to Surface Waters

The discharge of waste to surface waters other than Piute Ponds is prohibited.

13.2.4. Dissolved Oxygen

If dissolved oxygen concentrations in Piute Ponds are below 3.0 mg/L during two consecutive sampling events, the Discharger must take appropriate action to increase dissolved oxygen and commence weekly monitoring in the affected ponds until the problem has been resolved.

13.2.5. Offsite Disposal

The offsite disposal of waste residue, including sludge, must be in a manner that complies with all local, state, and federal requirements.

13.2.6. Bypass

Bypass (the diversion of waste streams from any portion of Facility) is prohibited.

13.2.7. Unauthorized Sites

The discharge, bypass, or diversion of untreated or treated wastewater, sludge, grease, or oils from the collection system, transport, or treatment plant treatment system, to unauthorized site(s) or surface waters is prohibited, except for authorized recycled water uses as specified in this board order.

13.2.8. Authorized Sites

The onsite disposal of waste residue, including sludge, is prohibited, and must be disposed to an authorized facility.

13.2.9. Site Protections

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

13.2.10. Treated Wastewater Discharge

The discharge of treated wastewater, except to the authorized discharge sites as described in the MWRRs, is prohibited.

13.2.11. Plant Efficiency

The treatment plant must be maintained and operated at maximum operating efficiency for biological and nutrient removal.

13.2.12. Compliance

The Discharger must comply with all existing Federal and State Laws and regulations that apply to sewage sludge use and disposal practices.

13.2.13. Biosolids

The final use and disposal of biosolids must comply with the USEPA, Part 503, Biosolids Rule (40 CFR Part 503) and CCR, title 27, section 20220.

13.2.14. Salt and Nutrient Management Plan

The Discharger must participate with an existing stakeholder group to maintain the Salt and Nutrient Management Plan.

14. PROVISIONS

14.1. Property Rights

This Board Order does 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.

14.2. Duty to Comply

Failure to comply with this Board Order may constitute a violation of the CWC and is grounds for enforcement action or for permit termination, revocation and re-issuance, or modification.

14.3. Duty to Mitigate

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

14.4. Right to Revise

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

14.5. Modification, Revocation, and Reissuance

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

14.6. Severability

Provisions of this Board Order are severable. If any provision of the requirements is found invalid, the remainder of the requirements must not be affected.

14.7. Transfers

Providing there is no material change in the operation of the Facility, this Board 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 Water Board's Executive Officer.

14.8. Enforcement

The CWC provides for civil liability and criminal penalties for violations or threatened violations of this board order including imposition of civil liability or referral to the Attorney General.

14.9. Time Schedules

Time schedules for submission of required reports are listed in Table 13.

Table 13 – Time Schedule Dates and Items

Item	Schedule Date	Task
Sampling and Analysis Plan	October 1, 2022	Pursuant to CWC, section 13267, the Discharger must submit a Sampling and Analysis Plan (SAP), subject to revision if site conditions change such as new monitoring wells are installed, analytical methods change, or the Executive Officer authorizes a change in frequency. The reporting requirements for the SAP are specified in the MRP.
Evaporation/ Oxidation Ponds Biosolids Removal	December 1, 2022	Submit a report proposing a plan and proposed date for removing residual biosolids from the bottom of the unlined former evaporation/ oxidation ponds that were taken out of service in 2012. After acceptance of this plan by the Executive Officer, implement this plan and submit a project completion report within 60 days of project completion.
Former Nebeker Ranch Groundwater Monitoring Wells	January 1, 2023	Submit a report indicating the Discharger's proposed action (further use or destruction) and time schedule for the groundwater monitoring wells located on the former Nebeker Ranch. If these wells are to be destroyed, collect groundwater samples according to the MRP prior to destruction. If well destruction is proposed, the report must document efforts to secure further use by such entities as the Antelope Valley Watermaster.

15. GENERAL REQUIREMENTS

15.1. Administrative

15.1.1. Availability

A copy of this Board Order must be kept and maintained by the Discharger and be

available at all times to operating personnel.

15.1.2. Operator Certificates

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

15.2. Access

15.2.1. Water Board Staff

The Discharger must permit Water Board staff to:

- Enter upon premises in which an effluent source is located or in which any required records are kept.
- Copy any records relating to the discharge or relating to compliance with this board order to inspect monitoring equipment or records.
- Sample any discharge.

15.2.2. Public

General public access to the treatment and disposal facilities must be effectively controlled and limited to authorized persons.

15.3. Operation and Maintenance

15.3.1. Optimal Operation

The Discharger must always 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 include 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.

15.3.2. Waste Residue

15.3.2.1 General

The offsite disposal of waste residue, including sludge, must be in a manner that complies with all local, state, and federal requirements.

15.3.2.2 Federal

The final use and disposal of biosolids must comply with the USEPA, Part 503, Biosolids Rule (40 CFR Part 503).

15.3.2.3 State

The final use and disposal of biosolids must comply with CCR, title 27, section 20220. This criteria states dewatered sewage sludge may be discharged at a California Class III landfill only under the following conditions, unless the waste must be managed as hazardous waste:

- The landfill is equipped with a leachate collection and removal system (LCRS).
- The sludge contains at least 20 percent solids (by weight) if primary sludge, or at least 15 percent solids if secondary sludge or mixtures of primary and secondary sludges.
- A minimum solids-to-liquid ratio of 5:1 by weight must be maintained to ensure that the co-disposal will not exceed the initial moisture-holding capacity of the nonhazardous solid waste.

15.3.3. Storm Protection

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

15.3.4. Authorized Discharge Sites

The only authorized discharge sites are Piute Ponds, the east agricultural site, and recycled water use sites as determined through the MWRRs.

16. MONITORING AND REPORTING

Pursuant to CWC, section 13267(b), the Discharger must comply with MRP No. R6V-2022-Tentative, as specified by the Executive Officer. The Executive Officer may amend the MRP.

16.1. Sampling and Analysis Plan

Pursuant to CWC, section 13267, the Discharger must submit a Sampling and Analysis Plan (SAP) for Water Board staff's review and acceptance, and revised and resubmitted when conditions change (including, but not limited to any changes to sampling methods, locations, or analytical methods and procedures). The reporting requirements for the SAP are specified in MRP No. R6V-2022-Tentative.

16.2. Cropping Report and Plan

All tertiary treated recycled water discharged to the EAS must be irrigated at appropriate agronomic rates. The Cropping Plan must describe how best management irrigation practices will be implemented to minimize deep percolation while maintaining viable crops for an upcoming year. Failure to irrigate at agronomic rates has the potential to

degrade underlying groundwater if percolate were to reach groundwater. An annual Cropping Report will detail how the Discharger met agronomic rates for the previous year. The Discharger must implement all practices and complete all actions contained in the cropping report and plan documents submitted to the Water Board.

16.3. Volumetric Reporting

The Discharger must comply with volumetric reporting requirements of the Recycled Water Policy. The discharger must submit the volumetric reporting data to the State Water Board's GeoTracker database by April 30 of each year. These requirements include the following volumes:

- Monthly volume of wastewater collected and treated by the wastewater treatment plant.
- Monthly volume of wastewater treated, specifying level of treatment, including treated wastewater discharged.
- Monthly volume of recycled water distributed, and annual volume of treated wastewater distributed for beneficial use in compliance with CCR, title 22 use categories.

16.4. Pretreatment Program

This Board Order requires an annual report of effectiveness. The Discharger is required to implement a pretreatment program as required in 40 CFR 403.

16.5. Adverse Condition

Pursuant to CWC, section 13267(b), the Discharger must immediately notify the Water Board by telephone whenever an adverse condition occurred as a result of this discharge; written confirmation must 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.

16.6. Material Change

Pursuant to CWC, 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, must be reported to the Water Board at least 140 days in advance of implementation of any such proposal. This must include, but not be limited to, all significant soil disturbances.

16.7. Ownership

The Owners/Discharger of property subject to WDRs must be considered to have a continuing responsibility for ensuring compliance with applicable WDRs in the operations or use of the owned property. Pursuant to CWC, section 13260(c), any

change in the ownership and/or operation of property subject to the WDRs must be reported to the Water Board. Notification of applicable WDRs must be furnished in writing to the new owners and/or operators and a copy of such notification must be sent to the Water Board.

16.8. Corrected Information

If a Discharger becomes aware that any information submitted to the Water Board is incorrect, the Discharger must immediately notify the Water Board, in writing, and correct that information.

16.9. Authorized Representative

Reports required by the WDRs, and other information requested by the Water Board, must be signed by a duly authorized representative of the Discharger. Under CWC, section 13268, 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.

16.10. Request for Termination

If the Discharger becomes aware that their WDRs are no longer needed (because the project will not be built, or the discharge will cease) the Discharger must notify the Water Board in writing and request that their WDRs be rescinded.

17. EXECUTIVE OFFICER SIGNATURE

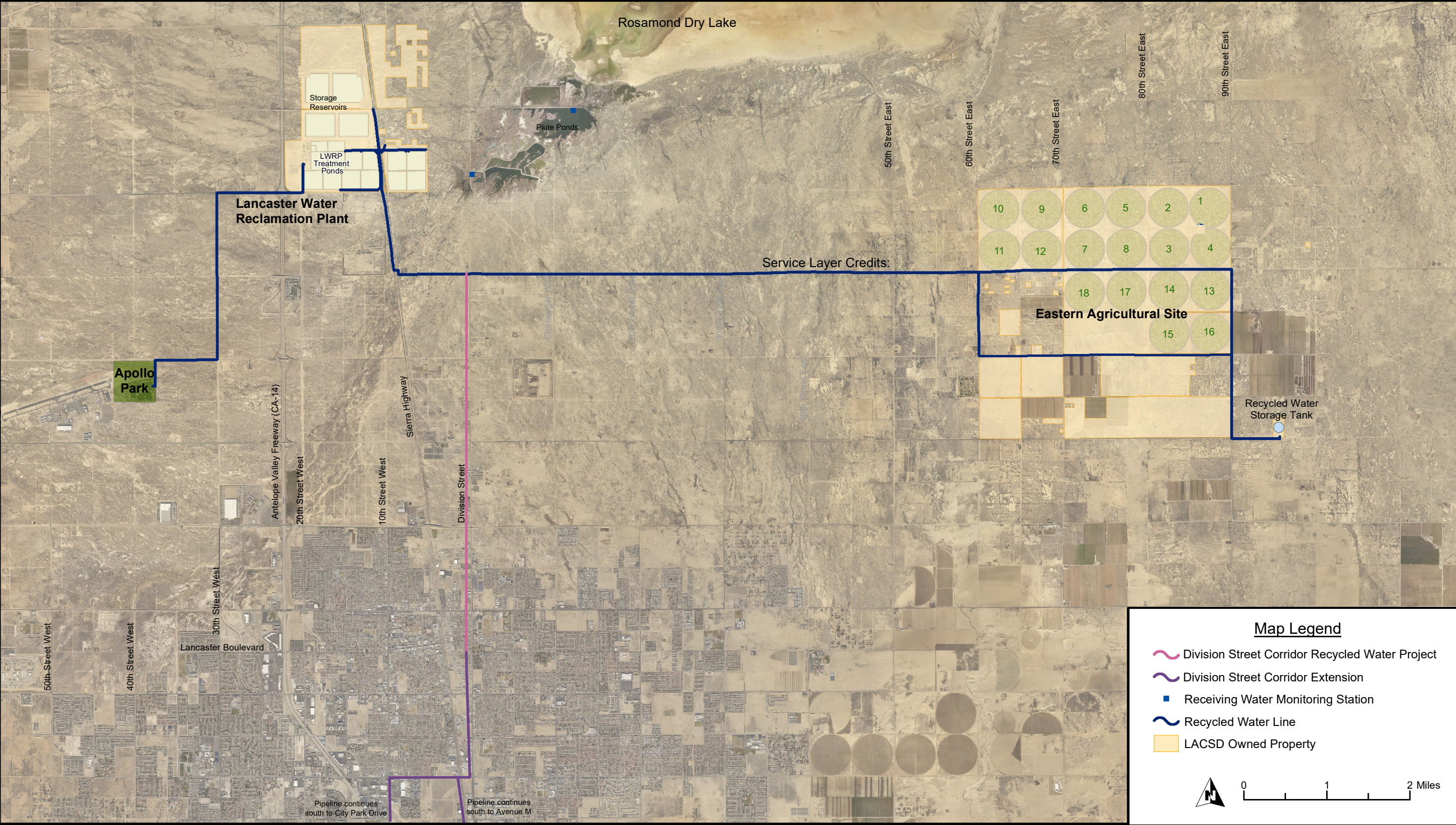
I, Michael R. Plaziak, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a board order adopted by the California Regional Water Quality Control Board, Lahontan Region, on June 8, 2022.

MICHAEL R. PLAZIAK, PG
EXECUTIVE OFFICER

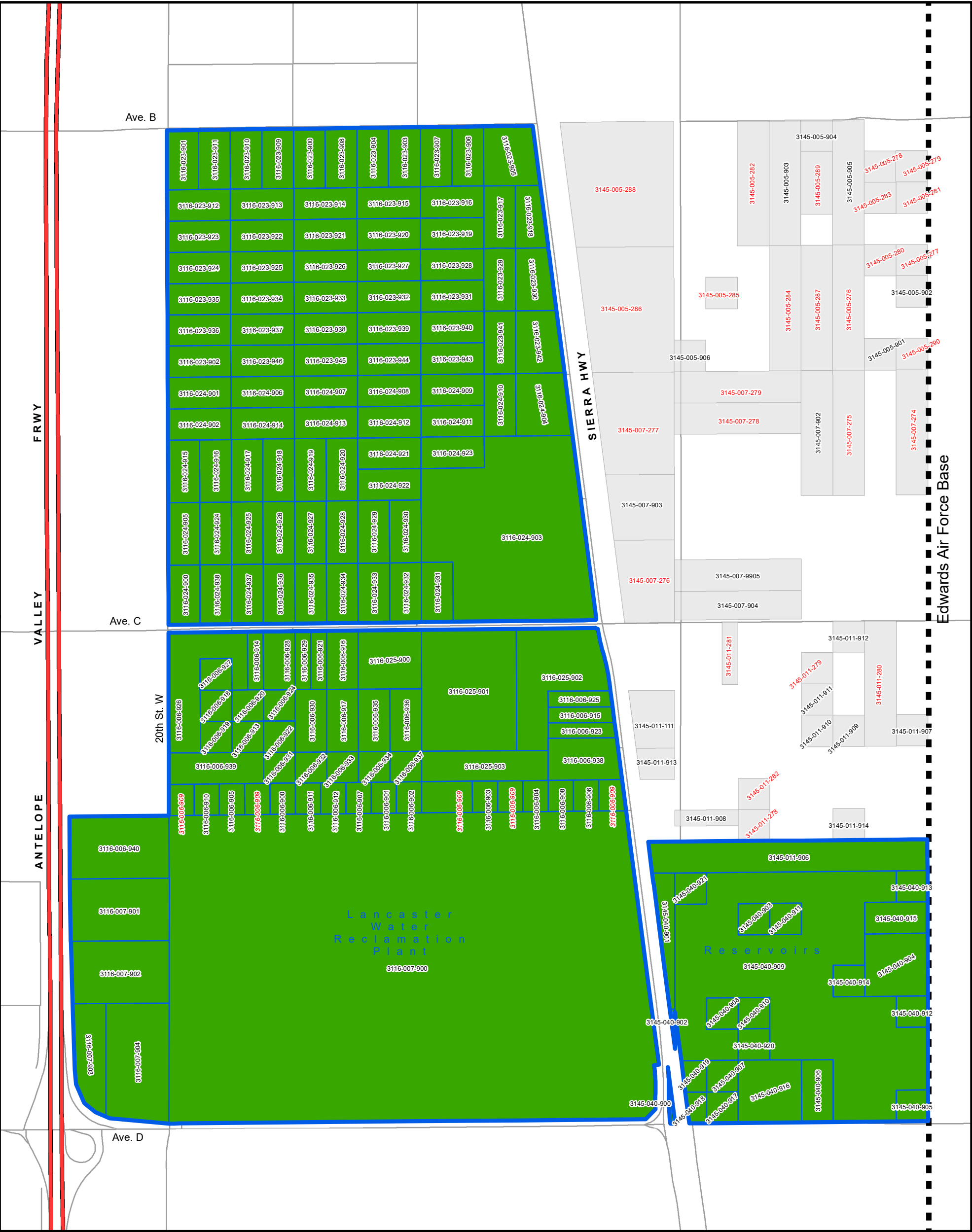
Attachments:

- A. Lancaster Water Reclamation Plant General Site Map
- B. Lancaster Water Reclamation Plant APN Parcel Map
- C. Easter Agricultural Site APN Parcel Map
- D. Lancaster Water Reclamation Plant Flow Schematic
- E. Eastern Agricultural Site Map
- F. Surface Water Monitoring and Groundwater Monitoring Wells Network
- G. Definitions and Acronyms

ATTACHMENT A
LANCASTER WRP SITE MAP



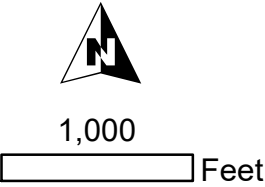
ATTACHMENT B
LANCASTER WRP APN PARCEL MAP



EAO: PRINT 8/29/2019

LEGEND

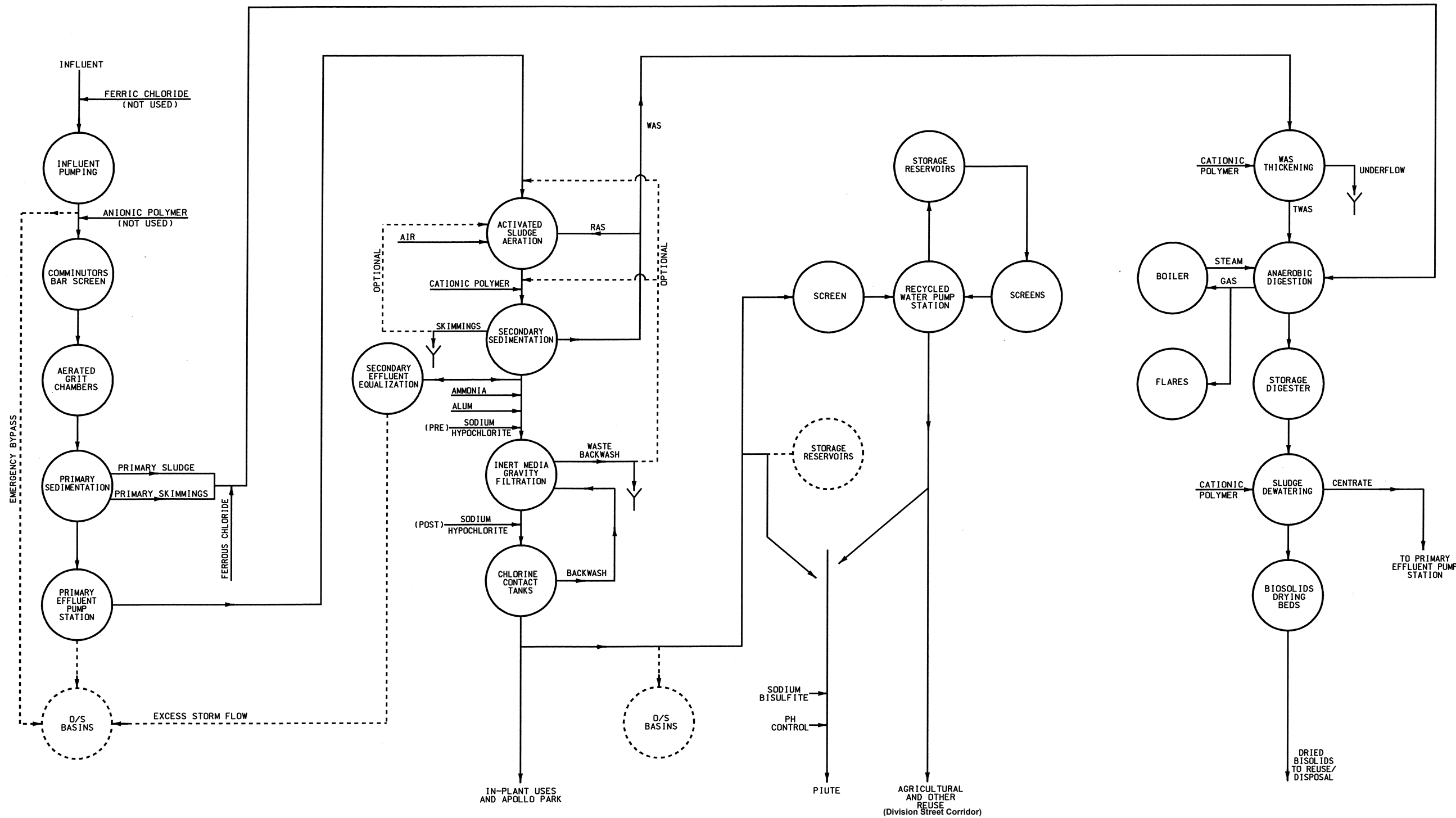
- Boundary of District Ownership
- District Owned Properties not including Mitigation Properties
- District Owned Mitigation Properties
- Edwards Air Force Base
- Freeway



ATTACHMENT C
EAST AGRICULTURAL SITE APN PARCEL MAP



ATTACHMENT D
LANCASTER WRP FLOW CHART



Y PLANT DRAIN TO INFLUENT
SEWER UNLESS NOTED OTHERWISE

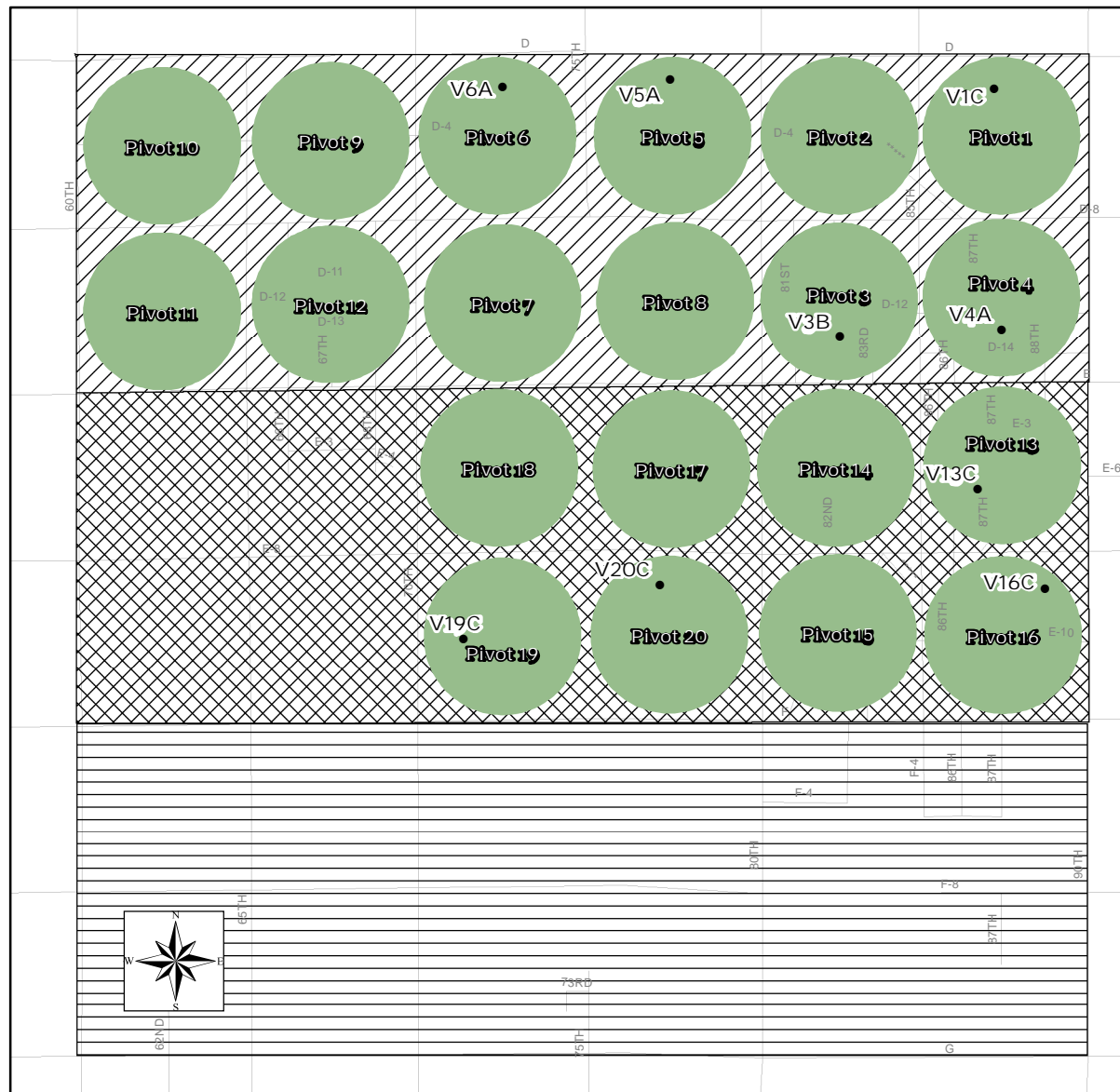
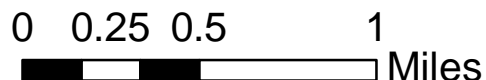
Legend

- ## Pivots

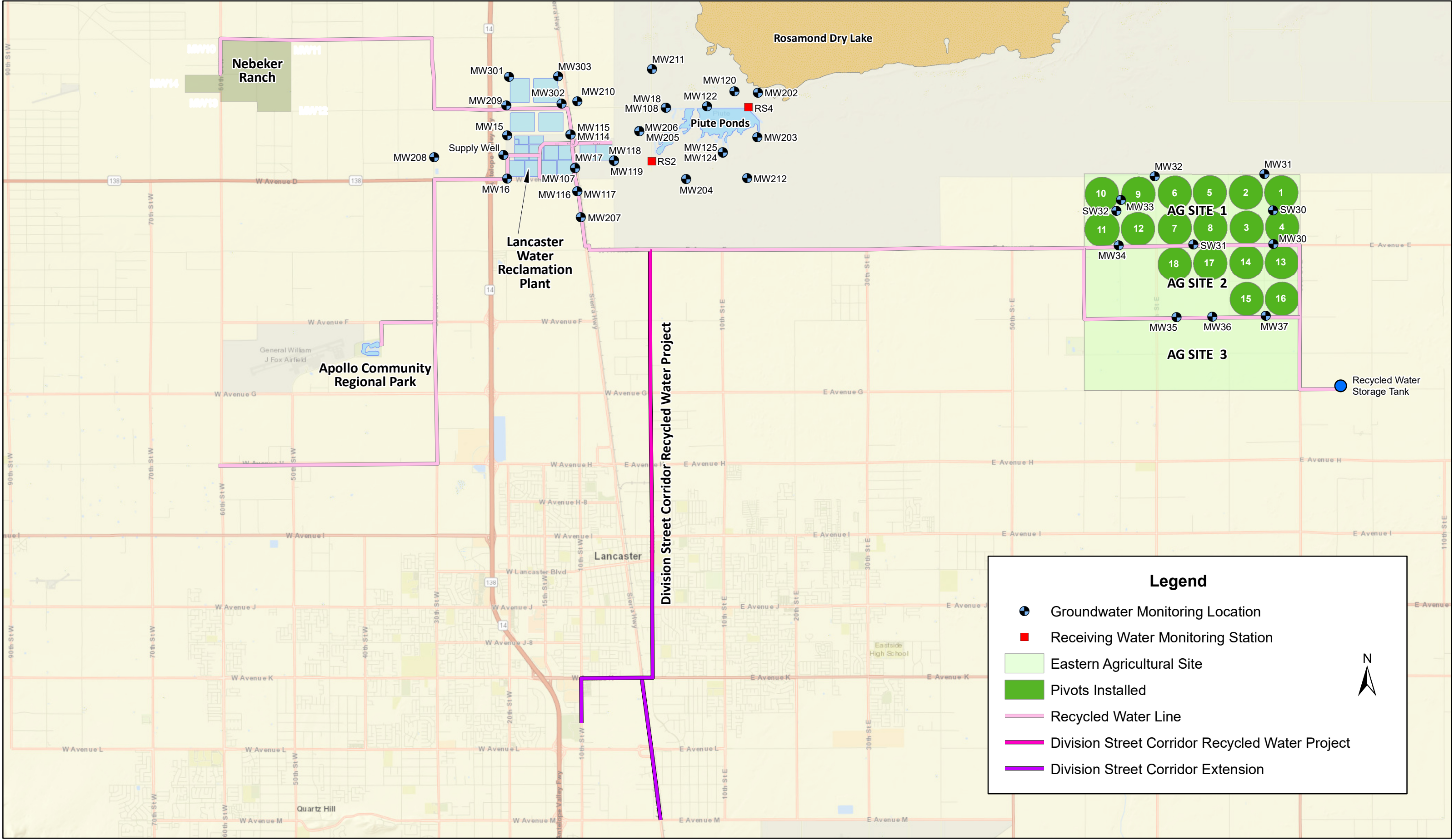
 Eastern Ag Site 1

 Eastern Ag Site 2

Eastern Ag Site 3



ATTACHMENT F
SURFACE WATER MONITORING AND GROUNDWATER MONITORING WELL NETWORK



Legend

- Groundwater Monitoring Location
- Receiving Water Monitoring Station
- Eastern Agricultural Site
- Pivots Installed
- Recycled Water Line
- Division Street Corridor Recycled Water Project
- Division Street Corridor Extension

Attachment G: Definitions and Acronyms

1. DEFINITIONS

The following definitions are for the purposes of Board Order No. R6V-2022-Tentative.

Surface waters, as used in this board 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.

Groundwaters, as used in Board Order No. R6V-2022-Tentative, include, but are not limited to, all subsurface waters being above atmospheric pressure and the capillary fringe of these waters.

2. ACRONYMS AND ABBREVIATIONS

Table G-1 – General Acronyms and Abbreviations

Abbreviation	Explanation
Basin Plan	Water Quality Control Plan for the Lahontan Region
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CWA	Federal Water Pollution Control Act of 1972
CWC	California Water Code
District	Los Angeles County Sanitation Districts
Discharger	Lancaster Water Reclamation Plant
DWP	Los Angeles Department of Water and Power
DWR	Department of Water Resources
DWQ	Division of Water Quality
HA	Hydrologic Area
HU	Hydrologic Unit
Lahontan Water Board	Lahontan Regional Water Quality Control Board
MCL	Maximum contaminant limit
MRP	Monitoring and reporting program
MRRs	Master Reclamation Requirements
NOA	Notice of applicability
NPDES	National pollutant discharge elimination system
Recycled Water Policy	Water Quality Control Policy for Recycled Water
ROWD	Report of waste discharge
RWQCB	Regional Water Quality Control Board
SNMPs	Salt and Nutrient Management Plans
State Water Board	State Water Resources Control Board
USAF	United States Air Force
USFS	United States Forest Service
USGS	U.S. Geological Survey
WDID	Waste discharge identification

Abbreviation	Explanation
WDRs	Waste discharge requirements
WRRs	Waste reclamation requirements

Table G-2 – Constituent Abbreviations

Abbreviation	Explanation
BOD	biochemical oxygen demand
DO	dissolved oxygen
MBAS	methylene blue active substances (surfactants)
NH ₄ -N	ammonia nitrogen
NO ₃ -N	nitrate nitrogen
TKN	total Kjeldahl nitrogen
TN	total nitrogen
TSS	total suspended solids

Table G-3 - Units Abbreviations

Abbreviation	Explanation
°C	degrees Celsius
ft bgs	feet below ground surface
MG	million gallons
MGD	million gallons per day
mg/L	milligrams per liter
MPN/100 mL	most probable number per 100 milliliters
msl	mean sea level
NTU	Nephelometric Turbidity Units
pH	potential of hydrogen

Table G-4—Beneficial Uses Abbreviations

Abbreviation	Explanation
MUN	Municipal and Domestic Supply
AGR	Agricultural Supply
GWR	Groundwater Recharge
FRSH	Freshwater Replenishment
REC-1	Water Contact Recreation
REC-2	Non-Water Contact Recreation
COMM	Commercial and Sportfishing
COLD	Cold Freshwater Habitat
WILD	Wildlife Habitat
SPWN	Spawning, Reproduction, and Development
IND	Industrial Supply

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

**MONITORING AND REPORTING PROGRAM
NO. R6V-2022-TENTATIVE
WDID NO. 6B190107017**

FOR

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

Los Angeles County

1. GENERAL REQUIREMENTS

1.1. Authorization Basis and Effective Date

This Monitoring and Reporting Program (MRP) is being required pursuant to California Water Code (CWC), section 13267.

1.2. California Water Code, Section 13267

CWC, section 13267 (a), states that the Water Board, “in establishing or reviewing any water quality control plan or waste discharge requirements, or in connection with any action relating to any plan or requirement authorized by this division, may investigate the quality of any waters of the state within its region.” Information requested in this MRP is necessary to establish compliance with waste discharge requirements (WDRs). The burden, including costs, of these reports bears a reasonable relationship to the need for the report and the benefits to be obtained from the reports.

1.3. Definitions

The following definitions are for the purposes of this MRP.

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 must be proportional to the discharge flow rate at the time of sampling. The sampling period must equal the discharge period, or 24 hours, whichever period is shorter.

A grab sample is defined as an individual sample collected in fewer than 15 minutes.

1.4. Summary of Reports Required

The Los Angeles County Sanitation District No. 14 (Discharger), who discharges tertiary-treated wastewater generated from the Lancaster Water Reclamation Plant (Facility), is required to submit technical or self-monitoring reports pursuant to CWC, section 13267. All effluent is disposed as recycled water to the Eastern Agricultural Site (EAS), Piute

Ponds (located on Edwards Air Force Base), or to other recycled water users. Only recycled water uses at the EAS and Piute Ponds are regulated by WDRs associated with this MRP.

Table 1 presents a summary of reports required under this program.

Table 1 – Summary of Required Monitoring Reports

Report Name	Period	Report Due Date
Stormwater Pollution Control Plan	One Time	November 11, 2022
Sampling and Analysis Plan	One time	November 11, 2022
Well Construction Workplan	One time	January 1, 2023
Well Completion Report	One time	90 days after final well completion
Cropping Report	Annually	April 30 each year
Cropping Plan	Annually	October 30 each year
Monthly self-monitoring report	Monthly	The 30 th day of the second month following each monthly monitoring period
First quarter self-monitoring report	January 1 – March 31	May 30 each year
Second quarter self-monitoring report	April 1 – June 30	August 30 each year
Third quarter self-monitoring report	July 1 – September 30	November 30 each year
Fourth quarter self-monitoring report	October 1 – December 31	March 1 each year (following)
Annual self- monitoring report	January 1 to December 31 of prior year	March 1 each year
Recycled Water Annual Volumetric Reporting	January 1 – December 31 of prior year	April 30 each year
Disinfection failure	As applicable	Within 24 hours or event
Spill Reports	As applicable	Within 24 hours of a spill

Each self-monitoring report must provide information on: (1) general operations, (2) operational problems, (3) compliance assessment, and (4) data for constituents as specified in this MRP.

1.5. Report and Correspondence Submittal

All correspondence, reports, and groundwater monitoring data must be uploaded to the State Water Resources Control Board's (State Water Board's) GeoTracker database under global identification number **WDR100030189**. You can register for an account at the GeoTracker website¹.

Please contact the GeoTracker Help Desk if you have any questions. Contact information for the Help Desk is available at GeoTracker@waterboards.ca.gov or (866) 480-1028. Also, please send a copy of the assistance request to the assigned Water Board project staff.

2. MONITORING

The following sections outline data to be collected and associated methods for compiling, storing, and reporting by the Discharger.

2.1. Sampling and Analysis

2.1.1 Standards

All analyses must be performed, at a minimum, in accordance with the current edition(s) of both *Standard Methods for the Examination of Water and Wastewater* and *Methods for Chemical Analysis of Water and Wastes*, United States Environmental Protection Agency (USEPA).

2.1.2 Laboratory Certification

All analyses must be performed in a laboratory certified to perform such analyses by the Environmental Lab Accreditation Program (ELAP) or a laboratory approved by the Water Board Executive Officer. Specific methods of analysis must be identified on each laboratory report.

2.1.3 Modification

Any modifications to the planned methods to eliminate known interferences must be reported with the sample results. The methods used must also be reported. If methods other than USEPA-approved methods or Standard Methods are used, the exact

¹ Web address: <https://geotracker.waterboards.ca.gov/esi/login.asp>

methodology must be submitted for review and must be approved by the Water Board Executive Officer prior to use.

2.1.4 Chain-of-custody

The Discharger must establish chain-of-custody procedures to ensure that specific individuals are responsible for sample integrity from commencement of sample collection through delivery to an approved laboratory.

2.1.5 Sample and Analysis Plan (SAP)

Sample collection, storage, and analysis must be conducted in accordance with a Sampling and Analysis Plan (SAP) submitted to Water Board staff for review and acceptance and updated as necessary. The most recent version of the Water Board accepted SAP must be kept at the facility and accessible to personnel performing sampling and analyses. The SAP is subject to review during the Water Board's plant compliance inspections.

2.1.6 Calibration and Maintenance

The Discharger must calibrate and perform maintenance procedures on all monitoring instruments and equipment to ensure accuracy of measurements or must ensure that both activities will be conducted by properly trained personnel prior to the equipment's use. The calibration of any wastewater flow measuring device must be recorded and maintained in the permanent logbook.

2.1.7 Field Tests

Field tests may be accomplished by site personnel with a direct read instrument calibrated per manufacturer's specifications prior to sampling.

2.2. Flow, Operations, and Pond Conditions Monitoring

The data listed in Table 2 must be recorded in a permanent logbook and the information reported according to the frequency listed:

Table 2 – Summary of Flow, Operations, and Pond Conditions Monitoring

Item	Frequency	Description
Total inflow volume to the facility	Daily and monthly	Measured as million gallons (MG) and compared to effluent discharge limits listed in WDR
Calculated average daily flow rate of wastewater into the facility	Monthly	Calculated and reported as million gallons per day (MGD) for each month and compared to effluent flow limit established in WDR for compliance analysis

Item	Frequency	Description
Total volume to Storage Reservoirs	Daily and monthly	Measured as MG
Freeboard	Monthly	Freeboard is defined as the vertical distance from the lowest point of a dike or invert of an overflow structure to the water surface in a pond for each pond. If a pond does not contain wastewater, the Discharger must report that the pond is empty. Each pond or basin must have a surveyed reference marker installed at its lowest elevation from which to make the monthly measurement
Operation and maintenance activities	As applicable	Identified operational problems and maintenance activities affecting plant performance, effluent discharges, or compliance with waste discharge requirements. Proposed corrective actions and a related schedule for completion of such actions
Facility status inspection	Monthly	Completed monthly visual inspections, even when no issues are found. Inspected areas include but are not limited to the wastewater treatment plant area, storage reservoirs, Piute Ponds effluent disposal site, Eastern Agricultural Site, and all monitoring well locations.

2.3. Septage Monitoring

Septage and recreational vehicle waste accepted at the Facility must be monitored according to the following subsections.

2.3.1 Hauler

Identify the hauler for each load accepted.

2.3.2 Source Location

Identify the source location of load if not within service area boundary.

2.3.3 Monitoring

For each load, the parameters listed in Table 3 must be monitored and reported for each pumping period.

Table 3 – Summary of Septage Monitoring

Item	Frequency	Description
Acidity as pH	Pumping period	Field test accomplished on a sample of the waste by site personnel with a direct read instrument calibrated per manufacturer's specifications and measured every pumping period.
Electrical conductivity as microSiemens per centimeter ($\mu\text{S}/\text{cm}$)	Pumping period	Field test accomplished on a sample of the waste by site personnel with a direct read instrument calibrated per manufacturer's specifications and measured every pumping period.
Total inflow volume to the facility	Pumping period	Combined septage and recreational vehicle waste pumped into the headworks channel as MG and recorded every pumping period.

2.4. Influent Monitoring

Plant influent must be monitored after preliminary treatment and results reported as described in Table 4.

Table 4 – Summary of Collection System Influent Monitoring

Item	Frequency	Description
Acidity as pH	Weekly	Collected as grab sample
Ammonia as nitrogen as milligrams per liter (mg/L)	Quarterly	Collected as 24-hour composite sample
Biochemical oxygen demand (BOD) as mg/L	Quarterly	Calculated as 5-day BOD at 20 degrees Celsius ($^{\circ}\text{C}$) from a 24-hour composite sample
Calcium as mg/L	Annually	24-Hour composite sample
Chloride as mg/L	Quarterly	24-Hour composite sample
Chromium as micrograms per liter ($\mu\text{g}/\text{L}$)	Annually	24-Hour composite sample
Chemical oxygen demand (COD) as mg/L	Monthly	24-Hour composite sample
Electrical conductivity as $\mu\text{S}/\text{cm}$	Quarterly	Grab sample
Haloacetic acids (HAA5) as $\mu\text{g}/\text{L}$	Annually	Grab sample

Item	Frequency	Description
Heavy metals as µg/L (see Attachment B)	Annually	24-Hour composite sample
Hexavalent chromium as µg/L	Annually	Grab sample
Magnesium as mg/L	Annually	24-Hour composite sample
Methylene Blue Active Substances (MBAS) as mg/L	Quarterly	24-Hour composite sample
Methyl tertiary-butyl ether (MTBE) as µg/L	Annually	Grab sample
N-nitrosodimethylamine (NDMA) as µg/L	Annually	24-Hour composite sample
Nitrate as nitrogen as mg/L	Quarterly	24-Hour composite sample
Nitrite as nitrogen as mg/L	Quarterly	24-Hour composite sample
Semi-volatile organic compounds (SVOCs) as µg/L	Annually	24-Hour composite sample
Sodium as mg/L	Annually	24-Hour composite sample
Sulfate as mg/L	Annually	24-Hour composite sample
TDS as mg/L	Annually	24-Hour composite sample
TKN as mg/L	Quarterly	24-Hour composite sample
Total cyanides as µg/L	Annually	24-Hour composite sample
Total petroleum hydrocarbons (TPH) as µg/L	Annually	Grab sample
Total phenols as µg/L	Annually	24-Hour composite sample
Total suspended solids (TSS) as mg/L	Monthly	24-Hour composite sample
Total trihalomethanes (THMs) as µg/L	Annually	Grab sample
Volatile organic compounds (VOCs) as µg/L	Annually	Grab sample

2.5. Effluent Monitoring

2.5.1 All Effluent Monitoring

Monitor and report plant effluent as described in Table 5.

Table 5 – Summary of Effluent Monitoring

Item	Frequency	Description
Acidity as pH	Weekly	Grab sample
Ammonia as nitrogen as mg/L	Monthly	24-Hour composite sample
BOD as mg/L	Monthly	Calculated as 5-day BOD at 20 °C from a 24-hour composite sample
Calcium as mg/L	Quarterly	24-Hour composite sample
Chloride as mg/L	Quarterly	24-Hour composite sample
Chromium as µg/L	Annually	24-Hour composite sample
COD as mg/L	Monthly	24-Hour composite sample
Electrical conductivity as µS/cm	Quarterly	Grab sample
HAA5 as µg/L	Quarterly	Grab sample
Heavy metals as µg/L (see Attachment B)	Annually	24-Hour composite sample
Hexavalent chromium as µg/L	Annually	Grab sample
Magnesium as mg/L	Quarterly	24-Hour composite sample
MBAS as mg/L	Quarterly	24-Hour composite sample
MTBE as µg/L	Annually	Grab sample
NDMA as µg/L	Quarterly	24-Hour composite sample
Nitrate as nitrogen as mg/L	Monthly	24-Hour composite sample
Nitrite as nitrogen as mg/L	Monthly	24-Hour composite sample
SVOCs as µg/L	Annually	24-Hour composite sample
Sodium as mg/L	Quarterly	24-Hour composite sample
Sulfate as mg/L	Quarterly	24-Hour composite sample
TDS as mg/L	Quarterly	24-Hour composite sample
TKN as mg/L	Monthly	24-Hour composite sample
Total cyanides as µg/L	Annually	24-Hour composite sample

Item	Frequency	Description
TPH as µg/L	Annually	Grab sample
Total phenols as µg/L	Annually	24-Hour composite sample
THMs as µg/L	Quarterly	Grab sample
VOCs as µg/L	Annually	Grab sample

2.5.2 Treated Effluent Discharged to Piute Ponds

Samples must be collected downstream of all treatment units. In addition to Table 5, the following samples must be collected to determine the magnitude of the corresponding parameters:

Table 6 – Effluent Discharge to Piute Ponds Monitoring

Item	Frequency	Description
Dissolved oxygen (DO) as mg/L	Weekly	Grab sample
Temperature as °C or degrees Fahrenheit (°F)	Weekly	Measured as a field parameter
Total chlorine residual as mg/L	Continuous	Chlorine residual meter and recorder
Total coliform bacteria as MPN/100 mL	Daily	Grab sample
TSS as mg/L	Monthly	24-Hour composite sample

Field tests may be accomplished by site personnel with a direct read instrument calibrated per manufacturer's specifications prior to sampling. All samples other than field measurements must be conducted by a California-certified laboratory and a United States Environmental Protection Agency (USEPA) analytical method or accepted standard method. An alternate method may be proposed and used if acceptable to the Water Board Executive Officer.

2.5.3 Disinfected Tertiary Treated Effluent

Samples must be collected downstream of all treatment units at the point of release to the channel conveying treated water to Piute Ponds. In addition to Table 5, the following samples must be collected to determine the magnitude of the following parameters as required per Table 7.

Table 7 – Disinfected Tertiary Treated Effluent Monitoring

Item	Frequency	Description
Contact time (CT) value as mg-minutes/L	Daily	Calculated when effluent is chlorinated. For each 24-hour period, record and report a CT less than 450 mg-min/L
DO as mg/L	Weekly	Grab sample
Flow as MGD	Continuous	Flow meter and recorder
Modal CT as minutes	Daily	Calculated when effluent is chlorinated
Temperature as °C or °F	Weekly	Measured as a field parameter
Total coliform bacteria as MPN/100 mL	Daily	Collected as grab sample. For each 24-hour period, record and report an effluent total coliform bacteria greater than 240/100mL in any one sample
Total chlorine residual as mg/L	Continuous	Chlorine residual meter and recorder when effluent is chlorinated. For each 24-hour period, record and report failure of chlorination equipment
Turbidity as NTUs	Continuous	Turbidity meter and recorder. For each 24-hour period, record and report average turbidity, amount of time (minutes) the turbidity exceeded 5 NTUs (if any), and the maximum turbidity

2.6. Surface Water Monitoring (Piute Ponds)

2.6.1 Sampling Locations

There are two existing monitoring stations within surface waters located in the Piute Pond area. The two stations consist of Station RS-2, located 150 feet downgradient of Challenger Way (the point of discharge from the effluent outfall channel to the Piute Pond area is the spillway located on Challenger Way), and Station RS-4, located at the spillway to Rosamond Dry Lake. Grab samples must be collected at these stations and analyzed to determine the magnitude of the parameters listed in Table 8.

2.6.2 Constituents

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

Table 8 – Piute Ponds Surface Water Monitoring

Item	Frequency	Description
Acidity as pH	Quarterly	Grab sample
Ammonia as nitrogen as mg/L	Quarterly	Grab sample
Chloride as mg/L	Quarterly	Grab sample
Chromium as µg/L	Quarterly	Grab sample
DO as mg/L	Quarterly	Grab sample
HAA5 as µg/L	Quarterly	Grab sample
Heavy metals as µg/L (see Attachment B)	Quarterly	Grab sample
Hexavalent chromium as µg/L	Quarterly	Grab sample
NDMA as µg/L	Quarterly	Grab sample
Nitrate as nitrogen as mg/L	Quarterly	Grab sample
Nitrite as nitrogen as mg/L	Quarterly	Grab sample
TDS as mg/L	Quarterly	Grab sample
Temperature as °C or °F	Quarterly	Grab sample
TKN as mg/L	Quarterly	Grab sample
Total chlorine residual as mg/L	Quarterly	Grab sample
Total hardness as mg/L	Quarterly	Grab sample
THMs as µg/L	Quarterly	Grab sample

2.6.3 Receiving Water Ammonia

2.6.3.1. Acute Ammonia

One-hour average total ammonia concentrations are dependent on pH values found in this MRP, Attachment C, Table C1. The Discharger must calculate and report the total ammonia water quality objective using the data presented in Table C1 on a quarterly basis.

2.6.3.2. Chronic Ammonia

Chronic 30-day average ammonia are dependent on temperature and pH values as shown in this MRP, Attachment C, Table C2. The Discharger must calculate and report the total ammonia water quality objective using the data presented in Table C2 on a quarterly basis.

2.6.4 Chronic Aquatic Toxicity Testing

The Discharger must conduct chronic aquatic toxicity testing at a quarterly frequency using fathead minnows (*Pimephales Promelas*) following the test method identified in the Code of Federal Regulations, title 40, part 136 (i.e., Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition [EPA-821-R-02-013]). Testing must be conducted on grab samples of undiluted treatment Facility effluent and ambient water from surface water monitoring stations. For undiluted treatment facility effluent, the toxicity test must be conducted on samples collected after dechlorination. Dilution water and control water must be prepared and used as specified by the test method.

Test results must be analyzed using the Test of Significant Toxicity (TST), as described in Attachment D to this MRP. Test of Significant Toxicity. For purposes of assessing the effluent, the instream waste concentration (IWC) is the undiluted effluent. For purposes of assessing the receiving water, the undiluted ambient water must be used as the IWC. To the extent that observations are made of organisms' response in multiple concentrations of effluent or receiving water, the IWC must be included as one of the selected concentrations, and the TST must be conducted using the IWC and control.

When any quarterly monitoring chronic toxicity test results in a "fail" at the IWC, then the discharger must conduct an additional monitoring sample and chronic toxicity test, using the specified methodology and test species described in this section, must be conducted within 30 days of when the quarterly monitoring test was initiated that resulted in the "fail" at the IWC.

The Discharger must notify the Water Board if any chronic toxicity test results in a "fail" at the IWC, no later than 24 hours of the discharger receiving the results.

2.6.5 Toxicity Identification Evaluation/Toxicity Reduction Evaluation

The Discharger must conduct a Toxicity Reduction Evaluation (TRE) when a quarterly monitoring chronic toxicity test and subsequent confirmation monitoring chronic toxicity test results in a "fail" at the IWC. A TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity.

The Discharger must submit a proposed TRE completion date to the Executive Officer for approval. The discharger must complete the TRE by the date approved by the Executive Officer.

A technical report must be submitted at the end of the TRE that details the toxicity evaluations performed and the manner in which toxicity was reduced.

2.7. Reservoir Monitoring

2.7.1 Freeboard

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

2.7.2 Reservoir Condition

The general condition of the reservoirs must be noted in the monitoring reports as must any repairs or maintenance conducted.

2.8. Vadose Zone Monitoring – Eastern Agricultural Site

2.8.1 Vadose Zone Monitoring

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

The Discharger may propose an alternate method of compliance to the method described in Sections 2.8.2 and 2.8.3 of this MRP.

2.8.2 Installation of Vadose Zone Monitoring Stations

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

- Soil moisture sensors placed at depths of 10, 16.5, 20, 33, 50, 66, and 80 feet below ground surface (ft bgs) to monitor soil moisture movement through the vadose zone.
- One lysimeter placed at 15 ft bgs for collecting samples of vadose zone moisture.

Before the Discharger installs the above monitoring devices (moisture sensors and lysimeters), a soil sample must be collected at (or adjacent to) each point where the instruments are to be installed. The samples must be analyzed for soil texture, soil moisture content, organic matter, pH, TDS, nitrate-nitrogen, ammonia nitrogen, total Kjeldahl nitrogen, and chloride.

The Discharger must prepare and submit correlations between sensor readings and moisture content. The correlations will be obtained with approximate methodology as proposed by a qualified expert pursuant to industry standards.

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

2.8.3 Monitoring of Moisture Sensors and Lysimeters

Soil moisture sensors must be monitored at a frequency of no less than daily. Quarterly, the Discharger must collect grab samples from lysimeters and analyze them for the parameters shown in Table 9.

Table 9 Moisture Sensor and Lysimeter Monitoring

Constituent	Frequency	Description
Ammonia as nitrogen as mg/L	Quarterly	Grab sample
Nitrate as nitrogen as mg/L	Quarterly	Grab sample
Nitrite as nitrogen as mg/L	Quarterly	Grab sample
TKN as mg/L	Quarterly	Grab sample
TDS as mg/L	Quarterly	Grab sample

2.8.4 Crop Water Balance

At least once per month, the Discharger must:

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

2.8.5 Agricultural Site Monitoring (Farm Chemical Use Monitoring)

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

2.9. Groundwater Monitoring

The Discharger has placed groundwater monitoring wells on and around the Facility, Piute Ponds, and the Eastern Agricultural Site (EAS). The locations of these wells are located on the GeoTracker database and as part of Board Order No. R6V-2022-Tentative, Attachment F.

2.9.1 Well Purging Method

Describe the well purging method for each groundwater monitoring well sampling event. The preferred method is low-flow purging and sampling procedures, as described by the US EPA in the [*Low Stress Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells*](#)² to minimize drawdown when collecting samples.

The USEPA procedure describes the following steps for low flow purging. Prior to sampling, all groundwater monitoring wells must be purged using either standard or low-flow techniques until dissolved oxygen (DO), electrical conductivity pH, temperature, and turbidity of extracted well water have stabilized. These parameters will be considered stable when three consecutive readings have pH values within +/- 0.1 pH units, temperature values within +/- two (2) degrees Celsius, and electrical conductivity values within +/- three (3) percent.

2.9.2 Field Parameters

At each groundwater well, the parameters listed in Table 10 must be determined each time the well is sampled as part of well purging. The final field parameters at the end of sample collection must be recorded in a table and reported with laboratory analytical data.

Table 10 – Groundwater Field Measurements

Groundwater Parameters	Units
Color	Visual
DO	mg/L
Electrical conductivity	µS/cm
pH	pH units
Static water depth	ft bgs

² Web address: <https://www.epa.gov/sites/default/files/2017-10/documents/eqasop-gw4.pdf>

Groundwater Parameters	Units
Temperature	°C
Turbidity	Nephelometric turbidity units (NTUs)

2.9.3 Water Reclamation Plant Groundwater Monitoring

Table 11 presents a list of wells for the water reclamation plant. Any additional wells or replacement wells installed to monitor the groundwater surrounding the Water Reclamation Plant must also be monitored.

Table 11 – Water Reclamation Plant List of Wells

Aquifer	Monitoring Wells
Middle Aquifer	Water Supply Well
Upper Aquifer	MW15, MW16, MW17, MW115, MW117, MW119, MW207, and MW208
Perched Groundwater Wells	MW107, MW114, MW116, and MW118
Storage Reservoir Wells	MW209, MW210, MW301, MW302, and MW303

2.9.3.1. Water Reclamation Plant Sampling Constituents

The constituents listed in Table 12 must be analyzed for all groundwater monitoring well samples collected at the Lancaster Water Reclamation Plant.

Table 12 – Water Reclamation Plant Groundwater Monitoring Well Sampling Constituents

Constituent	Frequencies for Middle Aquifer, Upper Aquifer, and Perched Groundwater Wells	Frequencies for Storage Reservoir Wells	Description
Acidity as pH	Semi-annually	Quarterly	Grab sample
Ammonia as Nitrogen as mg/L	Semi-annually	Quarterly	Grab sample
Calcium as mg/L	Semi-annually	Quarterly	Grab sample

Constituent	Frequencies for Middle Aquifer, Upper Aquifer, and Perched Groundwater Wells	Frequencies for Storage Reservoir Wells	Description
Chloride as mg/L	Semi-annually	Quarterly	Grab sample
Chromium as µg/L	Annually	Annually	Grab sample
General minerals series (see Attachment B)	Annually	Annually	Grab sample
HAA5 as µg/L	Annually	Annually	Grab sample
Heavy metals series as µg/L (see Attachment B)	Annually	Annually	Grab sample
Hexavalent chromium as µg/L	Annually	Annually	Grab sample
Magnesium as mg/L	Semi-annually	Quarterly	Grab sample
MBAS as mg/L	Semi-annually	Quarterly	Grab sample
MTBE as µg/L	Annually	Annually	Grab sample
NDMA as µg/L	Annually	Annually	Grab sample
Nitrate as nitrogen as mg/L	Semi-annually	Quarterly	Grab sample
Nitrite as nitrogen as mg/L	Semi-annually	Quarterly	Grab sample
SVOCs as µg/L	Annually	Annually	Grab sample
Sodium as mg/L	Semi-annually	Quarterly	Grab sample
Sulfate as mg/L	Semi-annually	Quarterly	Grab sample
Total cyanides as µg/L	Annually	Annually	Grab sample

Constituent	Frequencies for Middle Aquifer, Upper Aquifer, and Perched Groundwater Wells	Frequencies for Storage Reservoir Wells	Description
TDS as mg/L ²	Semi-annually	Quarterly	Grab sample
TKN as mg/L	Semi-annually	Quarterly	Grab sample
Total nitrogen as mg/L	Semi-annually	Quarterly	Grab sample
Total Organic Carbon (TOC) as µg/L	Semi-annually	Quarterly	Grab sample
TPH as µg/L	Annually	Annually	Grab sample
Total phenols as µg/L	Annually	Annually	Grab sample
THMs as µg/L	Annually	Annually	Grab sample
VOCs as µg/L	Annually	Annually	Grab sample

2.9.4 Piute Ponds Groundwater Monitoring

Groundwater monitoring must occur at all the wells installed to monitor discharges to Piute Ponds, as required by this MRP. Table 13 contains the current list of groundwater monitoring wells that must be sampled. Any additional wells or replacement wells added to monitor the groundwater surrounding Piute Ponds must also be monitored.

Table 13 – Piute Ponds List of Groundwater Monitoring Wells

Aquifer	Monitoring Wells
Shallow Groundwater	MW108, MW120, MW122, MW124, MW125, MW202, MW203, MW204, MW205, and MW212
Upper Aquifer	MW18, MW206, and MW211

2.9.4.1. Piute Ponds Groundwater Sampling Constituents

The constituents listed in Table 14 must be analyzed for all groundwater monitoring well samples collected to monitor Piute Ponds.

Table 14 – Piute Ponds Groundwater Monitoring Well Sampling Constituents

Constituent	Upper Aquifer Sampling Frequency	Shallow Ground water and MW211 Sampling Frequency	Description
Acidity as pH	Semi-annually	Biennially	Grab sample
Ammonia as nitrogen as mg/L	Semi-annually	Biennially	Grab sample
Calcium as mg/L	Semi-annually	Biennially	Grab sample
Chloride as mg/L	Semi-annually	Biennially	Grab sample
Chromium as µg/L	Semi-annually	Biennially	Grab sample
General minerals series (see Attachment B)	Semi-annually	Biennially	Grab sample
HAA5 as µg/L	Semi-annually	Biennially	Grab sample
Heavy metals series as µg/L (see Attachment B)	Semi-annually	Biennially	Grab sample
Hexavalent chromium as µg/L	Semi-annually	Biennially	Grab sample
Magnesium as mg/L	Semi-annually	Biennially	Grab sample
MBAS as mg/L	Semi-annually	Biennially	Grab sample
MTBE as µg/L	Semi-annually	Biennially	Grab sample
NDMA as µg/L	Semi-annually	Biennially	Grab sample
Nitrate as nitrogen as mg/L	Semi-annually	Biennially	Grab sample
Nitrite as nitrogen as mg/L	Annually	Biennially	Grab sample
SVOCs as µg/L	Annually	Biennially	Grab sample
Sodium as mg/L	Annually	Biennially	Grab sample
Sulfate as mg/L	Annually	Biennially	Grab sample

Constituent	Upper Aquifer Sampling Frequency	Shallow Ground water and MW211 Sampling Frequency	Description
Total cyanides as µg/L	Annually	Biennially	Grab sample
TDS as mg/L	Annually	Biennially	Grab sample
TKN as mg/L	Annually	Biennially	Grab sample
Total nitrogen as mg/L	Annually	Biennially	Grab sample
TOC as µg/L	Annually	Biennially	Grab sample
TPH as µg/L	Annually	Biennially	Grab sample
Total phenols as µg/L	Annually	Biennially	Grab sample
THMs as µg/L	Annually	Biennially	Grab sample
VOCs as µg/L	Annually	Biennially	Grab sample

2.9.5 Eastern Agricultural Site Groundwater Monitoring

Groundwater monitoring must occur at all the wells installed to monitor discharges to the EAS, as required by this MRP. Table 15 contains the current list of groundwater monitoring wells that must be sampled. Any additional wells or replacement wells added to monitor the groundwater surrounding the EAS must also be monitored.

Table 15 – Eastern Agricultural Site List of Groundwater Monitoring Wells

Aquifer	Monitoring Wells
Upper Aquifer	MW30, MW31, MW32, MW33, MW34, MW35, MW36, MW37, SW30, SW31, and SW32

2.9.5.1. Eastern Agricultural Site Sampling Parameters

The constituents listed in Table 16 must be analyzed for all groundwater monitoring samples collected to monitor the EAS.

Table 16 – Eastern Agricultural Site Sampling Parameters

Constituent	Frequency	Description
Acidity as pH	Quarterly	Grab sample

Constituent	Frequency	Description
Ammonia as nitrogen as mg/L	Quarterly	Grab sample
Calcium as mg/L	Quarterly	Grab sample
Chloride as mg/L	Quarterly	Grab sample
Chromium as µg/L	Annually	Grab sample
General minerals series (see Attachment B)	Annually	Grab sample
HAA5 as µg/L	Annually	Grab sample
Heavy metals series as µg/L (see Attachment B)	Annually	Calculated
Hexavalent chromium as µg/L	Annually	Grab sample
Magnesium as mg/L	Quarterly	Grab sample
MBAS as mg/L	Quarterly	Grab sample
MTBE as µg/L	Annually	Grab sample
NDMA as µg/L	Annually	Grab sample
Nitrate as nitrogen as mg/L	Quarterly	Grab sample
Nitrite as nitrogen as mg/L	Quarterly	Grab sample
SVOCs as µg/L	Annually	Grab sample
Sodium as mg/L	Quarterly	Grab sample
Sulfate as mg/L	Quarterly	Grab sample
Total cyanides as µg/L	Annually	Grab sample
TDS as mg/L	Quarterly	Grab sample
TKN as mg/L	Quarterly	Grab sample
Total nitrogen as mg/L ¹	Quarterly	Grab sample
TOC as µg/L	Quarterly	Grab sample

Constituent	Frequency	Description
TPH as µg/L	Annually	Grab sample
Total phenols as µg/L	Annually	Grab sample
THMs as µg/L	Annually	Grab sample
VOCs as µg/L	Annually	Grab sample

2.9.6 Scaled Groundwater Iso-contour Elevation Maps

Show quarterly groundwater level elevations above mean sea level to the nearest 1 foot and iso-concentration maps showing nitrate concentrations (at 5, 6.5, 10, 15, and 20 mg/L contours) overlaid with groundwater elevations and groundwater flow direction(s) on maps at an appropriate scale. A California State licensed civil engineer or professional geologist must prepare and approve the contour map.

2.9.7 Location Map

Include a map showing well locations, groundwater elevation contours with respect to mean sea level, groundwater flow direction, and gradient.

2.9.8 Trend Analysis

For any new groundwater monitoring wells, complete an initial trend analysis after at least four samples from new wells are collected to calculate existing water quality. Submit calculated results in the first self-monitoring report after at least eight samples are collected. In subsequent reports, provide a comparison of the groundwater constituent concentrations to background water quality using any of the parametric or non-parametric trend analysis methods described in the USEPA *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance*, and latest edition.

2.9.9 Well Repairs

When groundwater monitoring wells must be repaired, replaced, destroyed, or installed, a Work Plan must be prepared under the supervision of and signed and stamped by a Professional Geologist or by a Professional Civil Engineer with competence in groundwater hydrogeology licensed in California and submitted to Water Board staff for review and acceptance prior to the beginning of any work.

2.9.10 Well Standards

Groundwater monitoring wells must be installed according to the California Well Standards, California Department of Water Resources Bulletins 74-81 and 74-90.

2.10. Biosolids Monitoring

The Discharger must catalog the items in Table 17 each month and report them to the Water Board in quarterly self-monitoring reports.

Table 17 – Summary of Biosolids Monitoring

Item	Frequency	Description
Total volume as cubic yards	Monthly	Calculated volume of biosolids onsite, received, and disposed offsite from the wastewater treatment plant
Disposal location(s) and address(s)	Monthly	Catalogued site(s) where biosolids were transported (i.e., landfills, agriculture sites, or composting facilities), name of hauler, and date of removal
Disposal location(s) status	Monthly	Record the location of use, recipient (including name and address), biosolids reuse or disposal method, and state whether the disposal location meets CCR, title 27, section 20220 criteria

2.11. Data Presentation for Compliance Determinations

Annual monitoring reports must contain the items specified in the following subsections.

2.11.1 Site Plan

Provide an 11- by 17-inch sized site plan showing the following:

- Groundwater monitoring wells described in Table 11, Table 13, and Table 15
- Authorized disposal/recycling sites
- Surface water monitoring points
- Groundwater and land surface elevations
- Groundwater elevation isopleths at all authorized disposal/recycling sites except the Piute Ponds area.

2.11.2 Groundwater Elevation Graphs

Graphs showing long-term trends of groundwater elevations as measured in all groundwater monitoring wells associated with the Facility, Piute Ponds, and the EAS.

2.11.3 Nitrate and TDS Trends

Graphs (concentration versus time) showing long-term trends in nitrate and TDS concentrations measured in samples from lysimeters and groundwater monitoring wells.

2.11.4 Influent Trends

Graphs (concentration versus time) showing long-term trends in concentrations of ammonia as nitrogen, BOD, carbonaceous BOD (CBOD), COD, nitrate as nitrogen, TDS, TKN, and TSS in the primary treatment plant influent.

2.11.5 Piute Ponds Trends

Graphs (concentration versus time) showing long-term trends in concentrations of ammonia as nitrogen, BOD, CBOD, COD, chlorides, chlorine residual, DO, nitrate as nitrogen, temperature, pH, TDS, TKN, TSS in the effluent to Piute Ponds and surface water monitoring stations RS-2 and RS-4.

2.11.6 Effluent Trends

Graphs (concentration versus time) showing long-term trends in concentrations of ammonia as nitrogen, BOD, CBOD, COD, nitrate as nitrogen, TKN, TSS in the effluent to the EAS.

2.11.7 Apollo Park Trends

Graphs (concentration versus time) showing long-term trends in concentrations of ammonia as nitrogen, BOD, CBOD, COD, chlorine residual, nitrate as nitrogen, TKN and Turbidity in the effluent to Apollo Park.

2.12. Pretreatment Monitoring

The Discharger must prepare an annual pretreatment report describing the Discharger's pretreatment activities over the previous calendar year and its compliance with the pretreatment requirements in 40 CFR Part 403. If the Discharger is not in compliance with any requirement, then the Discharger must also include the reason for noncompliance and state how and when the Discharger will comply with that requirement. The report must include, but is not be limited to, the information in the following subsections.

2.12.1 Analytical Results

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

Wastewater sampling and analyses must be performed at the intervals specified in this Board Order. The Discharger must also provide any influent, effluent, or biosolids

monitoring data for nonpriority pollutants that the Discharger believes may be causing or contributing to interference, pass through, or adversely impacting biosolids quality. Sampling and analysis must be performed in accordance with the techniques prescribed in 40 CFR part 136 and amendments thereto.

2.12.2 Upset, Interference, or Pass Through Incidents

A discussion of upset, interference, or pass through incidents, if any, at the POTW that the Discharger either knows or suspects were caused by industrial users of the POTW system. The discussion must include the reason(s) why the incident(s) occurred, the corrective action(s) taken, and, if known, the name and address of the industrial user(s) responsible. The discussion must also include a review of the applicable local or federal discharge limitations to determine whether any additional limitations or changes to existing requirements may be necessary to prevent pass through, interference, or noncompliance with sludge disposal requirements.

2.12.3 Certification

A list of supervisors and operators possessing a certificate of appropriate grade in accordance with CCR, title 23, section 3680.

2.12.4 Industrial Users

An updated list of the Discharger's significant industrial users (SIU), including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Discharger must provide a brief explanation for each deletion. The SIU list must identify the SIUs subject to Federal Categorical Standards by specifying which set(s) of standards are applicable to each SIU. The list must also indicate which SIUs are subject to local limitations.

2.12.5 Compliance

The Discharger must characterize the compliance status of each significant industrial user by providing information, which includes the following items.

- SIU name
- Industrial Category
- Number of samples taken by the POTW during the year
- Number of samples taken by the SIU during the year
- A description that states the procedures used to ensure that all needed certificates were provided for Facilities which have a toxic organic management plan
- Standards violated during the year (Federal and local, reported separately)
- Whether the facility was in Significant Non-Compliance (SNC), as defined by 40 CFR part 403.8 (f)(2)(viii), at any time in the year

- A summary of enforcement or other actions taken during the year to return the SIU to compliance, including the type of action, and amount of fines assessed/collected (if any). Briefly describe any proposed actions, for bringing the SIU into compliance.

2.12.6 Operations and Maintenance

Documentation that the Facility must be operated and maintained in accordance with the operation and maintenance manual prepared by the municipality through the Clean Water Grant Program.

A short description of any significant changes in operating the pretreatment program which differ from the previous year including, but not limited to changes concerning: the program's administrative structure; local industrial discharge limitations; monitoring program or monitoring frequencies; legal authority or enforcement policy; funding mechanisms; resource requirements; or staffing levels.

2.12.7 Summaries

- A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases.
- A summary of public participation activities that involve and inform the public of the program including a copy of the newspaper notice, if any, required under 40 CFR part 403.8 (f)(2)(vii).
- A description of any changes in sludge disposal methods and a discussion of any concerns not described elsewhere in the report.
- A description of any changes in biosolids disposal methods and a discussion of any concerns not described elsewhere in the report, and a brief description of any program the POTW implements to reduce pollutants from nondomestic users that are not classified as SIUs.

2.13. Agricultural Site Monitoring (Annual Cropping Report and Plan)

2.13.1 Annual Cropping Report

Information on cropping results for the previous calendar year must be submitted by **April 30th** of each year. The information must include but not be limited to:

- Crop acreage, crop names and types, approximate planting and harvest dates and irrigation methods
- Amounts for irrigation, rainfall, evapotranspiration loss, and other common factors for preventing site runoff or deep percolation due to irrigation
- Description of the fate of nitrogen that was applied and available in the root zone and not accounted for in the crops harvested

2.13.2 Annual Cropping Plan

Proposed annual cropping plan must be submitted by **October 30th** of each year. The plan must include the following information for the upcoming calendar year:

- Crop acreage, crop names and types, approximate planting and harvest dates and irrigation methods
- Information demonstrating that the amount of water applied to irrigate crops at the EAS does not exceed the amount that would result in percolation of treated wastewater below the crop root zone, as described in the Discharger's application
- Description of the fate of nitrogen that will be applied and that is already available in the root zone

2.14. Operation and Maintenance Monitoring

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

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

2.15. Stormwater Monitoring and Reporting Program

Waste in discharges of stormwater must be reduced or prevented to achieve the best practicable treatment level using controls, structures, and BMPs. At minimum, the Discharger must: develop and implement a site-specific stormwater pollution control plan (SWPCP); conduct monitoring including visual observations and periodic collection of samples for analytical analysis; evaluate stormwater monitoring data; implement appropriate response actions when monitoring data indicate non-compliance with the stormwater monitoring program; and provide annual reports to the Water Board.

2.15.1 Stormwater Pollution Control Plan

By **November 11, 2022**, the Discharger must develop, implement, and submit a site-specific SWPCP to the Water Board. A copy of the SWPCP (and amendments thereto) must be maintained at the Facility and available to site personnel at all times. All stormwater events must be reported in the quarterly self-monitoring report. Should the

SWPCP be modified or revised, a new copy must be submitted to the Water Board. The SWPCP must contain, at minimum, the following elements.

2.15.1.1. Facility Contact Information

List all site contacts including those persons responsible for assisting with the implementation of the SWPCP.

2.15.1.2. Site Map

Include a site map illustrating the Facility boundary; all stormwater drainage areas within the Facility and the flow direction of each drainage area; locations of stormwater collection and conveyance systems including associated discharge locations and directions of flow; locations of stormwater monitoring points; locations of structural control measures that affect run-on; and locations of all industrial storage areas and storage tanks, shipping and receiving areas, fueling areas, vehicle and equipment storage/maintenance areas, material handling and processing areas, waste treatment and disposal areas, cleaning and material reuse areas, and other areas of industrial activity that may have potential pollutant sources.

2.15.1.3. List of Industrial Materials

List all industrial materials handled at the Facility, the locations where each material is stored and handled, as well as the typical quantities and handling frequency.

2.15.1.4. Potential Pollutant Sources

Describe all potential pollutant sources including industrial processes, material handling and storage areas, dust and particulate generating activities, non-stormwater discharges, and erodible surfaces.

2.15.1.5. Best Management Practices

Provide a narrative description of each minimum and/or advanced BMP being implemented at the Facility, as well as a summary table that identifies each area of industrial activity, the associated pollutant sources and pollutants, and the specific BMPs being implemented.

The following minimum BMPs must be implemented and maintained to reduce or prevent pollutants in industrial stormwater discharges: good housekeeping; preventative maintenance; spill and leak prevention response; material handling and waste management; erosion and sediment controls; an employee training program; and quality assurance and record keeping.

Advanced BMPs may be necessary to reduce or prevent discharges of pollutants in stormwater discharges in a manner that reflects best industry practice considering technological availability and economic practicability and achievability. Advanced BMPs may include but are not limited to exposure minimization BMPs; stormwater containment

and discharge reduction BMPs; treatment control BMPs; or other advanced BMPs based on site-specific criteria.

2.15.1.6. Stormwater Monitoring

The SWPCP must include a stormwater monitoring plan that includes the following elements.

2.15.1.7. Monitoring Points

Stormwater discharge monitoring locations must be selected such that samples collected are representative of stormwater discharges leaving each drainage area identified for the Facility. The stormwater discharge monitoring locations must be identified on the site plan in the SWPCP.

2.15.1.8. Stormwater Sampling and Thresholds

The Discharger must collect stormwater samples, from each stormwater discharge monitoring location, from each qualifying storm event, and analyze for all monitoring parameters described below and compare the results to the water quality thresholds.

Table 18 – Stormwater Sampling Parameters

Parameter	Water Quality Thresholds
Acidity as pH	Measured pH must not be less than 6.0 nor greater than 9.0
Turbidity as NTUs	Stormwater discharges must not exceed 500 nephelometric turbidity units (NTUs)
Oil and Grease, total as mg/L	Stormwater discharges must not contain oils and greases at concentrations in excess of 15 milligrams per liter (mg/L)
Iron as mg/L	Stormwater discharges must not contain dissolved iron at concentrations in excess of 1.0 mg/L

2.15.1.9. Analytical Methods

All stormwater samples, except for pH, are to be analyzed by a California state-certified laboratory using the most recently approved SW-846 USEPA method or other equivalent USEPA method. An alternate method may be proposed and used if acceptable to the Water Board's Executive Officer.

2.15.1.10. Qualifying Storm Event

A qualifying storm event is a precipitation event that produces a stormwater discharge for at least one drainage area and is preceded by 48 hours with no discharge from any

drainage area. Samples must be collected from two qualifying storm events during each semi-annual period (January 1 to June 30 and July 1 to December 31). If enough qualifying storm events do not occur within a given year, then the Discharger must document and report that information in reports.

2.15.2 Visual Observations

Monthly, the Discharger must visually observe and document, during normal operating hours, each drainage area for the following: the presence or indications of prior, current, or potential non-stormwater discharges and their sources; authorized non-stormwater discharges, their sources, and associated BMPs; and all potential pollutant sources.

Visual observations must also be conducted at the same time that stormwater sampling occurs. At the time a stormwater sample is collected, the Discharger must observe and document the discharge for the following.

- The presence or absence of floating and suspended materials, oil and grease, discolorations, turbidity, odors, trash/debris, and source(s) of any discharged pollutants.
- In the event that a discharge location is not visually observed during the sampling event, the Discharger must record which discharge locations were not observed during sampling or that there was no discharge from the discharge location.

2.15.3 Calibration Documentation

Annually, the Discharger must submit documentation of instrument calibration and performance checks to verify proper operation of any field monitoring equipment.

2.15.4 Stormwater Data Evaluation and Response Actions

The stormwater monitoring data (stormwater sampling and analytical data and visual observations) must be evaluated to determine the following: the effectiveness of BMPs in reducing or preventing pollutants in the stormwater discharges; compliance with the monitoring parameter water quality thresholds; and the need to implement additional BMPs and/or SWPCP revisions.

The results of all stormwater sampling and analytical results from each distinct sample must be directly compared to the water quality threshold for the corresponding monitoring parameter. An exceedance of one or more water quality threshold requires the Discharger to implement the following response actions:

- Notify the Water Board verbally or via email within 30 days of obtaining laboratory results whenever a determination is made that a water quality threshold is exceeded for one or more stormwater monitoring parameters.
- Identify the pollutant sources that may be related to the exceedance and whether the BMPs in the SWPCP have been properly implemented and perform BMP maintenance, if necessary.

- Assess the SWPCP and its implementation to determine whether additional BMPs or SWPCP measures are necessary to reduce or prevent pollutants in stormwater discharges.
- Revise or amend the SWPCP, as appropriate, to incorporate the additional BMPs or SWPCP measures necessary to reduce or prevent pollutants in stormwater discharges and implement the revised SWPCP no later than 60 days following the reported exceedance. Or demonstrate, to the satisfaction of the Executive Officer, that the exceedance(s) is attributed solely to non-industrial pollutant sources and/or to natural background sources.

3. REPORTING

3.1. Report Submittal

3.1.1 GeoTracker Summary

The Discharger must comply with the Electronic Submittal of Information (ESI) requirements. Therefore, in accordance with this MRP, all correspondence, reports, and groundwater monitoring data must be uploaded to the State Water Board's GeoTracker database. The global identification number to be used for the site in GeoTracker is WDR100030189.

The [GeoTracker website](https://geotracker.waterboards.ca.gov/)³ can be accessed for account registration and document upload. The GeoTracker Help Desk can be reached to answer questions at GeoTracker@waterboards.ca.gov via email or (866) 480-1028 via phone.

3.1.2 GeoTracker Data

The Discharger must submit all effluent and groundwater data to the State Water Board's GeoTracker database and must be connected to surveyed and non-surveyed field sampling points (FSPs). Data must be in Electronic Data Format (EDF), which includes monitoring locational data (latitude and longitude) and searchable portable document format (PDF) monitoring reports.

Table 19 – Summary of Items Submitted to GeoTracker

Item	Frequency	Description
Boring Logs and Well Screen Intervals	One-time	Boring logs must be prepared by an appropriate California licensed professional and need to be submitted in PDF format. If a monitoring well is installed, the screen depth and interval must be reported.

³ Web address: <https://geotracker.waterboards.ca.gov/>

Item	Frequency	Description
Locational Data	One-time	Permanent groundwater sampling locations must be established as surveyed FSPs based on a survey by a California licensed surveyor. Permanent effluent, receiving water, and other sampling locations must be established as non-surveyed FSPs. The locational information for these sampling points must be submitted using the Geo_XY file.
Site Map	One-time	An electronic site plan map must be submitted into the GEO_MAP file and display site features, pond location, adjacent streets, and sampling locations for all groundwater samples. The site map is a stand-alone document that may be submitted in various formats. Updated site maps must be submitted when site conditions change.
Lab Data	Based on submittal schedule	Analytical data (including geochemical data) for all groundwater samples that are collected for the purpose of subsurface investigation or remediation must be submitted in specified EDF format.
Depth to Water Data	Based on submittal schedule	Monitoring wells need to have the depth-to-water information reported in the GEO_WELL file whenever the data is collected, even if the well is not actually sampled during the sampling event.
Elevation Data	Based on submittal schedule	Groundwater elevation measurements (as related to the top of groundwater well casing elevation or other measuring point elevation used) must be reported as elevation above mean sea level and submitted as part of the GEO_Z file.
All Other Reports and Correspondence	Based on submittal schedule	Portable document format (PDF) copies of all reports and correspondence must be uploaded to GeoTracker based on the reporting schedule for the applicable report.

3.2. General Reports

3.2.1 Reports

3.2.1.1. Data Tables

The Discharger must place the following data into data tables that are a function of date:

- Influent treatment plant flow and sample results
- Effluent flow to storage reservoirs, Piute ponds, EAS, and other recycled water sites and sample results

- Groundwater monitoring data (including field parameters)
- Pond freeboard data
- Historical data for entries covering, at minimum, the last five years

The Discharger must submit the data table to the Water Board in one or more Microsoft Excel® files or one or more comma delimited formatted file with the PDF self-monitoring report submission.

Where additional data are collected above minimum reporting requirements pursuant to the WDR, that additional data must be reported.

3.2.1.2. Laboratory Reports

The Discharger must include copies of all original laboratory analytical reports in the self-monitoring report.

For sample results greater than or equal to the laboratory's reporting limit (RL), the Discharger must report the results as measured by the laboratory (i.e., the measured chemical concentration in the sample). When sample results are less than the laboratory's RL, yet greater than or equal to the laboratory's Method Detection Limit (MDL), the Discharger must report the results as "Detected, but Not Quantified (DNQ)." The Discharger must also report the estimated chemical concentration of the sample using an appropriate data qualifier (e.g., "J" flag).

3.2.1.3. Compliance Self-Assessment:

The Discharger must use a cover letter for all reports provided to the Water Board associated with this MRP.

The Discharger must provide a written explanation for all numeric and narrative plant effluent and receiving water violations, including dates and cause(s) of violations and measures to prevent violation reoccurrence, in each report. Include a specific assessment as to whether any data indicate a violation of receiving water quality objectives because of the discharge.

Quarterly reports must include graphs or charts covering the monitoring period, where appropriate, to illustrate trends (e.g., effluent and groundwater results). Annual reports must include graphs or charts covering, at a minimum, five prior years, where appropriate, to illustrate trends (e.g., effluent and groundwater results). All reports must compare collected data with relevant effluent limitations, water quality objectives, and historical information.

In addition to reporting raw data collected from field instruments and sample analyses, the Discharger must report calculated data in a format consistent with the effluent limitation to summarize an evaluation of compliance within the table. Effluent limitations must be included in a separate table column with an additional column to reflect data and sample analysis results in a format that is consistent with effluent limitations stated

in the WDRs. (e.g., for disinfected secondary-23 recycled water, total coliform results must be reported in tabular format with daily sample results along with a separate column indicating the 7-day median value and 7-day median limit value).

3.2.2 Records Retention

Pursuant to CWC, section 13267(b), all sampling and analytical results must be made available to the Water Board upon request. The Discharger must retain 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 for a minimum of five years. This period of retention must be extended for any unresolved litigation regarding this discharge, or when requested by the Water Board.

3.2.3 Operational Log

Pursuant to CWC, section 13267(b), an operation and maintenance log must be maintained at the facility. All monitoring and reporting data must be recorded in a permanent logbook.

3.2.4 Signatory

Monitoring reports must be signed by:

- 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.
- In the case of a partnership, by a general partner.
- In the case of a sole proprietorship, by the proprietor.
- 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.

3.2.5 Contact Information

Every report must contain a cover sheet with key identifying information (as listed in Table 20, which may be used as a template) and must contain the following statement:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision following a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my knowledge of the person(s) who manage the system, or those directly responsible for data gathering, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Table 20 – Template Facility Information Summary

Facility Name	
WDR Order Number	
WDID Number	
Report Type	
Report Period	
Date	
Address	
Contact Name	
Contact Job Title	
Contact Signature	
Contact Phone	
Contact Email	

3.2.6 Modifications

This MRP may be modified at the discretion of the Water Board Executive Officer.

3.3. Sampling and Analysis Plan

The Discharger must submit a revised, sampling and analysis plan (SAP) by **November 11, 2022**, for Water Board staff review and approval. The SAP must include a detailed description of procedures and techniques for:

- Sample collection method, sample locations, including purging techniques, sampling equipment, and decontamination of sampling equipment,
- Measurement of static groundwater levels and depths of wells,
- Groundwater well purging methods,
- Groundwater well sample collection methods,
- Sample preservation and shipment,
- Analytical methods and procedures,
- Chain of custody control,
- Quality assurance and quality control (QA/QC) methods,
- Frequency of calibration for any onsite field equipment or flow meters, and
- Description of how onsite measurements are performed.

The Discharger must also keep the most recent version of the SAP at the plant and accessible to personnel performing sampling and analyses. The SAP is subject to review during the Water Board's plant compliance inspections.

3.4. New Monitoring Wells

Pursuant to the CWC, section 13267, the Discharger must submit to the Water Board, work plans for installing additional groundwater monitoring wells to establish the nature, extent, and depth of polluted or degraded groundwater from historical facility discharges and to determine compliance with the Board Order.

3.4.1 Time Schedule

The wells should be installed according to the time schedule described in Table 21.

Table 21 – Groundwater Monitoring Well Installation Time Schedule

Period	Task
January 1, 2023	Submit a Work Plan and implementation schedule for the Executive Officer's acceptance, proposing construction of additional groundwater monitoring wells to provide for compliance monitoring at the Facility and establish the nature and extent of groundwater pollution at the Facility.
June 1, 2023	Complete monitoring well installation and notify Water Board staff.
August 1, 2023	Submit an as-built Well Completion Report that must include all initial analytical data and the California Department of Water Resources Well Drillers Reports.

3.4.2 Work Plan

Well construction must comply with California Well Standards, California Department of Water Resources Bulletins 74-81 and 74-90. All appropriate local and county well permits must be obtained prior to well installation. Wells must be completed in the first encountered groundwater or nested as appropriate. The Work Plan must be signed by a California licensed Civil Engineer or Professional Geologist and specify the following.

- Well locations
- Well design including casing diameter and material
- Proposed well screen interval, slot size, total depth
- Drilling method
- Waste handling and disposal

- Well development method
- Well sample purging methods
- Well sampling procedures
- Initial water quality constituent analyses to include all constituents in Section 2.9.
- Plan to collect a sufficient number of samples of existing groundwater wells to determine aquifer water quality and background water quality.

3.4.3 Well Completion Report

Well Completion Reports must include the following.

- Signature and stamp of a California licensed Professional Civil Engineer or Professional Geologist indicating that well installation was completed per the proposed Work Plan and if any deviations occurred.
- Copies of all Well Completion Reports filed with the California Department of Water Resources in accordance with the CWC, section 13750 et seq. (*Form No. DWR 188 REV. 11-97*).
- Drillers report and lithology sample records.
- Geophysical and borehole logs with cross sections.
- Initial water quality sample results, including the drillers report, lithology samples records, field data sheets and all laboratory analytical reports.
- Well survey completed and signed by a California licensed surveyor indicating the well coordinate locations, top of casing or measuring point elevations and ground surface elevations.
- Copies of well as-built drawings.
- A map showing the locations of all monitoring wells at the site, any nearby water supply wells, and other plant site features including head works, land ownership boundaries, treatment areas, sludge drying beds, and storage reservoirs.
- Initial groundwater elevation contour map showing the locations of all monitoring wells at the site, nearby water supply wells, and static groundwater elevations.
- Groundwater iso-concentration plume maps for nitrate and TDS.

3.5. Monthly Self-Monitoring Reports

Monthly self-monitoring reports are **due on the 30th day of the second month** following the end of each monthly monitoring period. This schedule is presented in Table 1.

All data collected during the monitoring period must be reported. Where additional data are collected including more than minimum reporting requirements pursuant to the WDR, that additional data must also be reported. The Discharger must analyze the following types of data, as available:

- Septage received
- Influent treatment plant flow and sample results
- Effluent flow and sample results for Piute Ponds
- Recycled water delivered and sample results.

3.5.1 Compliance Assessment

Each self-monitoring report must state whether compliance was achieved for the monitoring period. Provide a written explanation for all numeric and narrative effluent and receiving water violations, including dates and cause(s) of violations and measures to prevent violation reoccurrence. Each self-monitoring report must include a specific compliance assessment of the following items.

- Influent flow measurements compared to flow limitations.
- Effluent water quality sampling data compared to each effluent limitation.
- Delivered recycled water results, calculations, and comparison to criteria in CCR, title 22. These criteria include:
 - 7-day median coliform for the last seven days
 - Number of samples in a calendar month exceeding total coliform of 23 MPN
 - Number of samples exceeding total coliform of 240 MPN
 - Average turbidity within a calendar day
 - Exceedance of 5 NTUs within a calendar day
 - Exceedance of 10 NTUs at any time.

3.5.2 Operations

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

3.5.3 Laboratory Reports

The Discharger must include copies of all original laboratory analytical reports and chain-of-custody record in the monitoring report. Additionally, the Discharger must submit data tables to GeoTracker.

For sample results greater than or equal to the laboratory's RL, the Discharger must report the results as measured by the laboratory (i.e., the measured chemical concentration in the sample). When sample results are less than the laboratory's RL, yet greater than or equal to the laboratory's MDL, the Discharger must report the results as "Detected, but Not Quantified (DNQ)." The Discharger must also report the estimated chemical concentration of the sample using an appropriate data qualifier (e.g., "J" flag).

3.5.4 Effluent and Receiving Water Limits Tabulated Reporting

The report must include analyses of results with respect to compliance. In addition to reporting raw data collected from field instruments and sample analyses, the Discharger must report compliance calculations (ammonia, BOD, coliform, TSS, etc.). Sampling results must be reported in tabular form comparing sampling results and, as applicable, either effluent or receiving water limitations. The Discharger must submit data tables to GeoTracker.

3.6. Quarterly Self-Monitoring Reports

Quarterly self-monitoring reports are **due on the 30th day of the second month** following the end of each quarterly monitoring period. This schedule is presented in Table 1.

All data collected during the monitoring period must be reported. Where additional data are collected including more than minimum reporting requirements pursuant to the WDR, that additional data must also be reported. The Discharger must analyze the following types of data, as available:

- Influent sample results
- Effluent sample results
- Piute Ponds surface water sampling results
- Recycled water delivered and sample results
- Groundwater monitoring data (including field parameters and groundwater elevations).
- Surface water monitoring results
- Biosolids monitoring

3.6.1 Compliance Assessment

Each self-monitoring report must state whether compliance was achieved for the monitoring period. Provide a written explanation for all numeric and narrative effluent and receiving water violations, including dates and cause of violations and measures to prevent violation reoccurrence. Each self-monitoring report must include a specific compliance assessment of the following items.

- Effluent water quality sampling data compared to each effluent limitation.
- Delivered recycled water results, calculations, and comparison to criteria in CCR, title 22.
- Receiving surface water samples analyzed for the ammonia objective and toxicity.
- Receiving groundwater quality sampling data compared to primary and secondary maximum contaminant levels.

3.6.2 Operations

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

3.6.3 Laboratory Reports

The Discharger must include all original laboratory analytical reports and chain-of-custody record in the monitoring report. Additionally, the Discharger must submit data tables to GeoTracker as one or more Microsoft Excel® files or one or more comma delimited formatted files converted to PDF.

For sample results greater than or equal to the laboratory's reporting limit (RL), the Discharger must report the results as measured by the laboratory (i.e., the measured chemical concentration in the sample). When sample results are less than the laboratory's RL, yet greater than or equal to the laboratory's Method Detection Limit (MDL), the Discharger must report the results as "Detected, but Not Quantified (DNQ)." The Discharger must also report the estimated chemical concentration of the sample using an appropriate data qualifier (e.g., "J" flag).

3.6.4 Effluent and Receiving Water Limits Tabulated Reporting

The report must include analyses of results with respect to compliance. In addition to reporting raw data collected from field instruments and sample analyses, the Discharger must report compliance calculations (ammonia, BOD, coliform, TSS, etc.). Sampling results must be reported in tabular form comparing sampling results and, as applicable, either effluent or receiving water limitations. The Discharger must submit data tables to GeoTracker.

3.6.5 Groundwater Reporting

Reports providing groundwater data and analytical results must contain information satisfying the following subsections.

3.6.5.1. Well Purging Method

Describe the well purging method for each groundwater monitoring well sampling event.

3.6.5.2. Scaled Groundwater Iso-contour Elevation Map

Show quarterly groundwater level elevation above mean sea level to the nearest 1 foot and iso-concentration map showing nitrate concentrations (at 5, 6.5, 10, 15, and 20 mg/L contours) overlaid with groundwater elevations and groundwater flow direction(s) on maps at an appropriate scale. A California licensed civil engineer or professional geologist must prepare and approve the contour map.

3.6.5.3. Location Map

Include a map showing well locations, groundwater elevation contours with respect to mean sea level, groundwater flow direction and gradient.

3.6.5.4. Trend Analysis

For any new groundwater monitoring wells, complete a trend analysis for ammonia, nitrate, and TDS after at least four samples from new wells are collected to calculate existing water quality. Submit calculated results in the first monitoring report after at least eight samples are collected. In subsequent reports, provide a comparison of the groundwater constituent concentrations to background water quality using any of the parametric or non-parametric trend analysis methods described in the USEPA *Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance*, and latest edition.

3.6.5.5. Well Repairs

When groundwater monitoring wells must be repaired, replaced, destroyed, or installed; a work plan must be prepared. The work plan must be supervised, signed, and stamped by a California licensed professional geologist or by a professional civil engineer with competence in groundwater hydrogeology. The final copy must be submitted to Water Board staff for acceptance prior to the beginning of any work.

3.7. Annual Report

The Discharger must submit an Annual Report by **March 1** of each year. The report encapsulates the period from January 1 through December 31 of the previous calendar year and must, at a minimum, include the following.

3.7.1 Facility Information

3.7.1.1. Map

Facility site map showing treatment plant, disposal, and all monitoring well and surface water sampling locations.

3.7.1.2. Certified Operators List

Names and grades of all certified operators.

3.7.1.3. Operations

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

3.7.2 Annual Flow and Recycled Water Report

The Discharger must provide a statement that the previous year's volumetric reporting was completed by **April 30th**. This deadline is required by Recycled Water Policy.

The volumetric reporting must comprise all required items, including:

- Monthly volume of wastewater collected and treated by the wastewater treatment plant.
- Monthly volume of wastewater treated, specifying level of treatment, including treated wastewater discharged.
- Monthly volume of recycled water distributed, and annual volume of treated wastewater distributed for beneficial use in compliance with CCR, title 22 use categories.

3.7.3 Pretreatment Program Assessment

In the Annual Report, the following information related to the Discharger's voluntary pretreatment program must be provided.

3.7.3.1. Inventory

Report significant users, including names, addresses, categories, industrial pollutants, and volumes. Significant industrial users should be defined in a manner similar to 40 CFR Part 403 as follows:

- An industrial user discharging more than 25,000 gallons per day
- A categorical industrial user defined in 40 CFR 400 – 471
- A use that can cause upset, pass through, or interference to the wastewater treatment system
- Any industrial user using acidic or metallic material discharges to the collection system without treatment.

3.7.3.2. Upset, Interference, or Pass-Through Incidents

Report any upset, interference, or pass-through incidents at the treatment plant which the Discharger knows or suspects was caused by industrial discharges into the collection system.

3.7.3.3. Enforcement Actions

Report enforcement actions taken or proposed for industrial users.

3.7.3.4. Program Status

Report a summary of the pretreatment and/or source control functions including, but not limited to the following:

- Legal authorities
- Pretreatment source control requirements
- Status of funding and personnel to implement the pretreatment source control program
- Summary of sampling location, laboratory data analyses required by the Discharger before the discharge to collection system from the industrial uses
- Summary of inspections completed
- Summary of complaints received and related actions.

3.7.4 Data Analyses

3.7.4.1. Compliance

Include an analysis of compliance for all disposal methods (Piute Ponds and recycled water). For effluent, include a time series trend analysis for flow, BOD, TSS, and total nitrogen. For groundwater quality, include a time series trend analysis for TDS and all nitrogen species.

3.7.4.2. Data Tables

The Discharger must submit data tables to GeoTracker as one or more Microsoft Excel® files or one or more comma delimited formatted files converted to PDF.

3.7.4.3. Monitoring Well Data

Graphs and tables of static groundwater elevation and key constituent concentrations versus time for each monitoring well. Include data for the previous five years of measurement, at a minimum.

3.7.4.4. Trends Illustration

The Discharger must include graphs or charts covering, at a minimum, five prior years, where appropriate, to illustrate trends (e.g., effluent and groundwater results). All reports must include a compliance calculation. The compliance calculation includes comparison of all collected data to relevant effluent limitations for all disposal methods, water quality objectives, and historical information.

3.7.4.5. Effluent Data

Graphs and tables showing long-term trends in effluent concentrations, including the following constituents: Flow, BOD, ammonia, nitrate, TKN, total nitrogen, TDS, and TSS. Include data for the previous five years of measurement, at a minimum.

3.8. Disinfection Failure Reporting

Any failure must initiate a plant shut down, diversion of inadequately treated water, and

notification to the Water Board within 24 hours. This determination is based on criteria in CCR, title 22, section 60001, et. seq.

3.9. Spill Reporting

3.9.1 Local Official

In accordance with the requirements of the California Health and Safety Code (HSC), section 5411.5, the Discharger must provide notification to the local health officer or the director of environmental health with jurisdiction over the affected water body of any unauthorized release of sewage or other waste that causes, or probably will cause, a discharge to any waters of the state.

3.9.2 Office of Emergency Services

In accordance with the requirements of CWC, section 13271, the Discharger must provide notification to the California Office of Emergency Services (Cal OES) of the release of reportable amounts of hazardous substances or sewage that causes, or probably will cause, a discharge to any waters of the state. CCR, title 23, section 2250, defines a reportable amount of sewage as being 1,000 gallons or more. The phone number for reporting these releases to Cal OES is (800) 852-7550.

3.9.3 Lahontan Water Board

3.9.3.1. Within Two Hours

The Discharger must notify the Water Board of any authorized release of sewage from its wastewater treatment plant that causes, or probably will cause, a discharge to a water of the state as soon as possible, but not later than **two hours** after becoming aware of the release.

This notification does not need to be made if the Discharger has notified Cal OES. The phone number for reporting these releases of sewage to the Lahontan Water Board is (760) 241-6583.

At a minimum, the following information must be provided:

- Location, date, time of the release
- Waterbody that received or will receive the discharge
- Estimate of the amount, or volume, of sewage or other waste released and the amount that reached a surface water at the time of notification
- If ongoing, the estimated flow rate of the release at the time of the notification
- Name, organization, phone number, and email address of the reporting representative.

3.9.3.2. Within 24 Hours

As soon as possible, but **not later than 24 hours** after becoming aware of an unauthorized discharge of sewage or other waste from its wastewater treatment plant to a water of the state, the Discharger must submit a statement to the Water Board by email.

If the discharge is 1,000 gallons or more, this statement must certify that Cal OES has been notified of the discharge in accordance with CWC, section 13271. The statement must also certify that the local health officer or director of environmental health with jurisdiction over the affected water bodies has been notified of the discharge in accordance with HSC, section 5411.5. The statement must also include, at a minimum, the following information:

- Agency, Board Order No. and MRP No., if applicable
- Location, date, and time of the discharge
- Map showing the release location
- Description of the level of treatment of sewage or other waste discharged
- Initial estimate of the amount, or volume, of sewage or other waste released and the amount that reached a surface water
- Cal OES control number and the date and time that the notification of the incident was provided to Cal OES
- Name of the local health officer or director of environmental health representative notified (if contacted directly), the date and time of notification, and the method of notification (e.g. telephone, email fax).

4. EXECUTIVE OFFICE SIGNATURE

Ordered by: _____
MICHAEL R. PLAZIAK, P.G.
EXECUTIVE OFFICER

Dated: _____

Attachments:

- A. Definitions and Acronyms
- B. Minerals and Metals
- C. Ammonia Concentrations
- D. Chronic Toxicity Test

MRP Attachment A: Definitions and Acronyms

Table A1—General Acronyms and Abbreviations

Abbreviation	Explanation
Basin Plan	Water Quality Control Plan for the Lahontan Region
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
CEQA	California Environmental Quality Act
CWA	Federal Water Pollution Control Act of 1972
CWC	California Water Code
District	Los Angeles County Sanitation District
Discharger	Discharger is the primary responsible party
DWP	Los Angeles Department of Water and Power
DWR	Department of Water Resources
DWQ	Division of Water Quality
EDF	Electronic data format
ESI	Electronic Submittal of Information
FSPs	Field sampling points
HA	Hydrologic Area
HU	Hydrologic Unit
Lahontan Water Board	Lahontan Regional Water Quality Control Board
MRP	Monitoring and reporting program
MRRs	Master Reclamation Requirements
NOA	Notice of applicability
NPDES	National pollutant discharge elimination system
PDF	Portable document format
QA/QC	Quality assurance and quality control
Recycled Water Policy	Water Quality Control Policy for Recycled Water
ROWD	Report of waste discharge
RWQCB	Regional Water Quality Control Board
SNMPs	Salt and Nutrient Management Plans
State Water Board	State Water Resources Control Board
USEPA	United States Environmental Protection Agency
USFS	United States Forest Service
USGS	United States Geological Survey
WDID	Waste discharge identification
WDRs	Waste discharge requirements
WRRs	Waste reclamation requirements

Table A2—Constituent Abbreviations

Abbreviation	Explanation
BOD	biochemical oxygen demand
DO	dissolved oxygen
E. coli	Escherichia coli
MBAS	methylene blue active substances (surfactants)
MTBE	Methyl tertiary-butyl ether
NH ₄ -N	ammonia as nitrogen

Abbreviation	Explanation
NO ₃ -N	nitrate as nitrogen
TKN	total Kjeldahl nitrogen
TN	total nitrogen
TSS	total suspended solids

Table A3—Units Abbreviations

Abbreviation	Explanation
°C	degrees Celcius
ft bgs	feet below ground surface
µS/cm	microSiemens per centimeter
µg/L	micrograms per liter
meq/L	milliequivalents per liter
MG	million gallons
MGD	million gallons per day
mg/L	milligrams per liter
MPN/100 mL	most probable number per 100 milliliters
msl	mean sea level
NTU	Nephelometric Turbidity Units
pH	potential of hydrogen

MRP Attachment B: Minerals and Metals

Table B1—List of Minerals Series

Mineral	Units	Standard Method
Acidity as pH	pH units	Measured
Anion sum	meq/L	EPA 300.0
Bicarbonate	mg/L	Measured
Calcium	mg/L	Measured
Carbonate	mg/L	Measured
Cation sum	meq/L	Calculated
Chloride	mg/L	EPA 300.0
Electrical conductivity	µS/cm	Measured
Fluoride	mg/L	SM 4500F C
Magnesium	mg/L	EPA 200.7
Nitrate as nitrogen	mg/L	EPA 300.0
Potassium	mg/L	EPA 200.7
Sodium	mg/L	EPA 200.7
Sulfate	mg/L	EPA 300.0
TDS	mg/L	SM 2540C
Total alkalinity	mg/L	SM 2320B
Total hardness	mg/L	Calculated

Table B2 – List of Metals Series

Constituent	Units	Method
Aluminum	µg/L	Measured
Arsenic	µg/L	Measured
Barium	µg/L	Measured
Cadmium	µg/L	Measured
Total chromium	µg/L	Measured
Cobalt	µg/L	Measured
Copper	µg/L	Measured
Hexavalent chromium	µg/L	Measured
Iron	µg/L	Measured
Lead	µg/L	Measured
Mercury	µg/L	Measured
Molybdenum	µg/L	Measured
Nickel	µg/L	Measured
Selenium	µg/L	Measured
Silver	µg/L	Measured
Thallium	µg/L	Measured
Vanadium	µg/L	Measured
Zinc	µg/L	Measured

MRP Attachment C: Ammonia Concentrations

1. Ammonia Lookup Tables

The following two tables apply to Amargosa Creek downstream of the Los Angeles County Sanitation District No. 14 discharge point and to the Piute Ponds and associated wetlands. These tables mimic Basin Plan Tables 3-19a and 3-19b.

The first column of Table C1 represents a lookup value for acidity measured as pH. The second column provides values of the one-hour average total ammonia concentration as milligrams per liter as ammonia (mg/L as NH₃).

The first column of Table C2 represents a lookup value for acidity measured as pH. The header row of the remaining columns provides a lookup value for temperature measured as degrees Celsius (°C). The tables can be used by cross referencing column and row to return values as mg/L as NH₃. Finally, if desired, multiply the value by 0.822 to convert it to milligrams per liter as nitrogen (mg/L as N).

Table C1—Basin Plan Table 3-19a pH Dependent Values of the Acute Ammonia Toxicity Objective

pH	One-hour Average Total Ammonia Concentration (mg nitrogen/L)
6.5	48.8
6.6	46.8
6.7	44.6
6.8	42.0
6.9	39.1
7.0	36.1
7.1	32.8
7.2	29.5
7.3	26.2
7.4	23.0
7.5	19.9
7.6	17.0
7.7	14.4
7.8	12.1
7.9	10.1
8.0	8.40
8.1	6.95
8.2	5.72
8.3	4.71
8.4	3.88
8.5	3.20
8.6	2.65
8.7	2.20
8.8	1.84
8.9	1.56
9.0	1.32

Table C2—Basin Plan Table 3-19b Temperature and pH-Dependent Values of the Chronic (30-Day Average) Ammonia Toxicity Objective

pH	0°C	14°C	16°C	18°C	20°C	22°C	24°C	26°C	28°C	30°C
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475
8.5	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401
8.6	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339
8.7	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208
9.0	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179

2. Ammonia Concentrations – Alternative Calculations

There are alternative methods for determining ammonia concentrations based on temperature and pH values not contained in the preceding lookup tables.

2.1.1 Conservative Estimate

One method for determining an ammonia concentration not contained within the tables is through estimation. This results in the most conservative concentration. The concentration is estimated using the pH and temperature values closest to and greater than the measured pH and temperature values. Cross referencing these values in the lookup values likely returns a more conservative (aka smaller) concentration than would be otherwise calculated.

2.2. Calculation

Another method for determining an ammonia concentration not contained within the tables is through calculation. The concentration is calculated using the concentration from numerical formulas developed by the USEPA.

2.2.1 Un-ionized Ammonia Equations

2.2.1.1. Variables

- T = temperature in °C
- TCAP = temperature cap in °C
 - For 1h-NH₃, TCAP is 20 °C with salmonids present and 25 °C with salmonids absent
 - For 4d-NH₃, TCAP is 15 °C with salmonids present and 20 °C with salmonids absent
- $FT = 10[0.03(20-TCAP)]$ when $TCAP \leq T \leq 30$
- $FT = 10[0.03(20-T)]$ when $0 \leq T \leq TCAP$
- $FPH = (1+10(7.4-pH)) \div 1.25$ when $6.5 \leq pH \leq 8.0$
- $FPH = 1$ when $8.0 \leq pH \leq 9.0$
- $RATIO = 20.25 \times (10(7.7-pH)) \div (1+10(7.4-pH))$ when $6.5 \leq pH \leq 7.7$
- $RATIO = 13.5$ when $7.7 \leq pH \leq 9.0$

2.2.1.2. One-hour (1h-NH₃) un-ionized ammonia equation

$$1h-NH_3 = 0.52 \div (FT \times FPH \times 2)$$

2.2.1.3. Four-day (4d-NH₃) un-ionized ammonia equation

$$4d-NH_3 = 0.80 \div (FT \times FPH \times RATIO)$$

2.2.2 Total Ammonia Equations

2.2.2.1. Variables

Variables used in total ammonia equations presented in Sections 2.2.2.2 and 2.2.2.3 are defined herein.

- n1h is the one-hour criteria for total ammonia species (NH₄⁺ + NH₃)
- n4d is the four-day criteria for total ammonia species (NH₄⁺ + NH₃)
- pKa is the negative log of the equilibrium constant for the NH₄⁺ ⇌ NH₃ + H⁺ reaction and is calculated as $pKa = 0.0901821 + [2729.92 \div (T + 273.15)]$
- f is the fraction of un-ionized ammonia to total ammonia species: $[NH_3 \div (NH_4^+ + NH_3)]$ and is calculated as $f = 1 \div (10(pKa - pH) + 1)$

2.2.2.2. One-hour (n1h) Total Ammonia Equation

$$n1h = 1h - NH_3 \div f$$

2.2.2.3. Four-day (4d-NH3) Total Ammonia Equation

$$n4d = 4d - NH_3 \div f$$

MRP Attachment D: Test of Significant Toxicity

The following methodology describes how to complete the Test of Significant Toxicity (TST). This methodology is paraphrased from U.S. Environmental Protection Agency's National Pollutant Discharge Elimination System Test of Significant Toxicity Technical Document (2010), EPA 833/R-10-004.

Aquatic toxicity test data must be analyzed using the TST as described below in Steps 1 through 7. For any chronic aquatic toxicity test method with both lethal and sub-lethal endpoints, the sub-lethal endpoint data must be used in Steps 1 through 7.

The TST is applicable for a data analysis of an Instream Waste Concentration (IWC) compared to a control. The Regulatory Management Decision (RMD) represents the maximum allowable error rates and thresholds for toxicity and non-toxicity that would result in an acceptable risk to aquatic life. The RMD is 0.75.

2.3. Step 1

Conduct the aquatic toxicity test according to procedures in 'Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition (EPA-821-R-02-013)' for fathead minnows (*Pimephales Promelas*).

2.4. Step 2

Determine if there is no variance in the Endpoint (i.e., determine if all Replicates in each concentration have the same exact Response).

If there is no variance in the Endpoint in both concentrations being compared, compute the Percent Effect, as described in the Percent Effect section of this Attachment.

If the Percent Effect at the IWC is greater than or equal to the RMD, the sample is declared toxic and the test result is "fail." If the Percent Effect at the IWC is less than the RMD, the sample is declared non-toxic and the test result is "pass." Skip steps 3-7.

If there is variance in the Endpoint in either concentration being compared, follow steps 3-7.

2.5. Step 3

Use the data to calculate the mean Response for the control and IWC. If the data consists of proportions from a binary response (e.g., for survival, germination, and fertilization), transform the data using the arcsine square root transformation before calculating the mean Response for the control and IWC.

The arcsine square root transformation is used for such data to stabilize the variance and satisfy the normality requirement. To conduct the arcsine square root transformation, the response proportion (RP) for each Replicate (e.g., percent survival, percent fertilization), expressed as a decimal fraction (where 1.00 = 100 percent) for each treatment, is first calculated:

$$RP = \frac{\text{Number of Organisms with Response}}{\text{Number of Organisms Exposed}}$$

The square root value of the response proportion is then arcsine transformed before calculating the mean Response and analysis in Step 4. Note: Excel and most statistical software packages can calculate arcsine square root values.

If $0 < RP < 1$, then the angle (in radians) = $\arcsin(\sqrt{RP})$.

If $RP = 0$, then the angle (in radians) = $\arcsin(\sqrt{1/4n})$,

Where n = number of Organisms used for each Replicate.

If $RP = 1$, then the angle (in radians) = $\arcsin(\sqrt{1 - (1/4n)})$,

Where n = number of Organisms used for each Replicate.

Use the transformed data in the following steps.

2.6. Step 4

Conduct Welch's t-test using the following equation to obtain the calculated t value:

$$t = \frac{\bar{Y}_t - b \cdot \bar{Y}_c}{\sqrt{\frac{S_t^2}{n_t} + \frac{b^2 S_c^2}{n_c}}}$$

Where:

\bar{Y}_c = Mean Response for the control

\bar{Y}_t = Mean Response for the IWC

S_c^2 = Estimate of the variance for the control

S_t^2 = Estimate of the variance for the IWC

n_c = Number of Replicates for the control

n_t = Number of Replicates for the IWC

b = 0.75 for chronic tests; 0.80 for acute tests (Note: b is equivalent to the RMD)

Note on the use of Welch's t-test: Welch's t-test is appropriate to use when there are an unequal number of Replicates between control and the IWC. When sample sizes of the control and treatment are the same (i.e., $n_t = n_c$), Welch's t-test is equivalent to the Student's t-test.

2.7. Step 5

Adjust the degrees of freedom (ν) using the following equation:

$$\nu = \frac{\left(\frac{S_t^2}{n_t} + \frac{b^2 S_c^2}{n_c} \right)^2}{\frac{\left(\frac{S_t^2}{n_t} \right)^2}{n_t - 1} + \frac{\left(\frac{b^2 S_c^2}{n_c} \right)^2}{n_c - 1}}$$

Using Welch's t-test, the degrees of freedom is the value obtained for ν in the equation above. When ν is a non-integer, round ν to the next smallest integer, and that number is used as the degrees of freedom.

2.8. Step 6

Using the degrees of freedom value from Step 5, determine the critical t value using the test method-specific alpha values shown in Table D1.

Compare the calculated t value from Step 4 to the critical t value.

Table D1—Toxicity Test Method, Regulatory Management Decision, β Error, and α Error (table has been excerpted from Table 1 of the Toxicity Provisions)

USEPA Toxicity Freshwater Test Method	Type	Tier	RMD	β Error	α Error
<i>Pimephales promelas</i> (fathead minnow) Survival and Growth	Chronic	I	0.75	0.05	0.25

Table D2—Critical Values for the t-Distribution with One tailed Probability Assumed

Degrees of Freedom (ν)	α Error = 0.25
1	1
2	0.8165
3	0.7649
4	0.7407
5	0.7267
6	0.7176
7	0.7111

Degrees of Freedom (ν)	α Error = 0.25
8	0.7064
9	0.7027
10	0.6998
11	0.6974
12	0.6955
13	0.6938
14	0.6924
15	0.6912
16	0.6901
17	0.6892
18	0.6884
19	0.6876
20	0.687
21	0.6864
22	0.6858
23	0.6853
24	0.6849
25	0.6844
26	0.684
27	0.6837
28	0.6834
29	0.683
30	0.6828
inf	0.6745

2.9. Step 7

If the calculated t value is less than the critical t value, the Null Hypothesis is not rejected, and the test result is “fail.” If the calculated t value is greater than the critical t value, the Null Hypothesis is rejected, and the test result is “pass.”

3. Percent Effect

The Percent Effect at the IWC must be calculated for each Endpoint in an aquatic toxicity test. Calculate the Percent Effect at the IWC using untransformed data and the following equation:

$$\text{Percent Effect at the IWC} = \frac{\text{Mean Control Response} - \text{Mean IWC Response}}{\text{Mean Control Response}} \cdot 100$$

3.1. Cataloguing Results

Results obtained from toxicity tests must be catalogued as either a “pass” or a “fail,” and the Percent Effect at the IWC for each endpoint must be noted. The results and any required supporting data must be catalogued in self-monitoring reports.