CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

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ORDER NO. R4-2025-0273

WASTE DISCHARGE REQUIREMENTS AND WATER RECLAMATION REQUIREMENTS FOR THE LEO J. VANDER LANS ADVANCED WATER TREATMENT FACILITY AND INLAND INJECTION FACILITIES AND ALAMITOS BARRIER RECYCLED WATER PROJECT

ISSUED TO
THE WATER REPLENISHMENT DISTRICT OF SOUTHERN CALIFORNIA AND LOS ANGELES COUNTY DEPARTMENT OF PUBLIC WORKS

The following Permittees are subject to Waste Discharge Requirements (WDRs) and Water Reclamation Requirements (WRRs) set forth in this Order:

TABLE 1. PERMITTEE INFORMATION

Permittees	Water Replenishment District of Southern California (WRD) and Los Angeles County Department of Public Works (LACDPW)
Name of Facility	Leo J. Vander Lans Advanced Water Treatment Facility (AWTF or Facility)
Facility Address	7380 East Willow Street Long Beach, CA 90815

TABLE 2. ADMINISTRATIVE INFORMATION

This Order was adopted on:	December 18, 2025
This Order is effective on:	January 1, 2026

I, Susana Arredondo, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Los Angeles Region (Los Angeles Water Board), on the date indicated above.

Jenny Newman Digitally signed by Jenny Newman
Date: 2025.12.22 16:04:24 -08'00'
Water Boards

for Susana Arredondo, Executive Officer

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ATTACHMENTS

The California Regional Water Quality Control Board, Los Angeles Region (Los Angeles Water Board) finds the following:

1. BACKGROUND INFORMATION

1.1. The Los Angeles County Department of Public Works (LACDPW) was formed in January 1985, consolidating the former Los Angeles County Road Department, the County Engineer Department and the County Flood Control District (LACFCD). It is responsible for the design, construction, operation, maintenance, and repair of roads, bridges, airports, sewers, water supply, flood control, water quality, and water conservation facilities and for the design and construction of capital projects. Additional responsibilities include regulatory and ministerial programs for the County of Los Angeles, LACFCD, other special districts, and contract cities that request services. The LACDPW operates and maintains the Alamitos Gap Seawater Intrusion Barrier (Barrier), including the existing water transmission pipeline, distribution header, injection wells, extraction wells and monitoring wells along the Alamitos Barrier Project. The location of the Barrier is included in Attachment B.

1.2. The Water Replenishment District (WRD or District) serves as the watermaster for managing the adjudication of the Central and West Coast Groundwater Basins. The WRD was established in 1959 under Division 18 of the California Water Code and has the statutory authority to replenish the groundwater basin and address water quality issues. WRD owns and manages the Leo J. Vander Lans Advanced Water Treatment Facility (AWTF or Facility) and is the purveyor of recycled water produced by the Facility that is injected into the Barrier. The AWTF is located at 7380 East Willow Street, in the City of Long Beach, adjacent to the Long Beach WRP and between the San Gabriel River and Coyote Creek. Attachment C1 shows the location of the Facility. WRD serves as the lead agency under the California Environmental Quality Act (CEQA) and is authorized to purchase imported water that is used for injection into the Los Angeles County side of the Barrier. As of July 1, 2020, PERC Corporation is the contract operator of the AWTF and provides water quality compliance sampling and reporting for WRD. Collectively, WRD and LACDPW are herein referred to as the Permittees.

1.3. Prior to the construction of the Barrier, decades of over-pumping caused the water levels in the Central Groundwater Basin and Orange County Groundwater Basin to drop, resulting in a loss of groundwater from storage and seawater intrusion into the potable aquifers, rendering portions of the basins unsuitable for their beneficial uses. The Barrier began operations in 1965 and is designed to protect the Central Groundwater Basin and portions of the Orange County Groundwater Basin from seawater intrusion through the creation of a pressure ridge by injection of fresh water into the Barrier through an alignment of 61 injection wells as of October 2025. These wells are located approximately two miles inland from the mouth of the San Gabriel River at the Los Angeles/Orange County boundary. The pressure ridge created by the Barrier prevents seawater from passing the Barrier and entering further into the groundwater basins. The injected water flows inland, providing needed replenishment water to the

groundwater basins. The failure to maintain an effective seawater intrusion barrier would cause serious water quality degradation in drinking water aquifers in southeastern Los Angeles County and southwestern Orange County, and the potential loss of this water resource. The Barrier was sustained using only potable water prior to 2005.

1.4. Since October 2005, the AWTF has produced up to 3 million gallons per day (mgd) of high quality advanced-treated recycled water, which is further blended with imported water from the Metropolitan Water District of Southern California (MWD) and subsequently delivered and injected into the Barrier pursuant to Los Angeles Water Board Order No. R4-2005-0061. The AWTF underwent an expansion in 2014 to increase the plant's production capacity from 3 to 8 mgd (8,960 acre-feet of recycled water per year [AFY]), including upgrades to the existing microfiltration, reverse osmosis, and ultraviolet (UV) treatment process with hydrogen peroxide, including two additional trains. The Facility's increased volume of recycled water injected into the Barrier was permitted under Los Angeles Water Board Order No. R4-2014-0111 (2014 Order).

1.5. The overall recovery for the AWTF, including backwash waste recovery and three stage RO, is approximately 92 percent. The AWTF is operated under an approved Operation and Optimization Plan (OOP), which is regularly updated by WRD and approved by the State Water Resources Control Board, Division of Drinking Water (DDW or Division). The AWTF is permitted for 100 percent recycled water contribution to the Barrier.

1.6. Non-Permittee Agencies

1.6.1. The Los Angeles County Sanitation Districts (LACSD) own and operate the Long Beach Water Reclamation Plant (Long Beach WRP), which produces disinfected tertiary recycled water that is the source water for advanced treatment at the AWTF. To meet the needs for additional source water at the Facility, disinfected tertiary recycled water from the Los Coyotes Water Reclamation Plant (Los Coyotes WRP), also owned and operated by the LACSD, may be used to supplement the existing supply from the Long Beach WRP.

1.6.2. The City of Long Beach, through its Utilities Department (formally known as Long Beach Water Department), owns the rights to the recycled water produced at the Long Beach WRP and Los Coyotes WRP. Prior to July 1, 2020, the City operated the AWTF. Long Beach Utilities Department provides imported water purchased by WRD for the Alamitos Barrier Project, as necessary via the LB7A connection.

1.6.3. The LACFCD and the Orange County Water District (OCWD) jointly constructed and co-own the Barrier and injection wells through an agreement dated July 7, 1964 and subsequent amendments. The agreement also formed a Joint Management Committee, which is comprised of representatives from WRD, OCWD, LACDPW, Long Beach Utilities Department, and the Golden State Water Company. In 1985, the LACFCD's planning and operational responsibilities were transferred to the LACDPW. The LACDPW maintains the Barrier and its

associated facilities under the direction and approval of the Joint Management Committee.

1.6.4. The OCWD is a special district formed in 1933 to manage the groundwater basin beneath central and northern Orange County. The groundwater basin provides a water supply to 19 municipal water agencies and special districts that serve 2.5 million Orange County residents. The OCWD shares the cost of purchasing advanced treated recycled water and/or imported water for injection into the Barrier.

1.6.5. The OCWD, LACSD, Golden State Water Company and City of Long Beach are not designated as Permittees with respect to this Order.

2. FACILITY DESCRIPTION

2.1. Description of Tertiary Treatment at Long Beach and Los Coyotes WRPs

The primary source water for the AWTF is disinfected tertiary recycled water from the Long Beach WRP, which is located at 7400 East Willow Street in the City of Long Beach and occupies 17 acres of land west of the San Gabriel River (I-605) Freeway. The production of tertiary recycled water at the Long Beach WRP is regulated by WRR Order No. 87-047 as amended by Order No. 97-072 and WDR Order No. R4-2022-0032. The design capacity of the Long Beach WRP is 25 mgd. In the future, disinfected tertiary recycled water may also be supplied to the AWTF by the Los Coyotes WRP, which is located at 16515 Piuma Avenue in the City of Cerritos and regulated separately under WRR Order No. 65-182 as amended by 97-047 and WDR Order No. R4-2021-0142. The design capacity of the Los Coyotes WRP is 37.5 mgd. Treatment at the Long Beach and Los Coyotes WRPs is very similar, and consists of primary sedimentation, activated sludge biological treatment with nitrification and denitrification, coagulation, secondary sedimentation, inert media filtration, chloramination (reactions between sodium hypochlorite and ammonia) for disinfection and dechlorination. WDRs Order Nos. R4-2022-0032 and R4-2021-0142 serve as National Pollutant Discharge Elimination System Permits (CA0054119 and CA0054011, respectively).

2.2. Advanced Water Treatment Facility Treatment and Technology

The treatment approach and technology used at the AWTF to produce advanced treated recycled water is depicted in Attachment C2 and consists of the following:

2.3. Influent Equalization (EQ) and Pump Station

The existing influent EQ basin was constructed during the expansion of the Facility in 2014. The influent EQ basin is concrete-lined and functions to equalize a design capacity of 8.70 mgd of flow to feed the Primary Microfiltration (MF) system if tertiary flow from the Los Coyotes WRP is used. Pumping is not required when disinfected tertiary effluent from the Long Beach WRP is used as influent to the AWTF since the effluent from Long Beach WRP effluent has 60 to 100 pounds per square inch (psi) of pressure. In the future, if the AWTF is

modified to receive tertiary effluent from the Los Coyotes WRP, the influent EQ basin will need to be equipped with pumps and piping modifications.

2.4. Microfiltration (MF)

The microfiltration system serves as a pretreatment for the reverse osmosis system, aiming to mitigate particulate and biological fouling on the RO membranes. This system efficiently eliminates inert particulates, organic particulates, colloidal particulates, pathogenic organisms, bacteria, and other particles through the size-exclusion sieve action of its membranes. The microfiltration system configuration includes pretreatment, automatic strainers, Primary MF, dissolved air flotation (DAF), and a Backwash Treatment System.

2.4.1. MF Pretreatment Chemical Addition

Tertiary recycled water from the Long Beach WRP contains varying chlorine residual concentrations to comply with regulatory contact time (CT) disinfection requirements. Depending on the chlorine residual levels in the tertiary recycled water, the AWTF may employ chloramination (utilizing sodium hypochlorite, aqueous ammonia, or liquid ammonium sulfate [LAS]) as necessary to manage biological fouling in the microfiltration and reverse osmosis membranes. While higher chlorine residuals are advantageous for controlling membrane biological fouling, they can adversely affect the UV/AOP process performance by diminishing the percent UV Transmittance (UVT). This may require additional power demand for achieving the required UV dose or result in a facility shutdown if the low UVT threshold is reached. Hence, pretreatment also involves chemical quenching (using sodium bisulfite) as needed during periods of elevated influent chlorine residual.

2.4.2. Primary MF Automatic Strainers

Following MF pretreatment, the flows will be fed into three (two duty and one standby) automatic self-cleaning 500-micron strainers to protect the downstream microfiltration membranes from damage and/or fouling from large particles. The backwash waste generated by the primary MF automatic strainers can be directed either to the backwash waste (BWW) equalization basin or the Facility waste EQ basin. If the strainer BWW is directed to the BWW EQ basin, it undergoes mixing with the Primary MF BWW and subsequently undergoes treatment with DAF and backwash treatment. In the event of its discharge to the plant waste EQ basin, it is released directly into the sewer without undergoing additional treatment.

2.4.3. Primary MF System

From the strainers, the flow will be fed into six 100-module MF skids. The Primary MF system consists of pressurized microfiltration units with hollow fiber, polyvinylidene fluoride membranes containing a nominal pore size of 0.1 micron. The Primary MF system is designed to achieve 94% minimum filtrate recovery and produce on average 8.1 mgd of filtrate. The MF filtrate will be stored in a break tank and the microfiltration units will be periodically backwashed to clean the membranes.

2.4.4. Backwash Treatment (BWT)

The BWW flows from the Primary MF automatic strainers and Primary MF system will be equalized in the BWW EQ Basin and can be pumped to the DAF system for treatment if necessary. Backwash initiation for the microfiltration system is contingent on both influent water quality and trans-membrane pressure. Ferric chloride is utilized as a coagulant and is injected upstream of the DAF system, if required. Following treatment, if required, DAF effluent flow is equalized in the DAF Effluent EQ Basin and then pumped to the BWTMF system, which consists of four 25-module microfiltration skids. Similar to the Primary MF system, the BWT MF automatic strainer is provided upstream of the BWT MF membranes to protect the membranes from damage and/or fouling from large particles. One automatic strainer serves as a duty unit, and another manual basket strainer is provided as a standby unit. The Primary MF effluent and the BWT MF effluent will be mixed and discharged into one 37,600-gallon capacity MF Filtrate Tank. The Primary MF system adjusts its flux within an acceptable range to uphold a consistent water level in the MF Filtrate Tank. Simultaneously, the BWT MF system is operated to generate a steady filtrate flow continuously, utilizing a cyclical operation with four skids to ensure that two BWT MF skids are in filtration mode at all times.

2.5. Reverse Osmosis

Following microfiltration, the filtrate will flow to the reverse osmosis system, which removes dissolved inorganic and organic components in the MF filtrate.

2.5.1. Reverse Osmosis Pretreatment Chemical Addition

To control scaling and protect the reverse osmosis membranes, the MF filtrate undergoes pretreatment prior to reverse osmosis, which involves utilizing sulfuric acid for pH control, threshold inhibitor to control scaling, and cartridge filters to remove particulates. Pretreatment is applied upstream of the two primary RO trains and directly preceding the third stage RO process.

2.5.2. Cartridge Filtration

The cartridge filters are provided upstream of the RO membranes to protect the membranes from damage and/or fouling from particulates that may be introduced in the MF filtrate tank or as part of chemical feed. There are two cartridge filter vessels operating in parallel. Each cartridge vessel contains 176 polypropylene filters with a nominal pore size of 20 microns. During cartridge filter replacement, the RO feed water may be bypassed for a short duration.

2.5.3. 1st, 2nd and 3rd Stage RO System

Following pretreatment process, the flows will be pumped to the reverse osmosis system, which consists of two primary RO trains (first and second stage RO Trains) in parallel and three (two duty and one standby) third stage RO Trains. The reverse osmosis process will produce approximately 8.0 mgd and includes a high-pressure feed pump and pressure vessels. Each pressure vessel contains high rejection thin film composite polyamide membrane elements. The

1st and 2nd stage RO system and 3rd stage RO system are designed to achieve a minimum of 85 percent and 52 percent recovery rate, respectively. Permeate from the reverse osmosis system will be sent to the advanced oxidation process. Concentrated brine (RO concentrate) from the reverse osmosis system will be discharged directly to the Los Angeles County Sanitation Districts' A.K. Warren Water Resource Facility in Carson, regulated under National Pollutant Discharge Elimination System (NPDES) Order R4-2023-0181 (CA0053813). During the reverse osmosis process, the system consistently monitors the electrical conductivity and total organic carbon (TOC) at both the RO feed and permeate, and initiates removal from service when necessary. Weekly profiles of RO conductivity are conducted, supplemented by vessel probing as needed. Monthly RO normalizations are calculated to evaluate membrane performance.

2.6. Ultraviolet/Advanced Oxidation Process (UV/AOP)

The UV/AOP at the AWTF consists of ultraviolet irradiation (UV) with hydrogen peroxide addition upstream of the UV trains. The UV/AOP is used to disinfect RO permeate and destroy some constituents of emerging concern (CECs) that may pass through RO membranes due to their low molecular weight and low ionic charge, notably N-Nitrosodimethylamine (NDMA), flame retardants and 1,4-dioxane. The UV system exceeds the requirements delineated in the *Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse* (August 2012) published by the National Water Research Institute (NWRI). The UV system consists of one train of nine (seven duty and two standby) 30AL50 Trojan UVPhox™ reactors that employ low-pressure, high-output technology, and two trains of three stacked D72AL75 Trojan UVPhox™ reactor chambers. For the D72AL75 Trojan vessel, the third reactor chamber in each train is redundant and includes only one (1) 72-lamp reactor zone. There are two reactor chambers in each UV vessel. The third vessel only utilizes one of the reactors. No waste will be generated. The total nominal capacity of the UV system is 8.0 mgd. At this flow rate and minimum UV transmittance of 95 percent, the delivered UV dosage from the proposed system is estimated to exceed 300 millijoule per square centimeter (mJ/cm^2). The UV/AOP system is designed and operated to meet the minimum 0.5-log reduction of 1,4-dioxane.

2.7. Decarbonation

Following UV/AOP treatment, a portion of the water will pass through a decarbonator to reduce carbon dioxide, increase pH, and stabilize the product water.

2.8. Post-Treatment Systems (pH Adjustment/Corrosivity Stabilization/ Disinfection)

Caustic soda (sodium hydroxide) will be added to the product water to increase pH, and calcium chloride or calcium hydroxide will be added to maintain a satisfactory Langelier Saturation Index to reduce the potential for minerals to be leached from the cement lining used in the transmission pipeline. In order to maintain a certain threshold of total chlorine residuals required by the LACDPW to prevent bio-fouling and clogging of the injection wells, sodium hypochlorite and

aqueous ammonia will be added to the product water to maintain the required level of total chorine residuals. The levels of sodium hypochlorite and aqueous ammonia to be added will be fine-tuned to effectively manage potential formation of disinfection byproducts.

2.9. Bypass

The Facility can discharge partially-treated water to a trunk sewer leading to the Los Angeles County Sanitation Districts' A.K. Warren Water Resource Facility.

2.10. Alamitos Barrier Recycled Water Transmission and Injection Well System

The advanced treated recycled water is pumped westward to the Blend Station where it mixes with imported potable water (as needed to meet the barrier demand) before being conveyed two miles to the distribution header. The MWD delivery system is protected by an above-ground, backflow prevention system installed in the LACDPW potable water feed line as a method of inline protection. Backflow prevention consists of two identical parallel pipe trains with two check valves in series. A butterfly valve is installed upstream and downstream of the double check valves to isolate the system for maintenance. An air release valve is installed at the highest point in the pipe train. A sampling port is also provided.

The advanced-treated recycled water mixed potable water is delivered approximately two miles to the distribution header. The distribution header pipeline consists of two legs, one extending approximately 4,000 feet to the west, and the other extending approximately 3,800 feet to the southeast. Pipe diameters range from 12 to 18 inches to the west, and from 8 to 14 inches to the southeast. From the header, the advanced treated recycled water is injected into the Barrier.

The alignment of injection wells extends westward along 7th Street from Margo Avenue to the San Gabriel River, where it turns towards the south along the Los Alamitos Channel (see Attachment B). Two types of injection wells were constructed at the Barrier: nested and composite. Nested wells are constructed with a single casing but can inject water into different aquifers separated by grout seals. The composite-type injection wells are comprised of casings similar to the nested casings, except that they are screened in multiple aquifer zones without grout seals between them. The injection wells include 61 wells of which 32 are single injection wells, injecting only into either the A, B or I aquifers; 22 are dual injection wells, injecting separately into the A/I or C/B aquifers; and six wells are composite wells that inject simultaneously into the C/B/A/I aquifers (Attachment C3 and C5). Distances between injection wells vary from approximately 50 feet to 1,200 feet, for a total span of approximately 1.2 miles.

2.10.1. Observation Wells Associated to the Barrier

A total of 242 observations wells are currently operating at the Alamitos Barrier Project. These wells are monitored regularly by the LACDPW for water levels and chloride concentrations to determine the effectiveness of the Seawater Barrier. The observation wells measure, from shallowest to deepest, the Recent (also known as Gaspur), C (also known as Exposition), B (also known as

Artesia), A (also known as Gardena and Gage), and I (also known as Hollydale, Jefferson and Lynwood) aquifers. At each monitoring well location along the barrier alignment, a protective elevation target has been established to prevent seawater intrusion. Adjustments are made to the flow rates of the nearby injection wells based on the findings from observation well monitoring and protective elevation targets to optimize protection against seawater intrusion. The LACDPW performs observation well maintenance as necessary to remove accumulated sediment in the bottom of the well casings. Removing the sediment ensures the full lengths of the well screens are in communication with the aquifers and allows accurate chloride sampling to occur at all designated depths.

2.10.2. Groundwater Monitoring Wells Associated to the Barrier

There are currently eight groundwater monitoring wells (Wells 503BF, 503BE, 502BW, 502BX, 502AK, 502AL, 502AM, and 502AN) associated to the Alamitos Barrier Project that measure the aquifers directly receiving recharge water (C, B, A, and I) and two additional background wells (Well 503P and Well 503M) that measure the aquifers that do not directly receive recharge water (Recent and Main). Wells 503BF, 503BE, 502BX and 502BW are used to monitor the 3-month underground travel time of recharge water while wells 502AK, 502AL, 502AM and 502AN are located approximately one-quarter distance from the Barrier to the Leisure World 006 well (also referred to as SB-LEI; State Well No. 05S12W01A003S), the nearest municipal water supply well. A review of the historical groundwater quality data in the Alamitos Barrier Project area indicates that, overall, the water quality meets both primary and secondary drinking water standards (refer to Section 3.1 for further details).

2.10.3. Municipal Supply Wells Proximate to the Barrier

The closest downgradient municipal supply well to the Barrier Project is well SB-LEI, which is operated by the City of Seal Beach. SB-LEI is located approximately 4,900 feet east of the Barrier injection wells and is completed to extract groundwater from the I, Main, and Lower Main aquifers. Based on the calibrated groundwater flow model, the estimated underground travel time between the Barrier injection wells and SB-LEI is 5.9 years.

The next closest municipal supply water well is the Beverly Manor well (also referred to as SB-BEV; State Well No. 05S12W01A004S), which is also operated by the City of Seal Beach. It is located approximately 5,750 feet east of the Barrier injection wells and completed to extract groundwater from the I and Main aquifers. The estimated underground travel time between the Barrier injection wells and SB-BEV is 6.1 years.

The closest active downgradient municipal supply well to the Barrier Project is the Yellowtail well (also referred to as SCWC-LAYT; State Well No. 04S11W31P001S) which is owned and operated by the Golden State Water Company. Production well SCWC-LAYT is located approximately 5,900 feet downgradient from the Barrier injection wells. SCWC-LAYT extracts water from the A, I, and Main aquifers. The estimated underground travel time between the Barrier injection wells and SCWC-LAYT is 9.4 years.

An added tracer study is currently underway to validate the groundwater model travel times from the Barrier Project.

2.11. LVL Inland Injection Facilities (IWF) Project

At full production capacity, the AWTF produces more advanced-treated water than is required to maintain Barrier operations. The volume of water required by the Barrier also fluctuates due to natural and hydrological conditions. Currently, the production rate of the AWTF must be adjusted to match the demand of the Barrier. To optimize the production and efficiency of the AWTF and increase groundwater replenishment, the Permittees are proposing to expand the Groundwater Recharge Reuse Project (GRRP) to inject excess advanced-treated recycled water that is not required to meet the demand of the Barrier, into the Central Groundwater Basin using the first of multiple planned inland injection wells. The LVL Inland Injection Facilities Project (Inland Injection Project or IWF) is located inland from the Barrier on the Facility site. The injection well (LVL-IW-01) will allow the Permittees to stabilize the total demand for advanced-treated water by adjusting the injection rate of LVL-IW-01 as Barrier demand fluctuates. It will also allow the AWTF to operate at a higher average production rate and increase the amount of groundwater replenishment within the basin. No changes outside of piping the new injection well are proposed to the AWTF. A flow diagram of the Inland Injection Project is included in Attachment C2.

2.11.1. Injection Well (LVL-IW-01)

Injection well LVL-IW-01 is located onsite and within the Facility's property boundary (Attachment C1). LVL-IW-01 is completed to a total depth of 1,125 feet below ground surface (ft bgs) and was perforated and screened in three distinct intervals: 630 and 680 ft bgs (first screened interval, I aquifer), 855 and 1,000 ft bgs (second screened interval, Main aquifer), and 1,030-1,095 (third screened interval, Main aquifer). The target operational injection rate is 1,400 gallons per minute (gpm), equivalent to approximately 2 mgd. Based on the flow profiling performed, it is anticipated that approximately 33% of the advanced-treated water will flow into the I aquifer through the first screened interval and 67% of the advanced-treated water will flow into the Main aquifer (38% will flow into the Main aquifer through the second screened interval and 29% will flow into the lower portion of the Main aquifer through the third screened interval). The flow distribution is dictated by permeability differences between the aquifer units.

Periodic backflush operations will occur in the well for the purpose of maintenance and cleaning to remove any accumulated material within the well. During backflush, the well pump will reverse the direction of the flow in the injection well and will discharge the well fluids to the stormwater collection area. The discharge of backwash fluids into the stormwater collection area is covered under General NPDES Permit for *Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties* (Order R4-2023-0429, NPDES No. CAG994004; CI-10713). Backflush operations are anticipated to occur on a weekly basis for 45

to 90 minutes at a planned extraction rate of 3,000 gpm. The backflush operations will be adjusted to maintain optimal performance of LVL-IW-01.

2.11.2. Groundwater Monitoring Wells Associated to the Inland Injection Project (aka IWF)

The Inland Injection Project contains two groundwater monitoring wells: LVL-MW-01 and LVL-MW-02. Well LVL-MW-01 is located onsite of the Facility property boundary, approximately 410 feet west-northwest and hydraulically downgradient from injection well LVL-IW-01. LVL-MW-01 is a nested well containing three individual well casings that are screened in three distinct intervals: the shallow interval is screened between 635 and 655 ft bgs in the I (Lynwood) aquifer and the intermediate and deep intervals are screened between 950 and 970 ft bgs, and 1,050 and 1,070 ft bgs in the Main (Silverado) aquifer, respectively. The modeled travel time between injection well LVL-IW-01 and LVL-MW-01 is approximately 92 days (3 months) in the I aquifer and 255 days (8.5 months) in the Main Aquifer. In addition to LVL-MW-01, well LVL-MW-02 will also be used to monitor the GRRP performance. LVL-MW-02 is located approximately 1,920 feet northwest of LVL-IW-01 in El Dorado Park. LVL-MW-02 is a nested well containing three individual well casings and are screened between 615 and 635 ft bgs in the shallow interval (I aquifer), between 910 and 930 ft bgs in the intermediate interval (Main aquifer) and between 1,000 and 1,020 ft bgs in the deep interval (Main aquifer). The modeled travel time between injection well LVL-IW-01 and LVL-MW-02 is approximately 5.6 years in the I aquifer and more than 11 years in the Main Aquifer.

2.11.3. Municipal Supply Wells Proximate to the Inland Injection Project

The City of Long Beach owns and operates groundwater supply wells located throughout its jurisdictional area and currently has water rights to pump approximately 33,000-acre feet of groundwater per year. Groundwater within the City of Long Beach is ultimately extracted and treated at the City's Groundwater Treatment Plant to produce potable water. The nearest municipal supply well to the Inland Injection Project is Wise 01-A (also referred to as LB-WS1A; State Well No. 04S12W24M08S), situated approximately 4,050 feet northwest of the GRRP injection well. LB-WS1A is screened across the A (Gage), I (Lynwood), and Main (Silverado) aquifers. According to the groundwater flow model, the simulated hydraulic travel time from injection well LVL-IW-01 to LB-WS1A is at least 11 years for the I and Main aquifers. The simulation also predicts that the injectate will arrive at LVL-MW-02 at least 90 days before reaching LB-WS1A. An intrinsic tracer study will be conducted to validate the groundwater model travel time, which will be conducted once the Inland Injection Project commissioning is complete and recycled water is injected into the groundwater basin. The Permittees will implement steps to provide an alternative source of drinking water supply if DDW determines that the GRRP results in a producing drinking water well violates a California or federal drinking water standard; has been degraded to the degree that is no longer a safe source of drinking water; or

receives water that fails to meet pathogenic microorganism control specified in section 60320.208 of Title 22 of the California Code of Regulations (22 CCR).

3. ADVANCED-TREATED RECYCLED WATER QUALITY

The advanced-treated recycled water produced at the AWTF will meet the requirements in 22 CCR, division 4, chapter 3, article 5.2 (22 CCR Article 5.2) for indirect potable reuse: Groundwater Replenishment – Subsurface Application. In addition, the imported water supplied by MWD is sourced from Northern California through the Sacramento – San Joaquin Delta, via the State Water Project, and from the Colorado River via the Colorado River Aqueduct and meets the diluent water requirements contained in 22 CCR section 60320.214.

3.1. Groundwater Quality Studies

The previous Orders, Nos. R4-2005-0061 and R4-2014-0111, required the collection of groundwater monitoring data and annual assessment of data collected thereafter. Of the 230 constituents measured at 10 groundwater monitoring wells associated to the Barrier (refer to Section 2.4.2), the majority of constituents remained the same level or better quality than a background groundwater quality study reported in 2005 and 2006 (refer to Table 3). Fluctuations in water quality occur in the Recent aquifer and Main aquifer as a result of seawater intrusion since this aquifer unit does not directly receive injectate. The groundwater quality of the C, B, A, and I aquifers, which receive advanced treated recycled water, has improved or remained consistent since injection began (refer to Attachment C5).

TABLE 3. GROUNDWATER QUALITY TRENDS

Constituents	Applicable threshold concentration	2020 (Mean)	2018 (Mean)	2016 (Mean)	2012 (Mean)	2010 (Mean)	Background Study (Mean)
Background Well: Recent Aquifer (Well 503P)							
Arsenic	10 µg/L	7.9	10	8.4	17	16	ND
Selenium	50 µg/L	32	94	70	61	35	ND
Chloride	500 mg/L	6,925	6,500	5,775	7,025	5,475	5,407
TDS	1,000 mg/L	14,250	12,500	11,250	13,500	9925	13,350
Turbidity	5 NTU	74	21	21	26	18	14
Specific Conductance	1,600 µmho/cm	20,000	20,000	17,500	19,500	16,000	15,675
Sulfate	500 mg/L	1,150	1,125	993	1,075	908	813
Manganese	50 µg/L	2,050	1,800	1,400	1,950	1,775	1,775
Color	15 ACU	36	34	26	31	20	18
Boron	1 mg/L	1.2	1.3	1.1	1.1	0.95	0.99
3-month Travel Time in C Aquifer (Well 503BF)							

Constituents	Applicable threshold concentration	2020 (Mean)	2018 (Mean)	2016 (Mean)	2012 (Mean)	2010 (Mean)	Background Study (Mean)
Manganese	50 µg/L	110	120	120	101	97	94
Odor	3 TON	1.7	2.5	2.0	11	3	4
3-month Travel Time in B Aquifer (Well 503BE)							
Manganese	50 µg/L	51	62	55	62	61	68
Odor	3 TON	1.8	4	2	3	1	4
Total Coliform	1.1 MPN/100mL	ND	ND	ND	ND	ND	ND
3-month Travel Time in A Aquifer (Well 502BX)							
Manganese	50 µg/L	55	124	77	41	54	37.2
Chloride	500 mg/L	71	359	95	58	68	64.1
Iron	0.3 mg/L	0.10	0.235	0.17	0.08	0.103	0.042
Specific Conductance	1,600 µmho/cm	645	1,665	975	553	765	495
TDS	1,000 mg/L	388	993	598	320	430	325
NDMA	10 ng/L	6.6	4.5	3.4	4.2	4.1	7.6
3-month Travel Time in I Aquifer (Well 502BW)							
Manganese	50 µg/L	30	25.25	49	24	40	23.1
Odor	3 TON	3.3	2.0	3	14	3	2.0
NDMA	10 ng/L	4.9	6.6	4.4	10	3.3	5.6
1/4-Distance Travel Time in C Aquifer (Well 502AK)							
Manganese	50 µg/L	104	93	98	101	98	95
Odor	3 TON	2	2.3	1.5	3	3	7
1/4-Distance Travel Time in B Aquifer (Well 502AL)							
Manganese	50 µg/L	84	88	75	63	63	77
Odor	3 TON	1.8	2.5	1.8	3	3	6
Vinyl Chloride	0.5 µg/L	0.37	0.35	0.46	0.56	0.39	ND
1/4-Distance Travel Time in A Aquifer (Well 502AM)							
Manganese	50 µg/L	100	101	113	58	92	88
Odor	3 TON	1.5	2.5	2.3	8	3	6
Tritium	20,000 pCi/L	ND	1,220	ND	ND	ND	191
1/4-Distance Travel Time in I Aquifer (Well 502AN)							
Manganese	50 µg/L	40	54	60	41	43.5	32.6
Odor	3 TON	1.3	1.8	2.3	5	2	5
Total Coliform	1.1 MPN/100mL	ND	ND	ND	ND	ND	ND

Footnotes for Table 3

The threshold concentrations for arsenic, selenium, tritium and vinyl chloride are MCLs. The threshold concentrations for color, iron, manganese, odor, TDS, specific conductance, turbidity, chloride and sulfate are secondary drinking water standards (22 CCR section 64449). The threshold concentration for NDMA is a notification level. The threshold concentration for total coliform is a water quality objective from the Los Angeles Basin Plan for groundwaters with MUN designation. The annual values shown are mean concentrations reported for select years between 2010 to 2020 and mean concentrations established during the Background Study as reported in 2005 and 2006.

The 3-Month Wells were collected in 2005. The Background wells were collected in 2006. The 1/4-Distance Wells were 2003 and 2005.

mg/L = milligram per liter; µg/L = microgram per liter; ng/L = nanogram per liter; pCi/L = picocurie per liter; MPN = mean probable number; TON = threshold odor unit; µmho/cm = micromho per centimeter (equivalent to microsiemen per centimeter)

End of Footnotes for Table 3

3.2 Metal Mobilization

Blending native groundwater with injected advanced treated recycled water can cause geochemical reactions, including dissolution and mobilization of naturally occurring metals like arsenic found in the aquifer sediments. Generally, the combination of native groundwater and advanced treated recycled water results in an improvement in groundwater quality with respect to arsenic. Periodic sampling of arsenic levels in downgradient groundwater monitoring wells have been conducted on a quarterly basis since 2010. Summary statistics of the arsenic data suggest that background arsenic concentrations are typically less than 5 µg/L (MUN water quality objective of 10 µg/L) near the Alamitos Barrier. Furthermore, arsenic levels in groundwater samples have consistently remained below 3.5 µg/L since 2015. Of the remaining eight monitoring wells (excluding 503M [Background Main aquifer] and 503P [Background Recent aquifer]), five wells have had less than four samples above detection limits. A trend analysis using the Mann-Kendall test was used for datasets on the remaining three wells (502BX [3-month A aquifer], 503BE [3-month B aquifer], and 503BF [3-month C aquifer]) and the result suggest that the arsenic concentrations have either decreased over time or show no trend.

4. GROUNDWATER BASIN

The Alamitos Barrier Project lies within the Coastal Plain of Los Angeles Central Groundwater Basin (Central Basin [DWR Basin No. 4-011.04]) and the Coastal Plain of Orange County Groundwater Basin (Orange County Basin [DWR Basin No. 8-001]), which are geologically one structural basin separated by the county line (Attachment C4). The basins are an important source of local groundwater to the overlying residents and businesses and help meet approximately 40 percent and up to 77 percent of the water demands for the region. The western portion of the Barrier (approximately 37 percent of the barrier length) is located in the Central Basin, the

middle portion (approximately 46 percent) is located within the County line, and the eastern portion (approximately 17 percent) is located in the Orange County Basin. Water that is injected into the Barrier creates a hydraulic mound, and a portion of this water flows inland either into the Central Basin or into the Orange County Basin depending on the groundwater flow gradients.

4.1. The Central Basin

The Central Basin is one of four groundwater subbasins within the Coastal Plain of Los Angeles County and encompasses a surface area of approximately 270 square miles. The Central Basin is bounded by the Hollywood Basin and the Elysian, Repetto, Merced, and Puente hills to the north, by the Los Angeles County/Orange County line to the east, and by the Newport-Inglewood Uplift to the south and west. The allowed pumping allocation was set at 217,367 acre-feet per year (AFY) and the 2022 Engineering Report states that pumping in water year 2020/21 was 181,637 AFY.

The Central Basin is comprised of four distinct areas; the Los Angeles Forebay, the Montebello Forebay, the Whittier Area, and the Pressure Area. The two forebays, located at the northern portion of the basin, represent areas of unconfined aquifers that allow percolation of surface water down into the deeper production aquifers to replenish the rest of the Central Basin. The Whittier Area, located at the northeastern portion of the basin, is a continuation of the Montebello Forebay. The Pressure Area is a confined aquifer systems that receives relatively minimal recharge from surface water but is replenished from the upgradient forebay areas or other adjacent groundwater basins. The AWTF, Alamitos Barrier Project and Inland Injection Project are located at the southern end of the Central Basin in the Pressure Area.

4.2. The Orange County Basin

The Orange County Basin is bounded by the Coyote and Chino Hills to the north, by the Santa Ana Mountains to the northeast, by the San Joaquin Hills to the east and southeast, by the Pacific Ocean and the Newport-Inglewood Uplift to the south, and by the Central Basin/County Line to the west. The Orange County Basin has been managed by the OCWD since 1933 pursuant to a special act of the State Legislature (Stats.1933, c. 924, p. 2400, West's Annotated California Codes, Water Code – Appendix (2010 ed.) Chapter 40, as amended and Deering's California Codes Annotated Water – Uncodified Acts, Act 5683). Groundwater extraction from the basin has averaged approximately 290,300 AFY for the last 20 years.

The Orange County Basin is a deep structural alluvial and marine basin containing a thick accumulation of interbedded gravel, sand, silt and clay. In the northern portions of the Orange County Basin, referred to as the Forebay area, many of these aquifers are merged and unconfined and allow for direct recharge into the deeper aquifers. In the area referred to as the Pressure Area, these aquifers are less hydraulically connected and create confined aquifer conditions.

4.3. Hydrogeology of the Central Basin and Orange County Basin

The aquifers proximate to the Alamitos Barrier and Inland Injection Project area are listed in Table 4. These aquifers have had various names assigned to them in the past based on previous, separate work in the Central Basin and the Orange County Basin.

TABLE 4. AQUIFER SYSTEMS

<table>
<tr><th>Age</th><th>Formation Name</th><th>Montgomery Watson (1996)</th><th>DWR(1961) Bulletin 104</th><th>DWR (1968)</th><th>OCWD Designations</th><th>Designations Used for Engineering Report</th></tr>
<tr><th colspan="4">Central Basin</th><th colspan="2">Orange County Basin</th><th></th></tr>
<tr><td>Holocene</td><td>Recent</td><td>Recent</td><td>Gaspur</td><td>Bolsa (Recent)</td><td>Recent</td><td>Recent</td></tr>
<tr><td rowspan="4">Upper Pleistocene</td><td rowspan="4">Lakewood</td><td rowspan="3">Undifferentiated</td><td>Exposition</td><td rowspan="2">Alpha (C and B)</td><td>Upper Alpha</td><td>C</td></tr>
<tr><td>Artesia</td><td>Lower Alpha</td><td>B</td></tr>
<tr><td>Gardena</td><td>Beta (upper A)</td><td>Beta (upper A)</td><td rowspan="2">A</td></tr>
<tr><td>B and C</td><td>Gage</td><td>Lambda (lower A)</td><td>Lambda (lower A)</td></tr>
<tr><td rowspan="5">Lower Pleistocene</td><td rowspan="5">San Pedro</td><td rowspan="2">A</td><td>Hollydale</td><td rowspan="3">Meadowlark (I)</td><td>Omicron (upper I)</td><td rowspan="3">I</td></tr>
<tr><td rowspan="2">Jefferson</td><td rowspan="2">Upper Rho (lower I)</td></tr>
<tr><td rowspan="2">I</td><td>Lynwood</td></tr>
<tr><td>Main</td><td>Silverado</td><td>Main</td><td>Main</td><td>Main</td></tr>
<tr><td>Lower San Pedro</td><td>Sunnyside</td><td>Lower Zone</td><td>Lower Main</td><td>Lower Main</td></tr>
</table>

The Holocene-aged Recent (also known as Gaspur) aquifer is a fluvial aquifer consisting of a sand and gravel water-bearing unit at the base of the recent deposits. The Recent aquifer is extensive and can usually be identified by its distinct physical characteristics rather than its stratigraphic position. The Recent aquifer has not been significantly uplifted by the Newport-Inglewood uplift nor offset by its associated faults. Given the relatively flat nature of the Recent aquifer and its direct hydraulic connectivity with the ocean, it serves as the primary conduit for seawater intrusion into deeper aquifers through convergence zones located seaward of the Alamitos Barrier. However, in certain areas, the Recent aquifer is separated from deeper aquifers by an aquitard layer landward of the Alamitos Barrier. This is illustrated in Attachment C5.

The C (also known as Exposition) aquifer is the uppermost water-bearing unit within the Upper Pleistocene-aged Lakewood Formation. Composed mainly of silty, medium to coarse sand exhibiting moderate hydraulic conductivity, it converges with the overlying Recent aquifer within the vicinity of Alamitos Gap. The C aquifer is generally separated from the underlying B (also known as Artesia) aquifer by an aquitard.

The B aquifer is the middle water-bearing unit of the Upper Pleistocene-aged Lakewood Formation and is variable in texture and characterized by generally medium to coarse sand with silt, with occasional lenses of coarse sand and gravel. The B aquifer is generally separated from the underlying A (also known as the Gardena and Gage) aquifer by an aquitard.

The A aquifer is the lowermost water-bearing unit of the Upper Pleistocene-aged Lakewood Formation and is considered the coarsest and thickest of the four units in the Upper Pleistocene series (C, B, A, and I) the Alamitos Gap area. The A aquifer is eroded away in the area near the Alamitos Gap but is mostly encountered throughout the Central Basin. The A aquifer is generally separated from the underlying I aquifer by an aquitard.

The I aquifer is the uppermost water-bearing unit within the Lower Pleistocene-aged San Pedro Formation, and is characterized by its clean, coarse sand composition. It ranks second only to the A aquifer in its groundwater transmission capabilities. This aquifer is distinguished from the underlying Main aquifer by the presence of a continuous aquitard layer.

The Main aquifer is a significant water-supply aquifer in the vicinity of the Alamitos Gap. The Main aquifer typically is comprised of fine sands, gravels, and marine shells in its upper portion, and somewhat finer sand and sandy clay near its base.

The Lower Main (also known as Sunnyside) aquifer is characterized as an alternating fine-grained and coarse-grained unit. Typically, the coarsest section of this aquifer is situated at its base, directly overlying the Pico Unit, which denotes the base of the groundwater system in the vicinity of the Alamitos Barrier and Inland Injection Project.

5. PURPOSE OF ORDER

5.1. On August 31, 2023, the Permittees submitted a Report of Waste Discharge (ROWD) to the Los Angeles Water Board for the Inland Injection Project of the GRRP. On October 20, 2023, the Los Angeles Water Board requested the Permittees to provide additional information to complete the application. The Permittees provided additional information on January 26, 2024. The Los Angeles Water Board deemed the ROWD complete on March 27, 2024.

5.2. Order No. R4-2014-0111, adopted by the Los Angeles Water Board on June 12, 2014 and became effective on October 1, 2014, authorized the Permittees to produce, deliver and inject advanced treated recycled water from the AWTF to support the Alamitos Barrier. AWTF operation during the 2014 Order was based on demand from the Alamitos Barrier injection wells. Under

this Order, when the AWTF produces advanced treated recycled water greater than the Barrier demand, the Permittees are authorized to use the excess advanced treated recycled water to inject into the Central Basin via injection well LVL-IW-01.

5.3. This Order was developed to establish requirements for the Inland Injection Project GRRP operations and to update the requirements for the treatment process of the AWTF and its application to the Alamitos Barrier project.

5.4. On November 4, 2022, the Permittees submitted a Title 22 Engineering Report for the Alamitos Barrier and Inland Injection Project to the Los Angeles Water Board and DDW. The Engineering Report described the Inland Injection Project and how the proposed injection of the AWTF's advanced treated recycled water into the Central Basin would comply with 22 CCR Article 5.2 regarding water quality and groundwater recharge using recycled water. The Engineering Report also described how the Facility and Barrier operations are in compliance with 22 CCR Article 5.2. The Permittees submitted revisions to the Engineering Report in December 2023 and January 2024. A final Engineering Report was submitted in September 2025. DDW issued a conditional acceptance letter of the final Engineering Report on October 13, 2025, including recommendations to the Los Angeles Water Board to consider when developing the permit. DDW's recommendations are incorporated into this Order.

5.5. This Order includes findings and requirements necessary to ensure the advanced-treated recycled water produced by the AWTF complies with the applicable policies. The WRD is responsible for producing recycled water that is at least equivalent to full advanced treatment in accordance with 22 CCR Article 5.2. The WRD and LACDPW are jointly responsible for inspecting point-of-use facilities and ensuring end-users' compliance with the requirements contained in this Order.

5.6. This Order permits the groundwater recharge operations that will take place in the Central Basin and Orange County Basin. The recycled water use areas, as well as the groundwater injection locations, are located above the Central Basin in the Los Angeles Coastal Plain and Orange County Basin in the Orange County Coastal Plain. The WRD has submitted a revised Report of Waste Discharge containing an antidegradation assessment, as described in section 8.3, and waste discharge requirements in Order No. R4-2014-0111 are being amended to include requirements for the Inland Injection Project of the GRRP.

5.7. The Alamitos Barrier straddles the border between the jurisdictional areas of the Los Angeles Water Board and the California Regional Water Quality Control Board, Santa Ana Region (Santa Ana Water Board). In a February 8, 2004 letter to the Santa Ana Water Board, the Los Angeles Water Board requested to be the lead on permitting of the Barrier Project. This request was granted by the Santa Ana Water Board in a letter dated July 30, 2004. Under the agreement with the Santa Ana Water Board, a draft version of the Order was circulated to the Santa Ana Water Board for its review on June 4, 2024. This Order implements the applicable water quality objectives and other

requirements from the Santa Ana Water Board's Basin Plan that are necessary to protect the Orange County Basin.

6. REGULATION OF RECYCLED WATER

6.1. State authority to oversee recycled water use is shared by the State Water Resources Control Board (State Water Board), including DDW, and the regional water boards. DDW is the agency with the primary responsibility for establishing water recycling criteria under the California Code of Regulations (CCR) title 22 to protect the health of the public while using recycled water. The State Water Board and the regional water boards are responsible for issuing WDRs and WRRs for water that is used or proposed to be used as recycled water.

6.2. On January 6, 1977, the State Water Board adopted Resolution No. 77-1, Policy with Respect to Water Reclamation in California, which includes principles that encourage and recommend funding for water recycling and its use in water-short areas of the state. On September 26, 1988 the Los Angeles Water Board also adopted Resolution No. 88-012, which encourages the beneficial use of recycled wastewater and supports water recycling projects.

6.3. The State Water Board adopted the Water Quality Control Policy for Recycled Water (Recycled Water Policy, State Water Board Resolution No. 2009-0011) on February 3, 2009 and amended the Policy on January 22, 2013 (State Water Board Resolution No. 2013-0003). The Recycled Water Policy was further amended and adopted on December 11, 2018 (State Water Board Resolution No. 2018-0057) by the State Water Board and approved by the Office of Administrative Law (OAL) on April 8, 2019. In part, the purpose of the Recycled Water Policy is to increase the beneficial use of recycled water from municipal wastewater sources in a manner consistent with state and federal water quality laws and regulations and to protect groundwater resources. This Order includes requirements consistent with the Recycled Water Policy.

6.4. In section 4 of the amended Recycled Water Policy (Resolution No. 2018-0057), the State Water Board and the regional water boards are the two primary agencies with jurisdiction over the use and regulation of recycled water. The State Water Board:

- establishes general policies governing the permitting of recycled water projects,
- develops uniform water recycling criteria appropriate to particular uses of water and processes,
- approves wastewater change petitions filed by wastewater dischargers for recycled water projects that have the potential to decrease flow in any portion of a watercourse such as a river or stream,
- adopts statewide orders for the permitting of recycled water projects,

- reviews and approves Title 22 engineering reports for recycled water use, and
- allocates and disperses funding for recycled water projects consistent with its roles of protecting water quality, public health, and sustaining water supplies.

The State Water Board also exercises general oversight of recycled water projects, including review of regional water board permitting practices.

The regional water boards issue permits that include requirements needed to protect water quality, human health, and the environment consistent with the State and Regional Water Quality Control Plans, policies, and applicable law. The regional water boards also exercise their authority to encourage the use of recycled water.

6.5. California Water Code (CWC or Wat. Code) section 13523(a) provides that a regional water board, after consulting with and receiving recommendations from DDW or its delegated local health agency, and after any necessary hearing, shall, if it determines such action to be necessary to protect the health, safety, or welfare of the public, prescribe WRRs for water that is used or proposed to be used as recycled water. CWC section 13523 further provides that, at a minimum, the WRRs shall include, or be in conformance with, the statewide water recycling criteria established by the State Water Board pursuant to CWC section 13521.

6.6. CWC section 13523.5, on WRRs, states that a regional water board may not deny issuance of WRRs to a project that violates only a salinity standard in a Basin Plan. This provision does not apply to WDRs. WDRs for projects that recycle water may contain effluent and other limitations on discharges of salts, as necessary to meet water quality objectives, comply with the Antidegradation Policy or otherwise protect beneficial uses. This is particularly relevant here, where a protected beneficial use is Agricultural Supply, which is sensitive to discharges of salts and boron.

6.7. Pursuant to CWC section 13523, the Los Angeles Water Board has consulted with DDW regarding the proposed recycling project and has incorporated its recommendations into this Order. Final as-built plans and final DDW approvals are required prior to commencing delivery of recycled water for reuse.

6.8. It is the intent of the Recycled Water Policy for salts and nutrients to be addressed regionally rather than imposing requirements solely on individual recycled water projects. Section 6.1.2 of the Recycled Water Policy states, “Salts and nutrients from all sources must be managed on a basin-wide or watershed-wide basis in a manner that ensures attainment of water quality objectives and protection of beneficial uses. The most effective way to address salt and nutrient loading is typically through the development of regional or subregional salt and nutrient management plans rather than imposing requirements solely on individual recycled water projects or other individual sources of salts and nutrients.” Applicable to the Alamitos Barrier are the Salt

and Nutrient Management Plan (SNMP) for the Central Basin and West Coast Basin and the SNMP for the Orange County Basin, which both have been accepted by the Los Angeles and Santa Ana Water Boards.

6.9. A goal of the Recycled Water Policy is to increase the beneficial use of recycled water from municipal wastewater sources in a manner consistent with state and federal water quality laws and regulations. The Recycled Water Policy directs the regional water boards to collaborate with generators of municipal wastewater and interested parties in the development of SNMPs to manage loadings of salts and nutrients to groundwater basins in a manner that is protective of beneficial uses, thereby supporting the sustainable use of local waters. The SNMP for the Central Basin and West Coast Basins provides the projected impacts of salt and nutrient on the basins' water quality to 2025. The SNMP was adopted by the Los Angeles Water Board and incorporated into the Basin Plan through an amendment dated February 12, 2015 (Resolution No. R15-001). The State Water Board and the Office of Administrative Law approved the Basin Plan amendment on July 21, 2015 and April 11, 2016, respectively. In addition to the SNMP, the Permittees have provided an antidegradation assessment of the recycled water, as described in section 8.3.

7. THE BASIN PLAN

7.1. The *Water Quality Control Plan for the Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Los Angeles Basin Plan) and *Water Quality Control Plan for the Santa Ana Basin* (Santa Ana Basin Plan), together Basin Plans, designate beneficial uses for surface and groundwater; establish narrative and numeric water quality objectives that shall be attained or maintained to protect the designated (existing and potential) beneficial uses and conform to the State's antidegradation policy; and include implementation provisions, programs, and policies to protect all waters in the region. In addition, the Basin Plans incorporate or reference all applicable State Water Board and the Los Angeles and Santa Ana Water Boards' plans and policies and other pertinent water quality policies and regulations.

7.2. The receiving groundwater basins are the Central Basin of the Coastal Plain of Los Angeles and the Orange County Basin of the Coastal Plain of Orange County, which have the following beneficial uses designated in the Basin Plans:

TABLE 5. BENEFICIAL USES OF GROUNDWATER

Receiving Water Name	Beneficial Uses
Coastal Plain of Los Angeles (Central Basin; Department of Water Resources (DWR) Basin No. 4-11.04)	Existing Beneficial Uses: Municipal and domestic water supply (MUN); industrial service supply (IND); industrial process supply (PROC); and agricultural supply (AGR).

Receiving Water Name	Beneficial Uses
Coastal Plain of Orange County (Orange County Basin; Department of Water Resources (DWR) Basin No. 8-001)	Existing Beneficial Uses: Municipal and domestic water supply (MUN); industrial service supply (IND); industrial process supply (PROC); and agricultural supply (AGR).

7.3. The limitations contained in this Order are intended to protect these uses and maintain water quality in the subbasins. The limitations implement the Basin Plan water quality objectives for the most sensitive beneficial use, in this case municipal and domestic water supply (MUN). The applicable objectives for chemical constituents are based on primary and secondary drinking water MCLs in the Domestic Water Quality and Monitoring Regulations, 22 CCR, division 4, chapter 15. The MCLs are incorporated by reference into the Basin Plans, and the incorporation is prospective. The water quality objectives further require that groundwater designated as MUN beneficial use shall not contain concentrations of chemical constituents and radionuclides greater than the MCLs. The Basin Plans also specify that groundwaters shall not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

7.4. The Basin Plans water quality objectives for salts in the Central and Orange County Groundwater Basins are:

TABLE 6. GROUNDWATER QUALITY OBJECTIVES FOR SALTS AND NUTRIENTS

Basin	DWR Basin No.	TDS (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Boron (mg/L)	Nitrate-Nitrogen (mg/L)
Coastal Plain of Los Angeles Central Basin	4-11.04	700	250	150	1.0	10
Coastal Plain of Orange County Basin	8-001	700	500	500	1.0	10

8. OTHER APPLICABLE PLANS, POLICIES AND AUTHORITIES

8.1. PORTER-COLOGNE WATER QUALITY CONTROL ACT

8.1.1. CWC section 13263 requires that the regional water boards prescribe requirements as to the nature of any discharge to waters of the State, implementing any relevant water quality control plan and taking into consideration beneficial uses, water quality objectives, and the need to prevent nuisance.

8.1.2. Pursuant to CWC section 13263(g), discharges of waste into water of the state are privileges, not rights. Nothing in this Order creates a vested right to continue the discharge. CWC section 13263 authorizes the regional water boards to issue waste discharge requirements that implement any relevant water quality control plan.

8.1.3. This Order includes limits on quantities, rates, and concentrations of chemical, physical, biological, and other constituents in the advanced treated recycled water produced at the AWTF that are used for injecting into the groundwater aquifers.

8.1.4. CWC section 13267 authorizes the Los Angeles Water Board to require technical and monitoring reports. The attached MRP establishes monitoring and reporting requirements to implement federal and state requirements.

8.1.5. The need for technical and monitoring reports required by this Order, including the MRP, is based on the Report of Waste Discharge (ROWD) and Engineering Report; the recommendations from DDW; the existing Order, R4-2014-0111; and other information in the Los Angeles Water Board's files for the Facility. The technical and monitoring reports are necessary to ensure compliance with this Order. The burden, including costs, of providing the technical reports required by this Order bears a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. Specifically, the required monitoring is needed to confirm that operation of the AWTF meets the parameters of this Order and complies with the Basin Plans, thus protecting human health, including drinking water supplies, and the environment.

8.1.6. Pursuant to CWC section 13320, any aggrieved party may seek review of this Order by filing a petition with the State Water Board in accordance with CCR, title 23, sections 2050-2068. The State Water Board must receive the petition by 5:00 p.m., within 30 days after adoption 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 (http://waterboards.ca.gov/public_notices/petitions/water_quality) may be found on the State Water Boards' website.

8.1.7. The Los Angeles Water Board has notified the Permittees, interested agencies, and persons of its intent to issue this Order for the production and use of recycled water and has provided them with an opportunity to submit written comments. The Los Angeles Water Board, in a public hearing, heard and considered all comments pertaining to this Order. (Wat. Code § 13263.)

8.2 DRINKING WATER NOTIFICATION LEVELS

Pursuant to Health and Safety Code section 116455, DDW has established health-based advisory Notification Levels (NLs) for chemicals in drinking water. When NLs are exceeded, the drinking water system must notify the local governing body of the agency where the system's users reside. NLs are established as precautionary measures for contaminants that may be considered candidates for establishment of MCLs but have not yet undergone or completed the regulatory standard process prescribed for the development of MCLs and are not drinking water standards. NLs are calculated using standard risk assessment methods for non-cancer and cancer endpoints and typical exposure assumptions. A list of these constituents and their current

associated NLs is provided in Table E-11 of the MRP and Attachment G, respectively. A response level is the concentration of a contaminant in drinking water delivered for human consumption at which DDW recommends that additional steps beyond notification be taken to reduce public exposure to the contaminant. Response levels are typically established at 10 to 100 times the NLs. For example, NDMA has an NL of 10 ng/L and a response level of 300 ng/L. This Order requires the Permittees to monitor the AWTF product water for chemicals with established NLs and consistent 22 CCR section 60320.201 (i), which requires GRRPs utilizing advanced-treated recycled water to monitor for contaminants with NLs.

8.3 ANTIDEGRADATION POLICY

8.3.1. On October 28, 1968, the State Water Board adopted Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California (Resolution 68-16), establishing an Antidegradation Policy for the State Water Board and regional water boards. Resolution 68-16 requires the regional water boards, in regulating discharge of waste, to maintain high quality waters of the State until it is demonstrated that any change in quality (1) will be consistent with maximum benefit to the people of the State, (2) will not unreasonably affect beneficial uses, and (3) will not result in water quality less than that prescribed in the regional water board's policies. Resolution 68-16 requires the discharge to be regulated to meet best practicable treatment or control to assure that pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit to the people of the State be maintained. The Los Angeles Water Board's Basin Plan incorporates, by reference, the state antidegradation policy. This Order ensures the recycled water will not unreasonably affect beneficial uses of the Central Basin and Orange County Basin and will not result in water quality less than prescribed in Los Angeles Water Board and Santa Ana Water Board policies because it includes recycled water limitations for salts and nutrients equivalent to or more stringent than the groundwater quality objectives.

8.3.2. Section 8.2.2 of the Recycled Water Policy requires that, "For groundwater recharge projects within a basin with a basin plan amendment based on an accepted salt and nutrient management plan pursuant to section 6.2.3.3 of the Recycled Water Policy, the antidegradation analysis may be based, in part, on the technical findings of the basin plan amendment." The Permittees submitted a ROWD containing a Title 22 Engineering Report with an antidegradation assessment on August 31, 2023. After review, the Los Angeles Water Board requested revisions to the Engineering Report and antidegradation assessment on October 20, 2023. The Permittees submitted a revised Title 22 Engineering Report with a revised antidegradation assessment on January 26, 2024. The final Title 22 Engineering Report was submitted in September 2025, and the antidegradation assessment adequately evaluates the potential impacts of the proposed activities associated with indirect potable reuses of the recycled water in compliance with the Antidegradation Policy.

8.3.3. This Order regulates recycled water discharges to the Central Basin and Orange County Basin. The Central Basin and Orange County Basin contain high quality water, as described in section 8.3.6 below. To the extent use of recycled water for indirect potable reuse may result in discharge to the Central Basin and Orange County Basin, this Order authorizes limited degradation consistent with the Antidegradation Policy as described in the findings below. The analysis is based on the information provided in the antidegradation assessment and in part, on the Central Basin and West Coast Basin SNMP. The SNMP requires ongoing analysis to evaluate inputs into the basin, the salt and nutrient mass balance, and the available assimilative capacity.

8.3.4. This Order requires best practicable treatment and control, which is a combination of advanced treatment, storage, and application methods that implement the requirements of 22 CCR and the Basin Plans. Recycled water is generated by treating domestic wastewater adequately to make the water suitable for direct beneficial use that would not otherwise occur. The required level of treatment in this Order corresponds to the proposed use of recycled water for indirect potable and nonpotable uses. This Order includes requirements regarding the storage, application and monitoring of recycled water to protect water quality and to limit public contact with recycled water, as appropriate. In addition to the level of treatment, this Order requires the Permittees to implement control measures, such as automated alarms and shutdowns at the AWTF, during the production and application of recycled water to the GRRP. These requirements will ensure that pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit to the people of the State be maintained.

8.3.5. The AWTF increases the use of local water supplies by reusing water that would otherwise flow to the ocean via the Long Beach WRP. The application of recycled water to replenish the Central Basin and Orange County Basin increases the local water supply and reduces the City of Long Beach and City of Seal Beach's (collectively Cities') dependence on imported water. In addition, the use of recycled water in place of potable water supplies for the indirect potable uses allowed under this Order improves local water supply availability and climate change resiliency.

8.3.6. As part of the antidegradation assessment, a mixing model was developed for the SNMP for the Central Basin and West Coast Basin by Todd Groundwater, RMC Water and Environment, Nellor Associates and Environmental Science Associates collectively for the stakeholders, which include WRD. This model was specifically tailored to integrate the existing groundwater volume and mass of total dissolved solids (TDS), chloride, and nitrate stored, while also monitoring the annual changes in groundwater storage and salt/nutrient mass for each subarea/layer within the model. Estimates for salt/nutrient loading from key sources (such as spreading ground recharge, seawater intrusion barrier injection, irrigation return flow, mountain front and precipitation recharge, and subsurface inflow) and outputs (including groundwater pumping and subsurface outflows) were determined using

available data and volumetric water budget information from an established groundwater model previously developed by the United States Geological Survey (USGS). These estimates and assumptions were refined to ensure consistent results between simulated and observed groundwater quality patterns within each model subarea/layer over a 10-year baseline period (Water Year [WY] 2000-01 through 2009-10) through a calibration process. The loading assumptions derived from the baseline period assessment were then applied to forecast salt/nutrient balances for the subsequent 15-year planning period (WY 2010-11 through 2024-25).

The groundwater data collected for the Central Basin and West Coast Basin SNMP development indicates that the average concentrations of chloride (67 mg/L), TDS (529 mg/L) and nitrate (0.28 mg/L) in the Central Basin (excluding coastal area) are all below the water quality objectives in the Los Angeles Basin Plan for chloride (150 mg/L), TDS (700 mg/L), nitrate (10 mg/L). The assimilative capacities are 171 mg/L TDS, 83 mg/L chloride and 9.72 mg/L nitrate.

On a site-specific basis, the groundwater data collected from three regional monitoring wells (LB-WRD-5, LB-WRD-4 and LB-WRD-3) indicate the local groundwater contain average concentrations of 745 mg/L TDS, 168 mg/L chloride and <0.25 mg/L nitrate as nitrogen for the I aquifer and 207.5 mg/L TDS, 12 mg/L chloride and <0.2 mg/L nitrate as nitrogen for the Main aquifer.

Data collected from the AWTF advanced-treated recycled water from 2016 and 2020 indicate concentrations of 42 mg/L chloride, 0.45 mg/L sulfate, 141 mg/L TDS, 0.24 mg/L boron, 1.4 mg/L nitrate as nitrogen, 0.016 mg/L nitrite as nitrogen, and 1.4 mg/L nitrate plus nitrite as nitrogen. Based on these concentrations, the advanced-treated recycled water is expected to have lower concentrations of TDS, boron and sulfate but higher concentrations of chloride (42 mg/L vs 12 mg/L) and nitrate as nitrogen(1.4 mg/L vs <0.2 mg/L) than the current groundwater quality. However, in consideration of the Central Basin and West Coast Basin SNMP and the available assimilative capacity in the groundwater basins, the AWTF advanced-treated recycled water will not permanently degrade the water quality of groundwater and will provide the maximum benefit to the people and resources of the state.

8.3.6.1. Since the TDS concentration of the advanced-treated recycled water are below the local and basin-wide average groundwater concentrations, the advanced-treated recycled water will not use any of the available assimilative capacity of the groundwater basins for TDS, and the recycled water is expected to improve the water quality of the I and Main aquifers.

8.3.6.2. The concentrations of chloride and nitrates in the advanced-treated recycled water are expected to be far below their respective water quality objectives for the groundwater basins, but both constituents are slightly over the concentrations currently present in the local groundwater. However, based on the assimilative capacities derived by the Central Basin and West

Coast Basin SNMP, neither chloride nor nitrates are expected to deplete 20 percent of its assimilative capacities because the agency stakeholders are implementing multiple projects that will address any minor addition of these pollutants. This Order requires the advanced-treated recycled water produced at the AWTF to meet all drinking water MCLs and NLs in the California Code of Regulations for the protection of human health and the MUN beneficial use of the groundwater basins. The advanced-treated recycled water is not expected to impact the AGR beneficial uses when injected into the groundwater basins because the advanced-treated recycled water has lower salt concentrations than imported water. Any increase in the chloride and/or nitrate concentrations in the groundwater basins are to the maximum benefit of the people of the state because the advanced-treated recycled water is required to meet the NL for boron and secondary MCL for chloride for the protection of human health and the water will reduce the need for imported water. In addition, any advanced treated recycled water that is extracted from the groundwater basins will be further treated at the City of Long Beach's Groundwater Treatment Plant before being delivered for potable use. The advanced-treated recycled water must also meet the Basin Plans' water quality objective for boron, so injection of the advanced-treated recycled water to the groundwater basin will not result in water quality less than prescribed in the applicable policies.

8.3.6.3. Groundwater data collected at the second closest active municipal supply wells (SB-LAYT) from 2016 and 2020 indicates the TDS, chloride, nitrates, boron and sulfate concentrations averaged 231.7 mg/L, 16.6 mg/L, <0.1 mg/L, <0.1 mg/L, and 37.5 mg/L, respectively. All of these concentrations are below the water quality objectives for the Orange County Basin and suggest that the advanced treated water has not degraded the water quality, and the groundwater remains suitable for MUN beneficial uses in that area.

As required by the Antidegradation Policy, the Los Angeles Water Board finds that the limited degradation of groundwater with respect to chloride and nitrate that may occur as the result of using the advanced-treated recycled water for indirect potable reuse permitted under the conditions of this Order provides maximum benefit to the people of California, provided the recycled water treatment and use are managed to ensure long-term reasonable protection of beneficial uses to waters of the State.

8.3.7. Title 22 of the California Code of Regulations imposes limitations on the uses of recycled water, based on the level of treatment and the specific use to protect public health. By restricting the use of recycled water to those meeting the requirements in 22 CCR, this Order ensures the water will be used safely.

8.3.8. Constituents associated with recycled water that have the potential to degrade groundwater include salinity, nutrients, pathogens (represented by coliform bacteria), disinfection byproducts (DBPs), constituents of emerging concern (CECs), and endocrine disrupting chemicals (EDCs). The Los Angeles

Water Board finds that the use of recycled water permitted under this Order will not unreasonably affect beneficial uses or result in water quality that is less than that is described in the applicable policies. The characteristics and requirements associated with each of the recycled water constituents of concern are discussed below:

8.3.8.1. Human activities and land use practices can influence inorganic constituents in groundwater. Abnormally high levels of inorganic constituents (such as TDS, chloride, sulfate, and boron) can impair and preclude beneficial uses. This Order requires the advanced-treated recycled water from the AWTF to meet the water quality objectives for the Central and Orange County Basins. These final effluent imitations are also within the secondary MCLs “Consumer Acceptance Contaminant Levels” in 22 CCR section 64449 (for TDS, chloride, and sulfate) and below the notification level for boron. The AWTF will remove salts using a reverse osmosis system. Although the water delivered to the Barrier will be a mixture of advanced-treated recycled water from the AWTF and imported water, the main source of water will be the advanced-treated recycled water from the AWTF.

8.3.8.2. Nitrogen is a nutrient that may be present in recycled water. High nitrate levels in drinking water can cause health problems in humans. Infants are particularly sensitive and can develop methemoglobinemia (blue-baby syndrome). Human activities and land use practices can also influence the nitrogen concentration in groundwater. The AWTF is designed to remove nitrogen from wastewater using a reverse osmosis system. The AWTF will reduce the concentration of nitrogen compounds below the primary MCLs and Basin Plans objectives, as required in this Order. The discharge limitations in this Order for nitrate, nitrite, and the sum of nitrate and nitrite are based on the regional objectives for groundwater in the Basin Plans and the MCLs for nitrate, nitrite, and the sum of nitrate and nitrite in 22 CCR section 64431.

8.3.8.3. Pathogens and other microorganisms may be present in recycled water based on the disinfection status. Coliform bacteria are used as a surrogate (indicator) because they are present in untreated wastewater, survive in an environment similar to pathogenic bacteria, and are easy to detect and quantify. Pathogens are generally limited in their mobility when applied to land.

The AWTF includes multiple systems that are engineered to remove pathogenic microorganisms, including microfiltration, cartridge filters, reverse osmosis and UV/AOP. The recycled water will meet the pathogenic microorganism requirements in accordance with 22 CCR section 60320.208.

In addition, setbacks from recycled water use areas are required in 22 CCR as a means of reducing pathogenic risks by coupling pathogen inactivation rates with groundwater travel time to the Cities’ municipal water supply well

or other potential exposure route (e.g. water contact activities). In general, a substantial unsaturated zone reduces pathogen survival compared to saturated soil conditions. Fine grained soil particles (silt or clay) reduce the rate of groundwater transport and therefore are generally less likely to transport pathogens. Setbacks also provide attenuation of other recycled water constituents through physical, chemical, and biological processes.

8.3.8.4. Disinfection by-products (DBPs) consist of organic and inorganic substances produced by the interaction of chemical disinfectants with naturally occurring substances in the water source. Common disinfection by-products include trihalomethanes, haloacetic acids, bromate, and chlorite. DBPs present in wastewater will be reduced by treatment at the AWTF. Biodegradation, adsorption, volatilization, and other attenuative processes that occur naturally in the aquifer will reduce the concentrations and retard migration of DBPs in the subsurface. Since the treatment train minimizes the amount of organics, inorganics, and chlorine in the product water, DBPs are not expected to exceed any MCLs in the recycled water. Nonetheless, DBPs with primary MCLs (chloroform, bromodichloromethane, chlorodibromomethane, and bromoform) are still required to be monitored in this Order to ensure the concentrations do not exceed the MCLs.

8.3.8.5. Chemicals of Emerging Concern (CECs) in recycled water as defined in the Recycled Water Policy are chemicals in personal care products, pharmaceuticals including antibiotics, antimicrobials; industrial, agricultural, and household chemicals; hormones; food additives; transformation products, inorganic constituents; and nanomaterials. CECs are new classes of chemicals, diverse, and relatively unmonitored chemicals. Many of them are so new that standardized measurement methods and toxicological data for interpreting their potential human or ecosystem health effects are unavailable. The State Water Board convened a CEC Advisory Panel to address questions about regulating CECs with respect to the use of recycled water. The Panel's primary charge was to provide guidance for developing monitoring programs that assess potential CEC threats from various water recycling practices, including groundwater recharge/reuse and urban landscape irrigation. The Panel provided recommendations for monitoring specific CECs in recycled water used for groundwater recharge reuse. The RO system of the AWTF is expected to reduce the concentration of some CECs in the recycled water. CEC monitoring requirements are included in this Order and are consistent with the Recycled Water Policy.

8.3.8.6. Endocrine disrupting chemicals (EDCs) are mostly man-made, found in various materials such as pesticides, metals, additives, or contaminants in food, and personal care products. Human exposure to EDCs occurs via ingestion of food, dust and water, via inhalation of gases and particles in the air, and through the skin. The RO system of the AWTF is expected to reduce the concentration of EDCs in the recycled water prior to distribution and this Order requires proper operation and maintenance of

all treatment facilities and control systems; therefore, the discharge is not expected to cause degradation with respect to EDCs.

8.3.9. Using recycled water for indirect potable reuse is to the maximum benefit to the people of the State. The use of recycled water to recharge groundwater will reduce the region's dependence on imported potable water.

8.4 CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) AND NOTIFICATION

WRD determined that the Inland Injection Project was exempt from CEQA and approved the project on December 02, 2021. WRD filed the Notice of Exemption with State Clearinghouse on December 07, 2021. The Notice of Exemption determined that the proposed inland injection well is categorically exempt as an existing facility and minor alteration to land (CEQA Guidelines sections 15301 and 15304) and would not result in significant impacts to the environment. In addition, WRD consulted with the United States Bureau of Reclamation (USBR) and on March 25, 2022, obtained approval for using previously completed CEQA and other environmental review documents for the Alamitos Barrier Project to meet the requirements of the National Environmental Policy Act (NEPA).

The Los Angeles Water Board, as a responsible agency under CEQA, finds that all environmental effects have been identified for project activities that it approves, and that the Inland Injection Project will not have significant adverse impacts on the environment provided that the mitigation presented in the final CEQA-Plus documents is carried out as conditioned in this Order. In adopting this Order, the Los Angeles Water Board approves the project.

8.5 SAFE DRINKING WATER ACT

Pursuant to CWC section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by reducing the demand for potable water and requiring that the advanced-treated water meets all applicable MCLs and water quality objectives to protect human health.

8.6 ENVIRONMENTAL JUSTICE AND ADVANCING RACIAL EQUITY

Water Code section 13149.2 requires the regional water boards to make findings considering the potential environmental justice, tribal impact, and racial equity impacts when issuing or reissuing individual waste discharge requirements or waivers of waste discharge requirements that regulate activity or a facility that may impact a disadvantaged or tribal community, and that includes a time schedule, alternative compliance path or water quality variance to allow time to come into compliance with applicable water quality objectives. This Order does not include a time schedule, alterative compliance path, or variance. Therefore, the requirements in Water Code sections 13149.2 do not apply.

Water Code section 189.7 requires the Los Angeles Water Board to conduct outreach in disadvantaged and/or tribal communities when considering proposed discharges of waste that may have disproportionate impacts on water quality in those communities.

According to the 2021 U.S. Census, the median household income (MHI) for Long Beach was $78,995, which is 6.1% below the state MHI ($84,097). The area (Census Tract No. 6037980006) surrounding the AWTF and Inland Injection Project are not inhabited and contain Cal Enviroscreen 4.0 pollution burden score of 89, which indicates that the surrounding community may be disproportionately burdened by pollution. The Los Angeles Water Board does not expect this order to disproportionately impact the water quality of an economically disadvantaged community defined at Water Code section 189.7(d)(1). The Order requires the Permittees to meet water quality standards that protect public health and the environment, thereby benefiting all persons and communities within the Region. However, this Order may impact tribal communities. Therefore, the Los Angeles Water Board has conducted outreach per Water Code section 189.7 by reaching out to tribal communities potentially impacted by this Order. The Los Angeles Water Board reached out to the Native American Heritage Commission to determine the tribes that may be impacted by this project and the tentative order was sent to each tribal representative.

THEREFORE, IT IS HEREBY ORDERED that Order No. R4-2014-0111 is hereby terminated upon the effective date of this Order except for enforcement purposes, and in order to meet the provisions contained in division 7 of the CWC (commencing with section 13000) and regulations and guidelines adopted thereunder, and CCR, title 22, division 4, chapter 3, the Permittees shall comply with the requirements in this Order.

9. INFLUENT SPECIFICATIONS

Source Water

The influent to the AWTF shall be tertiary treated effluent as described in the Title 22 Engineering Report and shall at all times be adequately treated. WRD must ensure that the municipal wastewater used for the AWTF be sourced from a wastewater management agency that meets the wastewater source control requirements in accordance with 22 CCR section 60320.206 and shall maintain an agreement with the Los Angeles County Sanitation Districts to ensure that a comprehensive industrial pretreatment and pollutant source control program at the Long Beach WRP and Los Coyotes WRP, is implemented to prevent contaminants that might adversely impact the quality of the reclaimed water being produced by the AWTF from entering the sewer system. LACSD operates an approved pretreatment program in accordance with Section 403 of Title 40 of the Code of Federal Regulations (40 CFR section 403). Permitted industrial dischargers are subject to national pretreatment standards, categorical pretreatment standards, and local limits.

The LACSD have performed a full evaluation of local limits for the Joint Outfall System (JOS), which is an interconnected system consisting of the Long Beach, Los Coyotes, A.K. Warren, Pomona, San Jose Creek and Whittier Narrows, and La Canada Water Reclamation Plants (non-industrial). Due to the system's complex interconnections, it is appropriate to formally evaluate local limits for all treatment plants on the system all at once so that dynamic conditions throughout the system can be considered. The most recent local limits evaluation was submitted to the Los Angeles Water Board on December 20, 2023, finding that the existing limits were fully protective of the JOS system. A re-evaluation will be required following the renewal of the NPDES permit issued to the A.K. Warren Water Resource Facility, which is expected to occur in or around 2028.

10. RECYCLED WATER TREATMENT SPECIFICATIONS

Treatment of recycled water shall be as described in the findings of this Order and as described in DDW's conditional approval letters issued on October 13, 2025 (Attachment F).

11. RECYCLED WATER DISCHARGE LIMITATIONS

Refer to section 12 of this Order for additional information concerning the rationale for the limitations for turbidity, constituents with primary MCLs, constituents with secondary MCLs, constituents with notification levels, pathogenic microorganism, total organic carbon, nitrogen compounds, radioactivity, total coliform, salts, and nutrients.

11.1. Subsurface Application

The advanced-treated recycled water produced at the AWTF for subsurface application shall not contain constituents in excess of the following limitations in Tables 7 and 8, with compliance measured at Monitoring Location EFF-001 as described in the MRP, Attachment E.

TABLE 7. DISCHARGE LIMITATIONS SUBSURFACE APPLICATION

Constituents	Units	Average Monthly	Average Weekly	Maximum Weekly	Maximum Daily	Annual Average	Instan-taneous Minimum	Instan-taneous Maximum	Notes
Total Coliform	MPN/100 mL	--	---	1.1	---	---	---	---	---
pH	Units	---	---	---	---		6.5	8.5	c
Turbidity	NTU	---	---	---	0.2	---	---	0.5	a, b
Total Dissolved Solids	mg/L	---	---	---	---	700	---	---	---
Chloride	mg/L	---	---		---	150	---		---
Sulfate	mg/L	---	---	---	---	250	---	---	---
Boron	mg/L	---	---	---	---	1	---	---	---
Total Nitrogen	mg/L	---	10	---	---	---	---	---	---
Nitrate-N + Nitrite-N (as Nitrogen)	mg/L	10	---	---	---	---	---	---	---
Nitrate as Nitrate	mg/L	45	---	---	---	---	---	---	---
Nitrate as Nitrogen	mg/L	10	---	---	---	---	---	---	---
Nitrite as Nitrogen	mg/L	1	---	---	---	---	---	---	---
Lead	mg/L	0.015	---	---	---	---	---	---	---
Copper	mg/L	1.3	---	---	---	---	---	---	---
Total Organic Carbon (TOC)	mg/L	0.5	---	---	---	---	---	---	---

Footnotes for Table 7

a. 15-minute running average will used for compliance.
b. The turbidity of the treated effluent shall not exceed any of the following: (a) 0.2 NTU more than 5 percent of the time (72 minutes) within a 24-hour period; and (b) 0.5 NTU at any time. For meeting pathogen LRVs for GRRP and per DDW's conditional acceptance letter, the turbidity limit must be met in the microfiltration effluent.
c. The pH limit is obtained from the Santa Ana Water Board's Basin Plan

End of Footnotes for Table 7

TABLE 8. DISCHARGE LIMITATIONS PATHOGENIC MICROORGANISM CONTROL

Parameter	Units	Limitation	Notes
Giardia cyst	log reduction	10	a
Cryptosporidium oocyst	log reduction	10	a
Enteric virus	log reduction	12	a

Footnotes for Table 8

a. Compliance shall be determined in accordance with 22 CCR section 60320.208 and the approved Operation Optimization Plan (OOP). See MRP Section 1.21.

End of Footnotes for Table 8

11.2. Other Applicable Discharge Limitations for Indirect Potable Reuse

The advanced treated recycled water (sampled at EFF-001) shall meet all primary and secondary MCLs and other limitations specified in the Drinking Water Quality and Monitoring Requirements in 22 CCR, division 4, chapter 15. The Permittees shall maintain an updated list of pollutants with primary and secondary MCLs; monitor these pollutants; and ensure that treated recycled water does not exceed any primary or secondary MCL. The list of pollutants with primary and secondary MCLs and their corresponding limitations as of the adoption of this Order are listed in Tables 9 through 14. Compliance with primary MCLs is based on a running annual average of the monthly averaged result, except for total nitrogen, nitrate, nitrite, nitrate plus nitrite, perchlorate, asbestos, lead, copper and any other pollutant for which DDW determines should not be based on a running annual average. For contaminant whose compliance with its MCL or action level is not based on a running annual average, sections 60320.112(d)(1) and 60320.212(d)(1) of Title 22 apply. For a contaminant whose compliance with its MCL is based on a running annual average, additional sampling requirements and when to suspend the application of the advanced treated recycled water shall be implemented in accordance with sections 60320.112(d)(2) and 60320.212(d)(2), Title 22. See Section 1.16 and 1.17 of the MRP for accelerated monitoring and notification procedures.

TABLE 9. DISCHARGE LIMITATIONS INORGANICS – PRIMARY MCLs

Constituents	Units	Running Annual Average	Notes
Aluminum	mg/L	1	---
Antimony	mg/L	0.006	---
Arsenic	mg/L	0.010	---
Asbestos (for fibers exceeding 10 µm in length)	million fibers per liter (MFL)	7	a
Barium	mg/L	1	---
Beryllium	mg/L	0.004	---

Constituents	Units	Running Annual Average	Notes
Cadmium	mg/L	0.005	---
Hexavalent Chromium	mg/L	0.01	---
Total Chromium	mg/L	0.05	---
Cyanide	mg/L	0.15	---
Fluoride	mg/L	2.0	---
Mercury	mg/L	0.002	---
Nickel	mg/L	0.1	---
Perchlorate	mg/L	0.006	---
Selenium	mg/L	0.05	---
Thallium	mg/L	0.002	---

Footnotes for Table 9

a. If four consecutive quarterly results for asbestos are below the detection limit in Table 64432-A of Title 22 for asbestos, monitoring for asbestos may be reduced to one sample every three years. Quarterly monitoring shall resume if asbestos is detected.

End of Footnotes for Table 9

TABLE 10. DISCHARGE LIMITATIONS VOLATILE ORGANIC CHEMICALS (VOCs) - PRIMARY MCLs

Constituents	Units	Running Annual Average	Notes
Benzene	mg/L	0.001	---
Carbon Tetrachloride	mg/L	0.0005	---
1,2-Dichlorobenzene	mg/L	0.6	---
1,4-Dichlorobenzene	mg/L	0.005	---
1,1-Dichloroethane	mg/L	0.005	---
1,2-Dichloroethane (1,2-DCA)	mg/L	0.0005	---
1,1-Dichloroethylene (1,1-DCE)	mg/L	0.006	---
cis-1,2-Dichloroethylene	mg/L	0.006	---
trans-1,2-Dichloroethylene	mg/L	0.01	---
Dichloromethane	mg/L	0.005	---
1,2-Dichloropropane	mg/L	0.005	---
1,3-Dichloropropene	mg/L	0.0005	---
Ethylbenzene	mg/L	0.3	---
Methyl-tert-butyl-ether (MTBE)	mg/L	0.013	---
Monochlorobenzene	mg/L	0.07	---
Styrene	mg/L	0.1	---
1,1,2,2-Tetrachloroethane	mg/L	0.001	---
Tetrachloroethylene (PCE)	mg/L	0.005	---
Toluene	mg/L	0.15	---
1,2,4-Trichlorobenzene	mg/L	0.005	---
1,1,1-Trichloroethane	mg/L	0.200	---
1,1,2-Trichloroethane	mg/L	0.005	---
Trichloroethylene (TCE)	mg/L	0.005	---

Trichlorofluoromethane	mg/L	0.15	---
1,1,2-Trichloro-1,2,2-Trifluoroethane	mg/L	1.2	---
Vinyl Chloride	mg/L	0.0005	---
Xylenes (m,p)	mg/L	1.750	a

Footnotes for Table 10

a. The MCL is for either a single isomer or the sum of the isomers.

End of Footnotes for Table 10

TABLE 11. DISCHARGE LIMITATIONS SYNTHETIC ORGANIC CHEMICALS (SOCs) - PRIMARY MCLs

Constituents	Units	Running Annual Average
Alachlor	mg/L	0.002
Atrazine	mg/L	0.001
Bentazon	mg/L	0.018
Benzo(a)pyrene	mg/L	0.0002
Carbofuran	mg/L	0.018
Chlordane	mg/L	0.0001
2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/L	0.07
Dalapon	mg/L	0.2
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	0.0002
Di(2-ethylhexyl)adipate	mg/L	0.4
Di(2-ethylhexyl)phthalate (DEHP)	mg/L	0.004
Dinoseb	mg/L	0.007
Diquat	mg/L	0.02
Endothall	mg/L	0.1
Endrin	mg/L	0.002
Ethylene Dibromide (EDB)	mg/L	0.00005
Glyphosate	mg/L	0.7
Heptachlor	mg/L	0.00001
Heptachlor epoxide	mg/L	0.00001
Hexachlorobenzene	mg/L	0.001
Hexachlorocyclopentadiene	mg/L	0.05
Gamma BHC (Lindane)	mg/L	0.0002
Methoxychlor	mg/L	0.03
Molinate	mg/L	0.02
Oxamyl	mg/L	0.05
Pentachlorophenol	mg/L	0.001
Picloram	mg/L	0.5
Polychlorinated Biphenyls (PCBs)	mg/L	0.0005
Simazine	mg/L	0.004
Thiobencarb	mg/L	0.07
Toxaphene	mg/L	0.003
1,2,3-Trichloropropane	mg/L	0.000005
2,3,7,8-TCDD (Dioxin)	mg/L	3×10^{-8}

Constituents	Units	Running Annual Average
2,4,5-TP (Silvex)	mg/L	0.05

TABLE 12. DISCHARGE LIMITATIONS DISINFECTION BYPRODUCTS – PRIMARY MCLS

Constituents	Units	Running Annual Average
Total Trihalomethanes (TTHMs) • Bromodichloromethane • Bromoform • Chloroform • Dibromochloromethane	mg/L	0.080
Haloacetic acid (five) (HAA5) • Monochloroacetic acid • Dichloroacetic acid • Trichloroacetic acid • Monobromoacetic acid • Dibromoacetic acid	mg/L	0.060
Bromate	mg/L	0.010
Chlorite	mg/L	1.0

TABLE 13. DISCHARGE LIMITATIONS RADIONUCLIDES – PRIMARY MCLs

Constituents	Units	Running annual Average
Combined Radium-226 and Radium-228	pCi/L	5
Gross Alpha particle activity (excluding radon and uranium)	pCi/L	15
Uranium	pCi/L	20
Beta/photon emitters	millirem/yr	4
Strontium-90	pCi/L	8
Tritium	pCi/L	20,000

TABLE 14. DISCHARGE LIMITATIONS CONSTITUENTS – SECONDARY MCLs

Constituents	Units	Running Annual Average	Notes
Aluminum	mg/L	0.2	---
Color	Apparent Color Unit (ACU)	15	---
Foaming agents (MBAS)	mg/L	0.5	---
Iron	mg/L	0.3	---
Manganese	mg/L	0.05	---
Methyl-tert-butyl ether (MTBE)	mg/L	0.005	---
Odor Threshold	Threshold Odor Number (TON)	3	---
Silver	mg/L	0.1	---
Thiobencarb	mg/L	0.001	---
Zinc	mg/L	5.0	---

Constituents	Units	Running Annual Average	Notes
Total Dissolved Solids	mg/L	1,000	a
Specific Conductance	µS/cm	1,600	a
Chlorides	mg/L	500	a
Sulfates	mg/L	500	a

Footnotes for Table 14

a. The discharge limitation is the upper limit in Table 64449-B.

End of Footnotes for Table 14

12. RATIONALE FOR DISCHARGE LIMITATIONS

12.1. Turbidity

Turbidity is an expression of the optical property that causes light to be scattered in water due to particulate matter such as clay, silt, organic matter, and microscopic organisms. The turbidity discharge limitations are based on the definition of filtered wastewater in 22 CCR section 60301.320.

12.2. Total Coliform

Total coliform bacteria are used to indicate the likelihood of pathogenic bacteria in groundwater. The total coliform discharge limitations in this Order for subsurface application are based on the regional objectives for groundwaters with MUN beneficial use in the Los Angeles Water Board Basin Plan. Although the Santa Ana Basin Plan has its own total coliform water quality objective, the more stringent water quality objective is implemented in this Order.

12.3. TDS, Chloride, Sulfate, and Boron

Human activities and land use practices can influence inorganic constituents in groundwater. Abnormally high levels of inorganic constituents (such as TDS, chloride, sulfate, and boron) can impair and preclude beneficial uses. The discharge limitations for TDS, chloride, sulfate, and boron in Table 6 were carried over from the previous permit to prevent backsliding and these limitations were incorporated into Table 7 and 14 because the concentrations are lower than or equivalent to the secondary MCL “Consumer Acceptance Contaminant Level Ranges” in 22 CCR section 64449 (for TDS, chloride, and sulfate) and the notification level for boron. In addition, the limitations for TDS, chloride, sulfate and boron are equivalent to the numeric mineral water quality objectives for the Central Basin in Table 3-13 of the Los Angeles Basin Plan. The numeric mineral water quality objectives for the Orange County Basin were also considered but the current discharge limits were ultimately maintained. In particular, the discharge limits for TDS and boron for the Orange County Basin are more stringent than the limits for the Central Basin. A review of the groundwater quality results in the Orange County wells receiving the advanced-treated recycled water indicates the water quality in that area has remained

relatively constant, hence emplacing more stringent limits is not necessary at this time (refer to section 8.3.6.3 for the antidegradation analysis).

12.4. Nitrogen Compounds

High nitrate levels in drinking water can cause health problems in humans. Infants are particularly sensitive and can develop methemoglobinemia (blue-baby syndrome). Human activities and land use practices can also influence the nitrogen concentration in groundwater. The discharge limitations in this Order for nitrate, nitrite, and the sum of nitrate and nitrite are based on the regional objectives for groundwater in the Basin Plans and the MCLs for nitrate, nitrite, and the sum of nitrate and nitrite in 22 CCR section 64431. The discharge limitation for total nitrogen is based on 22 CCR section 60320.210 for subsurface application and on the regional objectives for groundwater in the Basin Plans.

12.5. Lead and Copper

The discharge limitation for copper is based on its secondary MCL included in 22 CCR section 64449 and the Santa Ana Basin Plan. The discharge limitation for lead is based on its action level in 22 CCR section 64678.

12.6. Total Organic Carbon

Total organic carbon provides a medium for the formation of disinfection byproducts such as trihalomethanes and haloacetic acids. Drinking water containing these byproducts in excess of their corresponding MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of cancer. The discharge limitation for total organic carbon is based on 22 CCR section 60320.218(b).

12.7. Pathogenic Microorganism Control

The discharge limitations for pathogenic microorganisms are based on 22 CCR section 60320.208.

12.8. Constituents with Primary and Secondary MCLs

Chemical constituents in excessive amounts in drinking water are harmful to human health. The Basin Plan prohibits the discharge of concentrations of chemical constituents and radionuclides in excess of their corresponding MCLs. The discharge limitations for constituents with primary and secondary MCLs are therefore based on the water quality of objectives for MUN in the Basin Plans and 22 CCR sections 64431, 64444, 64449, 64442, and 64533.

13. GENERAL REQUIREMENTS

13.1. Advanced treated recycled water shall not be used for direct human consumption, except for small quantities used for public education purposes, or for the direct processing of food or drink intended for human consumption. However, the Permittees cannot serve advanced treated recycled water for demonstration purposes to more than 25 people daily for at least 60 days out of the year (Health and Safety Code (H&SC), section 116275(h) and 22 CCR

section 64400). In addition, the advanced treated recycled water cannot be bottled and distributed unless it meets the requirements stated the H&SC, section 111070.5 and the CWC section 13570.

13.2. As stated in the Engineering Report and Section 15.7.3, the advanced treated recycled water injected into the Central Basin shall be retained underground for a minimum of 6 months prior to being withdrawn at a domestic supply well. Any change in the minimum retention time of 6 months must be proposed to DDW for review and acceptance. Tracer studies will be performed and based on the results the underground retention times will be included in an updated Engineering Report.

13.3. Bypass, discharge, or delivery to the use area of inadequately treated recycled water, at any time, is prohibited.

13.4. The recycling facility shall be adequately protected from inundation and damage by storm flows.

13.5. Advanced treated recycled water use or disposal shall not result in earth movement in geologically unstable areas.

13.6. The AWTF shall not be the source of pollution or nuisance at any time outside the boundary of the Facility, including odors that unreasonably affect beneficial uses, odors injurious to health, or odors offensive to the senses of members of the community.

13.7. The use of advanced treated recycled water shall not impart tastes, odors, color, foaming, or other objectionable characteristics to the receiving groundwater.

13.8. Advanced treated recycled water shall not contain any substance in concentrations toxic to human, animal, or plant life.

13.9. The Permittees shall always properly operate and maintain all treatment facilities and control systems (and related appurtenances) that are installed or used by the Permittees to achieve compliance with the conditions of this Order. Proper operation and maintenance include effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls (including appropriate quality assurance procedures).

13.10. A copy of these requirements shall be maintained at the AWTF and shall always be available to operating personnel.

13.11. The Permittees shall furnish each user of recycled water with a copy of these requirements and ensure that the requirements are maintained at the user's facility and always available to operating personnel.

13.12. Operators of this publicly owned advanced water treatment facility shall possess a certificate of appropriate grade as specified in 23 CCR section 3680.

13.13. For any material change or proposed change in character, location, or volume of recycled water, or its uses, the Permittees shall submit, at least 120 days prior to the proposed change, an engineering report or addendum to the

existing engineering report to the Los Angeles Water Board and DDW (pursuant to CWC section 13522.5 and 22 CCR § 60323) for approval. The Engineering Report shall be prepared by a qualified engineer registered in California. Any updates to the engineering report shall describe the current treatment plant, the impacts on the recycled water operation, and contain the operation optimization plan (OOP) including a preventive (fail-safe) procedure and contingency plan for controlling accidental discharge and/or delivery to users of inadequately treated recycled water. (Refer to DDW's *Guidelines for the Preparation of an Engineering Report for the Production, Distribution and Use of Recycled Water, June 2023*).

13.14. If the Permittees choose to use one or more wastewater chemicals in lieu of TOC for GRRP monitoring, the Permittees shall obtain approval from DDW as required in 22 CCR section 60320.218.

13.15. Climate Change Effects Vulnerability Assessment and Mitigation Plan

On March 07, 2017, the State Water Board adopted Resolution No. 2017-0012 recognizing the challenges posed by climate change that require a proactive approach in all State Water Board actions, including drinking water regulation, water quality protection, and financial assistance. The resolution lays the foundation for a response to climate change that is integrated into all State Water Board actions by providing direction to the State Water Board divisions and encouraging coordination with the regional water boards. In addition to the State Water Board's Resolution No. 2017-0012, the Los Angeles Water Board adopted Resolution No. R18-004, "A Resolution to Prioritize Actions to Adapt to and Mitigate the Impacts of Climate Change on the Los Angeles Region's Water Resources and Associated Beneficial Uses" on May 10, 2018. The resolution summarizes the steps taken so far to address the impacts of climate change within the Los Angeles Water Board's programs and lists a series of steps to move forward. These include the identification of potential regulatory adaptation and mitigation measures that could be implemented on a short-term and long-term basis by each of the Los Angeles Water Board's programs to take into account, and assist in mitigating where possible, the effects of climate change on water resources and associated beneficial uses. This Order contains provisions to require planning and actions to address climate change impacts in accordance with both the State and Los Angeles Water Board resolutions.

The Permittees must submit a Climate Change Effects Vulnerability Assessment and Mitigation Plan (Climate Change Plan) to assess and manage climate change-related effects that may impact the wastewater treatment facility's operation, water supplies, its collection system, and water quality, including any projected changes to the influent water temperature and pollutant concentrations, beneficial uses, as well as the impact of rising sea level (where applicable). The Permittees shall consider the impacts of climate change as they affect the operations of the AWTF and the recycled water transmission system due to flooding, wildfire, or other climate-related changes, and shall

update the current Climate Change Plan as appropriate. The Climate Change Plan is due 12 months after the effective date of this Order.

14. SPECIFICATIONS FOR USE OF RECYCLED WATER

14.1. Recycled water shall be produced, managed, distributed, stored, and used in conformance with the applicable regulations contained in 22 CCR and 17 CCR.

14.2. Recycled water shall not be used for direct human consumption or for the processing of food or drink intended for human consumption beyond that described in Section 13.1.

14.3. The delivery of recycled water to end users shall be subject to DDW approval and/or its delegated local agency.

14.4. The recycled water shall not be used for any other uses than those specified above unless an engineering report has been submitted for those uses and has been approved in writing by the Executive Officer of the Los Angeles Water Board and DDW.

14.5. Recycled water shall be retained in the areas of use and shall not be allowed to escape as surface flow except as authorized under an NPDES permit.

15. DDW SPECIFICATIONS AND REQUIREMENTS

The Permittees shall comply with the requirements set forth in DDW's conditional acceptance letter to the Los Angeles Water Board dated October 13, 2025, as listed below:

15.1. A The District's Project must comply with 22 CCR Article 5.2 – Indirect Potable Reuse: Groundwater Replenishment – Subsurface Application.

15.2. Per 22 CCR §60320.200(g), prior to replenishing the groundwater basin(s) with recycled water, the District must demonstrate to the Division that the alarms and associated responses, including automatic shutdown, are functional and in conformance with the Operations Optimization Plan (OOP) during an on-site inspection. The District must repeat this testing on a regular basis, including after any modification of treatment trains, as specified in the OOP.

15.3. The District must ensure that the entire applied recycled water flow used for the purpose of indirect potable reuse is continuously treated with full advanced treatment meeting Article 5.2 and as detailed in the Engineering Report and OOP. The District must ensure that all treatment processes are operated in a manner providing optimal reduction of all chemicals and contaminants in accordance with 22 CCR §60320.222.

15.4. Per 22 CCR §60320.200(c), and prior to the operations of the IWF, the District must submit results of the background aquifer sampling electronically via Primary Station Codes (ps-code) to the Division.

15.5. The demonstrated underground retention time must at all times be representative of hydraulic conditions representative of normal operating conditions in accordance with 22 CCR §60320.208(g).

15.6. Per 22 CCR §60320.208(d) and §60320.224(c), the District must conduct an added or intrinsic tracer study to validate underground retention time in accordance with the Division approved tracer study protocol . The District is conducting a new added tracer study for the ABP to replace previous tracer work as described in the Engineering Report. The District must initiate the intrinsic tracer study for IWF prior to the end of the third month following the start of operations of IWF. Once completed, the District must submit the results of the ABP and IWF tracer studies (Tracer Studies) to the Division for review and approval. In consultation with the Division, the District must update the hydrogeological model with the results of the Tracer Studies. The five-year Engineering Report must incorporate the results of the Tracer Studies.

15.7. The District must comply with 22 CCR §60320.200(e). The District must implement the following regarding zones of controlled drinking water well construction:

15.7.1. Prior to recharge in IWF, the District must adopt a resolution establishing a zone of controlled drinking water well construction (“primary boundary”), and a zone of potential controlled drinking water well construction (“secondary boundary”), including private wells, and state small water system wells, in accordance with 22 CCR §60320.200(e). The construction or existence of irrigation wells with respect to the primary boundary must be included. If any new private wells are discovered within the primary or secondary boundaries, the District must contact the Division.

15.7.2. The District must coordinate, prior to operation of each recharge area and quarterly, with the local well permitting authorities to discuss changes to screening depths or pumping capacity of the nearest production well(s) to ABP and IWF.

15.7.3. Until the Tracer Studies are completed, the District must use a minimum underground retention time of six (6) months as described in the Engineering Report. Once the Tracer Studies are completed, the District must re-evaluate the underground retention time based on the results of the Tracer Studies. If the underground retention time is determined to be lower than six (6) months, then the lower value must be used in consultation with the Division.

15.7.4. Once the Tracer Studies are completed, the District must update the primary and secondary boundaries as needed based on results of the Tracer Studies and notify the local well permitting authorities (e.g. Los Angeles County Department of Public Health, City of Long Beach Health Department, etc.) as needed.

15.8. The District must notify the Division and RWQCB and submit necessary documents for any increase in LVLAWTF design flowrate (greater than 8 MGD), a new source of wastewater (e.g. LACSD’s LCWRP), changes to treatment processes (e.g. changing MF filtrate configuration or new MF model, etc.), or additions/removals of monitoring wells, injection wells. For replacement injection wells, the District must notify the Division and discuss impacts to the existing Project hydrogeological model, well control zone boundaries,

underground retention time, and response times. If directed by the Division, the District must update the Engineering Report and OOP.

15.9. If proposing an alternative to any of the requirements in Article 5.2, the District must follow the process described in 22 CCR §60320.230. If directed by the Division to demonstrate public health equivalency, the District must administer an independent advisory panel in consultation with the Division.

15.10. The District must have and utilize alarms for the LVLAWTF as described in the Engineering Report, OOP, and this conditional acceptance letter. Commissioning must validate and confirm the operation setpoints per 22 CCR §60320.201. A full description of the alarms must be included in the OOP, in accordance with 22 CCR §60320.222.

15.11. The District must adequately staff LVLAWTF with operational staff. The LVLAWTF must be supervised and operated by persons possessing certificates of appropriate grade as required by the RWQCB. The District must track the expiration dates for all certified operators to ensure certifications are maintained. In addition, the District must staff the LVLAWTF with operators that possess or are working to obtain a valid California-Nevada Section of the American Water Works Association/California Water Environment Association advanced water treatment operator certifications as follows:

15.11.1. Within 36 months of the permit adoption, the District must staff the LVLAWTF with at least one AWT5™ certified Chief Plant Operator and with at least one AWT3™ or higher certified operator available for on-call support for each operating shift.

15.12. The District must provide for on-going training program to ensure that each operator has been trained in the following during crewed and uncrewed (if any) shifts:

15.12.1. The proper operation of all treatment processes utilized to achieve pathogen and chemical reduction.

15.12.2. Maintenance, calibration, and verification of instrumentation and analyzers.

15.12.3. Control systems, data trending, and the control strategy of plant systems.

15.12.4. Incident response and investigation.

15.12.5. The California Safe Drinking Water Act, its implementing regulations, and all other relevant regulations.

15.12.6. The potential adverse health effects associated with the consumption of drinking water that does not meet California drinking water standards.

15.13. The maximum recycled municipal wastewater contribution (RWC) for this Project is 1.0 (100%) as described in the Engineering Report and in accordance with 22 CCR §60320.216.

15.14. The District must optimize LVLAWTF effluent water stabilization treatment to maintain effective geochemical mobilization control in the groundwater impacted by the Project. The process optimization for stabilization treatment must be specified in the OOP and include monitoring of parameters that can potentially cause and/or indicate aggravations for geochemical releases. Furthermore, if directed by the Division or the RWQCB, the District must conduct additional geochemical analysis for the purpose of controlling metal mobilization in the groundwater.

15.15. Per 22 CCR §60320.200(k), if the District has been directed by the Division or the RWQCB to suspend subsurface application of recycled water, subsurface application of recycled water must not resume until the District has obtained approval from the Division and the RWQCB.

15.16. The District must ensure the recycled municipal wastewater used for the Project meets the wastewater source control requirements in accordance with 22 CCR §60320.206.

15.17. The District through its agreement with the LACSD as the control authority to implement and enforce its EPA-approved Pretreatment Program, must ensure the local limits and water quality monitoring maintained is representative of new source(s) or changes to existing source(s) including new chemical(s) or contaminant(s) discharged to the sewer collection system.

15.18. The District must ensure that the recycled municipal wastewater used for the Project is from a wastewater management agency that implements and maintains a source control program that includes, at a minimum;

15.18.1. An assessment of the fate of Division-specified and RWQCB-specified chemicals and contaminants through the wastewater and recycled municipal wastewater treatment systems. The Division specifies the following chemicals:

15.18.1.1. Tertiary butyl alcohol (TBA)

15.18.1.2. N-Nitrosodimethylamine (NDMA)

15.18.2. Chemical and contaminant source investigations and monitoring that focus on Division-specified and RWQCB-specified chemicals and contaminants,

15.18.3. An outreach program to industrial, commercial, and residential communities within the portions of the sewage collection agency's service area that flows into the water reclamation plant subsequently supplying the Project, for the purpose of managing and minimizing the discharge of chemicals and contaminants at the source, and

15.18.4. A current inventory of chemicals and contaminants identified pursuant to this section, including new chemicals and contaminants resulting from new sources or changes to existing sources, that may be discharged into the wastewater collection system.

15.19. In accordance with 22 CCR §60320.204, all laboratory analyses for contaminants having a primary or secondary maximum contaminant level (MCL) must be conducted using a drinking water method approved by the Division for the contaminant and by a laboratory accredited by the State Water Board Environmental Laboratory Accreditation Program (ELAP) for the analytical method used. Analyses for chemicals other than those having primary or secondary MCLs must be described in the District's OOP.

15.20. Analytical results of all sample analyses completed in a calendar month must be reported to the Division no later than the 10th day of the following month.

15.20.1. The District must use the Division-provided ps-codes to electronically submit the water quality monitoring results for the Project.

15.20.2. Laboratory results that cannot be transmitted electronically via ps-codes to California Laboratory Intake Portal (CLIP) must be submitted to the Division in the appropriate reports (e.g. quarterly reports).

15.20.3. Data produced and reports submitted for analysis required by Article 5.2 must be generated by a laboratory accredited by ELAP. The laboratory must hold a valid certificate of accreditation for the analytical test methods validated for intended use and approved by the Division.

15.21. The District must not reduce the monitoring frequency for the chemicals that overlap with constituents of emerging concern in the Recycled Water Policy , without the approval of the Division. The District must use the analytical methods described in the approved OOP, and any changes must be approved by the Division.

15.22. The AOP must be operated as designed and described in the Engineering Report to meet 22 CCR requirements, achieving a minimum 0.5-log reduction of 1,4-dioxane and meeting notification levels of all chemicals with a Notification Level under the normal full-scale operating conditions.

15.23. Per 22 CCR §60320.201(h), the District must perform calculations to document proper on-going performance of the reverse osmosis and advanced oxidation processes and report in the quarterly reports. State the percent of results of the quarter's monitoring, conducted pursuant to 22 CCR §60320.201(b) and (e), that did not meet the surrogate or operational parameter limits. State in the quarterly report if the limits were exceeded by greater than 10% of time for each quarter.

15.24. The District must design and operate the Project such that the advanced treated municipal wastewater used for groundwater recharge and replenishment achieves at least 12-log enteric virus reduction, 10-log *Giardia cyst* reduction, and 10-log *Cryptosporidium oocyst* reduction pursuant to 22 CCR §60320.208.

15.25. Per 22 CCR §60320.208(c), the District must validate each of the treatment processes used to meet the required *Cryptosporidium oocyst*, *Giardia cyst* and virus reduction. The District must include in its approved OOP, the necessary

monitoring and calculations that validate the performance of each treatment process's ability to achieve its pathogen log reduction value (LRV) as proposed in the Engineering Report and OOP.

15.26. Per 22 CCR §60320.228, the District must submit the annual report to the Division, and RWQCB no later than six months after the end of each calendar year. Public water systems and drinking water well owners having downgradient sources potentially affected by the Project and within 10 years groundwater travel time from the Project must be notified by direct mail and/or electronic mail of the availability of the annual report.

15.27. The District must update the Engineering Report to address any changes and submit to the Division and the RWQCB at least every five years.

15.28. The District must complete compliance monitoring as required by the Division and the RWQCB. If there are duplications or overlap, the District must comply with the more stringent requirement.

15.29. The District operates a multi-barrier treatment facility in order to comply with the requirements of Article 5.2. Monitoring for the purpose of pathogen log reduction calculation and demonstration must be reported electronically to the Division monthly. Monthly reports are due by the 10th day of the following month. The monitoring and reporting requirements of this letter must be incorporated into the OOP.

15.29.1. For each specific treatment process unit performing within the defined operational parameter limits (as defined in the OOP), the calculated minimum LRV is the LRV attributed to each treatment process for each pathogen unless stated otherwise in this letter. Flow-weighted averaging cannot be used for the purpose of calculating the LRV for any treatment process including between parallel treatment trains of the same process.

15.29.2. The District must report "Yes" or "No" for each day as to whether the total required pathogenic microorganism log reductions (12-logs virus, 10-logs Giardia cyst, and 10-log reduction of Cryptosporidium oocyst have been achieved based on the overall treatment train LRV. The overall treatment train LRV for *Cryptosporidium oocyst*, *Giardia cyst* and virus is the sum of LRV for each treatment process for each pathogen. An overall treatment train LRV must be provided daily unless the LVLAWTF is offline for entire 24-hour period.

15.29.3. Per 22 CCR §60320.208(i), if the effectiveness of a treatment train's ability to reduce enteric virus is less than 10-logs, or *Giardia cyst* or *Cryptosporidium oocyst* reduction is less than 8-logs, the District must immediately notify the Division and RWQCB, and discontinue application of recycled water, unless directed otherwise by the Division or RWQCB. Per 22 CCR §60320.208(h), if the required *Cryptosporidium oocyst*, *Giardia cyst* and virus reduction are not met based on the required on-going monitoring detailed in the approved OOP, within 24 hours of being aware, the District must investigate the cause and initiate automatic corrective actions.

15.29.4. The District will receive a daily LRV credit of 6-log for each pathogen if a minimum electrical energy dose (EED) of 0.20 kWh/kgal is provided at all times. The District will receive a daily LRV credit of 1-log virus for each month retained underground as demonstrated in accordance with 22 CCR §60320.208(e). The failure to meet the minimum EED of 0.20 kWh/kgal must trigger immediate discontinuation of recycled water application.

15.29.5. The combined membrane filter effluent turbidity must not exceed the following limits: (i) 0.2 NTU more than 5% of the time within a 24-hour period; and (ii) 0.5 NTU at any time. Exceedance of turbidity limits must trigger the reliability feature(s) and corresponding corrective action(s) as described in the OOP. Discrete turbidity readings must be recorded at a set interval to determine compliance with the turbidity requirements and limits under 22 CCR §60321(b) and §60301.320. Averaging cannot be utilized for the determination of compliance with turbidity limits.

15.29.6. The MF process at LVLAWTF consist of six MF units in the Primary Filtration System (Primary MF) and four MF units in the Backwash Recovery System (Recovery MF). Each MF unit must be equipped with an apparatus to perform direct integrity test (DIT) using a pressure decay test (PDT). The PDT must be performed on each of the MF membrane unit daily (unless the train is offline for the entire day; the PDT must be performed daily even if the unit is operational for partial day) and automatically when turbidity limits of (i) 0.2 NTU more than 5% of the time within a 24-hour period (or an alternative value approved by the Division); and (ii) 0.5 NTU (or an alternative value approved by the Division) at any time are exceeded for any MF unit based on continuous monitoring. A membrane comprehensive integrity verification program must be included in the OOP. The following apply to the PDT:

15.29.6.1. The LRV for Cryptosporidium oocysts must be calculated and the values recorded after the completion of each PDT. Giardia cysts LRV credit is the same value as the calculated LRV for Cryptosporidium oocysts. Virus LRV is zero as described in the Engineering Report.

15.29.6.2. The PDT must have a resolution that is responsive to an integrity breach on the order of 3 µm or less.

15.29.6.3. Daily calculations of the LRV must be based on a pressure decay rate value with an ending pressure that provides a resolution of 3 µm or less.

15.29.6.4. The PDT must have a sensitivity to verify an LRV equal to or greater than 4.0-log for Primary MF and 2.75-log for Recovery MF or an alternative value(s) as approved by the Division.

15.29.6.5. If any MF unit fails the PDT based on the Upper Control Limit, then the unit must be isolated, repaired, retested and have acceptable DIT results prior to being placed back into service.

15.29.7. Based on the Division letter dated July 19, 2004 titled *Conditional Acceptance Of Increased Flux For Pall USV 6203 And USV-5203; Conditional*

Acceptance Of Pall Microza UNA-620A Membrane as an Alternative Filtration Technology the District's existing membrane treatment (Pall Microza UNA-620A) must operate within the limits of (i-ii).

15.29.7.1. Maximum operational flux must not exceed 120 gallons per square foot per day (gfd).

15.29.7.2. Maximum transmembrane pressure of 43.5 pounds per square inch (psi).

15.29.8. The MF LRV credit is the minimum calculated LRV of any online individual MF unit for a given day.

15.29.9. The District proposes to follow a tiered monitoring approach for the RO system. Pathogen reduction through the RO system may be demonstrated via the tiered monitoring approach of surrogates . The District must report the calculated surrogate reduction values from all tiers and indicate which tier is used for reporting the RO LRV credit for a day in monthly reports. In addition, the District must include in the monthly reports, the daily average and maximum RO feed and RO permeate for surrogates from all tiers. The District must apply the logarithmic function as the last step in the calculation for the LRV.

15.29.9.1. Tier 1: Continuous TOC monitoring of the combined RO feed and the combined RO permeate. The RO LRV credit will be calculated based on the average daily TOC reduction. If Tier 1 is unavailable, the RO LRV credit must be determined by Tier 2. Continuous TOC monitoring of the RO treatment train(s) must be conducted at: (1) the combined RO feed stream and (2) combined RO permeate stream and results of which must be used to calculate a daily average TOC reduction by the RO. Daily Tier 1 pathogen LRV credit must be calculated as the daily average TOC log reduction achieved by the RO treatment. If TOC analyzer fails or is unavailable, the RO LRV credit must be determined by Tier 2. If an alternative surrogate is used, then each RO train must be monitored to determine an LRV.

15.29.9.2. Tier 2: Continuous EC monitoring (at least once every 15-minutes) of the RO treatment must be conducted at: (1) the combined RO feed stream and (2) Individual RO train permeate stream, results of which must be used to calculate a minimum daily EC reduction for each RO train. The RO LRV credit must be calculated based on the minimum daily EC log reduction achieved by any online train.

15.29.10. To meet the requirement of 22 CCR §60320.201(b), continuous surrogate monitoring must be conducted to ensure the integrity of the RO system. The permeate of each RO unit must be monitored continuously for the selected surrogate. The minimum and average EC reduction achieved by each train must be calculated and recorded continuously (based on readings taken at least every 15 minutes). The District must describe the RO monitoring program, and how it will indicate RO integrity has been compromised in the OOP. The RO monitoring program must include at least the following elements in the OOP.

15.29.10.1. Determination or use of a baseline integrity value at least for each stage in each RO unit .

15.29.10.2. Determination of lower and upper control limits for each surrogate to be used (e.g. EC) for integrity testing using a statistical methodology.

15.29.10.3. Associated responses (e.g. conductivity profiling) for control limits exceedances.

15.29.11. The UVAOP must be operated with continuous monitoring and reliability features that must trigger automatic corrective actions if the following operational parameter limit(s) are exceeded:

15.29.11.1. For any train, complete UV reactor failure including train power or train communication loss.

15.29.11.2. The influent flowrate for Train 1 exceeds 2.12 MGD or the influent flowrate of Trains 2 and 3 exceeds 2.94 MGD for more than 15 minutes (or another value approved by the Division).

15.29.11.3. For any train, the EED is less than 0.50 kWh/kgal for more than 15 minutes (or another value approved by the Division).

15.29.11.4. The combined influent UV Transmittance (UVT) is less than 95% for more than 15 minutes.

15.29.11.5. For combined UVT ≥ 96%, a minimum energy-oxidant dose product (EED × hydrogen peroxide oxidant dose) of 1.0 kWh/kgal*mg/l (or another value approved by the Division).

15.29.11.6. For combined UVT between 95% and 96%, minimum energy-oxidant dose product of 1.2 kWh/kgal*mg/l (or another value approved by the Division).

15.29.11.7. The hydrogen peroxide oxidant dose of ≤ 2 mg/l enters the UV system for UVT ≥ 96% for more than 15 minutes, or ≤ 2.4 mg/l enters the UV system for UVT between 95% and 96% for more than 15 minutes (or another value approved by the Division).

15.29.12. The hydrogen peroxide dose applied must be monitored using the chemical dosing metering pump and flow meter measurements and recordings. The hydrogen peroxide dose applied must be verified by testing at the inlet to the UV reactor using test kits or an alternative method with minimum detection of 0.1 mg/l. The hydrogen peroxide dose calibration, verification procedure, and frequency must be addressed in OOP.

15.29.13. At the respective UV system control points, the District must provide continuous monitoring of calculated UV dose, EED, flowrate, train power, and UV transmittance at all times as surrogate and/or operational parameters to indicate whether the minimum chemical reduction (i.e. 0.5-log 1,4-dioxane

reduction) criterion is being met. All instrumentation used to measure these parameters must be calibrated per the manufacturers' recommendations.

15.29.14. At least weekly, the UVT meter must be inspected and checked against a reference unit to document accuracy. Tolerance and responses (e.g. calibration if tolerance is >2%, etc.) must be included in the OOP.

15.29.15. If directed by the Division, the District must monitor and/or calculate the radical scavenging demand as specified in the OOP and monitoring results to be included in the quarterly reports.

15.29.16. If directed by the Division, the District must optimize the stabilization process to control any metal mobilization and if needed, conduct additional geochemical analysis for the purpose of controlling any metal mobilization.

15.30. In accordance with 22 CCR §60320.210, 22 CCR §60320.212, and 22 CCR §60320.220, the LVLAWTF advanced treated recycled water must be sampled quarterly for primary drinking water MCLs (Chapter 15 of 22 CCR, Tables 66431-A, 64442, 64443, 64444-A, and 64533-A), total nitrogen, lead, copper and chemicals with Notification Levels . Monitoring for contaminants with secondary MCLs (Chapter 15 of 22 CCR, Tables 64449-A and B) must be conducted annually. The District must, in accordance with 22 CCR §60320.226 and as specified in the OOP, collect the required samples from the monitoring wells. The results must be reported to the Division and the Regional Water Board. The District may reduce monitoring frequency, including reducing monitoring to single aquifer following the Division and Regional Water Board approval based on review water quality data in accordance with 22 CCR §60320.210(b), and 22 CCR §60320.226(e). The District must update the OOP to incorporate any future revisions to chemical monitoring lists (e.g. MCLs, NLs, etc.). The District has provided historical water quality data to support the reduction of monitoring frequencies and discontinuance of monitoring for some contaminants for LVLAWTF advanced treated recycled water and groundwater monitoring wells. The Division has reviewed the water quality data and accepts the reduced monitoring frequency as described in the Engineering Report as summarized in Attachment A. For constituents in groundwater monitoring that is either reduced or discontinued contaminants, as described in Attachment A, will revert to the frequency as required in 22 CCR §60320.226(b), either (i) upon exceedance of any MCL or NL in the product water based on the average of the initial and confirmation result, or (ii) upon determination by the Division due to increasing trends in concentration of the reduced or discontinued contaminants in the product water.

15.31. The District must monitor the Division-specified performance indicator constituents for RO and AOP. This monitoring is intended for the optimization of advanced treatment processes and to ensure the Division's goal of protection of public health. The Division specifies Sucralose (or another performance indicator as approved by the Division) and NDMA (or another performance indicator as approved by the Division) as performance indicator constituents for RO and AOP, respectively. These constituents must be monitored quarterly

both prior to and after the corresponding treatment process. Data must be included in annual reports including percent reduction for each performance indicator. In the OOP, the District must use sampling data to develop a baseline value, along with lower, and upper alarm limits using a statistical methodology to monitor performance of respective processes.

15.32. The District must implement the following approach in the event of a water quality exceedance as measured at the LVLAWTF advanced treated recycled water in accordance with 22 CCR §60320.210, 22 CCR §60320.212, and 22 CCR §60320.220.

15.32.1. Collect confirmation sample(s) within 72 hours of notification.

15.32.2. If the average of the initial and confirmation sample exceeds the contaminant's MCL or action level, or the confirmation sample is not collected and analyzed, the District must notify the Division and the RWQCB of the exceedance and initiate weekly sampling. Samples are to be used in compliance determination even if recycled water was diverted from indirect potable reuse application. Running four-week average is the arithmetic mean, calculated weekly, of the monitoring results from the previous four weekly samples. First weekly sample is the average of the initial and confirmation sample.

15.32.2.1. For exceedance of a contaminant whose compliance with its MCL or action level is not based on running annual average in drinking water regulations , the District must notify the Division and RWQCB within 24 hours of determination of the exceedance and conduct corrective actions in accordance with 22 CCR §60320.212(d)(1).

15.32.2.2. For exceedances of a contaminant whose compliance with its MCL is based on running annual average in drinking water regulations (i.e. remaining MCLs), the District must notify the Division and RWQCB of the exceedance and conduct corrective actions in accordance with 22 CCR §60320.212(d)(2).

15.32.3. For Total Nitrogen exceedance, the District must follow requirements of 22 CCR §60320.210(a). If the average of the results of four consecutive samples collected pursuant to 22 CCR §60320.210(a)(1) exceeds 10 mg/l total nitrogen, suspend the subsurface application of recycled water.

15.32.4. For SMCLs exceedance, the District must follow requirements of 22 CCR §60320.212(e).

15.32.5. For notification levels exceedance, the District must notify the Division and RWQCB of the exceedance and conduct corrective actions in accordance with 22 CCR §60320.220(b).

15.33. The District must implement the approach as described in 22 CCR §60320.226(c) in the event of a single sample result exceeding 80% of the MCL of Nitrate, Nitrite, or Nitrate plus Nitrite MCL as measured in the Project's groundwater monitoring well(s).

15.34. Per 22 CCR §60320.218, the LVLAWTF advanced treated recycled water must be sampled prior to replenishment at least weekly for Total Organic Carbon (TOC). The District must report the results of TOC monitoring in the quarterly reports. The District is approved to utilize continuous online analyzer for TOC measurements in lieu of composite samples at this location.

15.35. The LVLAWTF advanced treated recycled water TOC results must be reported as follows:

15.35.1. The average of the last four (4) TOC results must be the average of the last four weekly average results;

15.35.2. The 20-week running average of all TOC results must be the arithmetic mean of all continuous analyzer results and hourly grab sample results collected within the past 20 calendar weeks.

15.36. The OOP must be, at all times, representative of the current operations, maintenance, and monitoring of the Project pursuant to 22 CCR §60320.222. The District must operate the LVLAWTF in accordance with the approved OOP. Within six months of optimizing treatment processes pursuant to 22 CCR §60320.222(b) and anytime thereafter operations are optimized that result in a change in operation, the District must update the OOP to include such changes in operational procedures and submit the OOP to the Division for review.

15.37. At a minimum, the OOP must identify and describe the operations, maintenance, analytical methods, monitoring necessary for the Project to meet the requirements of 22 CCR Article 5.2, and the reporting of monitoring results to the Division and RWQCB. This must include the following elements:

15.37.1. Operations plan (including any calculations needed for the validation of unit process's pathogen log reduction credits per 22 CCR §60320.208(c), chemical dosage calculations, injection well back-flushing, start-up and shutdown procedures).

15.37.2. Preventative maintenance program (including equipment repair and replacement, UV lamp fouling, replacement program for membranes, instrumentation maintenance, and calibration).

15.37.3. Cross connection control and product water protection (including prevention of bypass treatment and reversal of flow into the LVLAWTF's product water lines; inspection and reporting procedures for any potential points of vulnerability between the on-site potable water, industrial water, wastewater, recycled water, chemical, or other waste or non-potable systems; procedures to close out construction activities potentially impacting the water or non-water piping systems).

15.37.4. Water quality monitoring program (e.g. analytical methods, associated instrumentation, and ps-codes for monitoring locations).

15.37.5. Contingency plans (e.g. responses to LBWRP process upsets, LVLAWTF process upsets, unit process communication failure, power

interruptions, off-spec water, water quality exceedances, and contact information for key personnel and agencies), and emergency response plan.

15.37.6. Records (including records related to preventative maintenance program, contingency plan, sample templates for UV lamp age log, TOC results log, and monthly report) and reporting procedures.

15.37.7. Staffing plan for crewed and uncrewed operations (if any), which includes information on operator staffing hours, shifts, responsibilities and certification classes. Include a log for tracking expiration dates for operator certifications.

15.37.8. Reliability features, which include, at a minimum, the following elements: the alarms that trigger responses other than diversion, retreatment, or shutdown. the alarms that trigger reliability features: diversion, retreatment, or shutdown. For each alarm, include the associated response and the associated instrumentation include the following: instrument tag, description, type (i.e. low, low-low, or critical etc.), trigger value, effect, and time delay.

15.37.9. The required frequency of calibration for instrumentation, along with instrumentation tag and description.

15.38. The District must provide process control quick reference guide for operators in (1) the main treatment control center and (2) in the OOP that include, at a minimum, the following elements:

15.38.1. All alarms that trigger reliability features: diversion, retreatment, or shutdown.

15.38.2. All alarms that trigger responses other than diversion, retreatment, or shutdown.

15.38.3. For each alarm, include the associated response and key instrumentation information. At a minimum, this must include:

15.38.3.1. Instrument tag and description

15.38.3.2. Alarm type (i.e., low-low, low, high, high-high, etc.)

15.38.3.3. Alarm setpoint or trigger value and if the setpoint or trigger value is hardcoded

15.38.3.4. Alarm effect (e.g., SCADA alarm, automatic diversion, shutdown, etc.)

15.38.3.5. Alarm time delay

15.38.3.6. The required frequency of calibration for instrumentation associated with critical control alarms.

15.39. The District must update the OOP to incorporate any future revisions to chemical monitoring lists (e.g. MCLs, NLs, etc.).

15.40. The District must implement its cross-connection control program and describe in the cross-connection control program report (CCCPR) practices that ensure

no undesired or unintended reversal of flow of water or other liquids, gases, or other substances into the LVLAWTF's final effluent water lines. This includes meter protection and internal protection from cross-connections. The CCCPR must be updated as needed to ensure that the program is always representative of the current cross-connection control practices at the LVLAWTF.

15.40.1. The District must coordinate with the City of Long Beach Department of Health and Human Services to implement the Cross-Connection Control Policy Handbook (CCCPH) and designate a use site supervisor.

15.40.2. Revisions to the cross-connection control program, including changes resulting from inspections, must be done in consultation with the designated use site supervisor (or an individual with a valid and current Cross-Connection Control program Specialist certification from a certifying organization recognized by the State Water Board pursuant to the State Water Board's Cross-Connection Control Policy Handbook).

15.40.3. The CCCPR must be updated yearly with the results of the annual cross-connection site inspections, testing of backflow preventers, and all applicable corrective actions, and in consultation with the use site supervisor. The CCCPR must be submitted to the Division, RWQCB, and City of Long Beach Department of Health and Human Services. In addition, the City of Long Beach Department of Health and Human Services must be notified of any plumbing changes.

15.41. The District must, in coordination with the City of Long Beach Utilities Department test the potable meter backflow device(s) on an annual basis and provide results to the City of Long Beach Utilities Department.

15.42. The District must notify the Long Beach Department of Health and Human Services and the Division of any known or suspected incident of backflow within 24 hours of the determination.

16. ADDITIONAL PROVISIONS

16.1. For any extension or expansion of the inland injection area, including the addition of new groundwater injection wells that are not covered under this Order or by the Engineering Report, the Permittees shall submit an updated Engineering Report detailing the extension or expansion plan for review by DDW and the Los Angeles Water Board, and for approval by DDW. The Permittees shall submit to the Los Angeles Water Board a copy of the approved expansion plan and DDW approval within 30 days of approval. The Permittees shall not deliver recycled water to the new injection wells until the Executive Officer of the Los Angeles Water Board ensures the requirements in these WDRs/WRRs are protective of human health and the groundwater basin and approves the distribution of the recycled water to the new injection wells. Following construction, as-built drawings, well diagrams, and geophysical logs shall be submitted to DDW for review prior to delivery of recycled water. The Permittees shall submit to the Los Angeles Water Board a copy of as-built

drawings, well diagrams and geophysical logs and DDW approval within 30 days of DDW's approval.

16.2. Injection of the advanced treated recycled water shall not cause or contribute to an exceedance of water quality objectives in the Central Basin.

16.3. The Permittees shall submit to the Los Angeles Water Board, signed under penalty of perjury by the designated responsible party, technical self-monitoring reports according to the specifications contained in the Monitoring and Reporting Program, as may be amended by the Executive Officer.

16.4. The Permittees shall notify this Los Angeles Water Board and DDW within 24 hours of any confirmed coliform result that could cause a violation of the requirements as a result of the use of advanced-treated recycled water produced by the AWTF. This information shall be confirmed in the following monitoring report. For any actual coliform limit violation that occurred, the report shall also include the cause(s) of the high coliform counts, the corrective measures undertaken (including dates thereof), and the preventive measures undertaken to prevent a recurrence.

16.5. This Order does not exempt the Permittees from compliance with any other laws, regulations, or ordinances which may be applicable; it does not authorize the recycling and use facilities; and it leaves unaffected any further constraint on the use of advanced treated recycled water at certain site(s) that may be contained in other statutes or required by other agencies.

16.6. This Order does not alleviate the responsibility of the Permittees to obtain other necessary local, state, and federal permits to construct or use facilities necessary for compliance with this Order; nor does this Order prevent imposition of additional standards, requirements, or conditions by any other regulatory agency. Expansion of the advanced treated recycled water distribution facility shall be contingent upon issuance of all necessary requirements and permits, including a conditional use permit.

16.7. The Permittees shall furnish, within a reasonable time, any information the Los Angeles Water Board or DDW may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. This Order requires the Permittees to maintain certain records for at least three years. Upon the Los Angeles Water Board's request, the Permittees must furnish copies of these records.

16.8. This Order includes the attached *Standard Provisions Applicable to Waste Discharge Requirements* (Attachment D). If there is any conflict between the provisions stated in this Order and the Standard Provisions, the provisions stated in this Order shall prevail.

16.9. This Order includes the attached Monitoring and Reporting Program No. CI-8956 (Attachment E). If there is any conflict between provisions stated in the Monitoring and Reporting Program and the Standard Provisions, those provisions stated in the Monitoring and Reporting Program prevail.

17. REOPENER

17.1. This Order may be modified, revoked and reissued, or terminated for cause, including but not limited to: (1) failure to comply with any condition in this Order, (2) endangerment of human health or environment resulting from the permitted activities in this Order, (3) obtaining this Order by misrepresentation or failure to disclose all relevant facts, or (4) new information that justifies the application of different conditions. The filing of a request by the Permittees for modification, revocation and reissuance, or termination of the Order or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

17.2. This Order may be reopened to include the most scientifically relevant and appropriate limitations for this discharge, including those based on revised Basin Plan water quality objectives, monitoring results received, new studies or State Water Board policies, or the application of an attenuation factor based upon an approved site-specific attenuation study.

17.3. This Order may be reopened to modify limitations for constituents to protect beneficial uses, based on new information not available at the time this Order was adopted.

17.4. If after additional monitoring, reporting, and trend analysis documenting changed aquifer conditions, this Order may be reopened to ensure the groundwater is protected in a manner consistent with applicable water quality laws and regulations. Monitoring data may also be submitted to support analyte / sampling frequency adjustments for consideration by the Executive Officer of the Los Angeles Water Board.

17.5. This Order may be reopened to incorporate any new regulatory requirements for sources of drinking water that are adopted after the effective date of this Order.

17.6. This Order may be reopened upon a determination by DDW that treatment and disinfection of advanced treated recycled water is insufficient to protect human health.

17.7. This Order may be reopened if the Executive Officer of the Los Angeles Water Board determines additional requirements are needed to permit new injection sites or into other groundwater aquifers that were not covered in this Order to protect human health or to prevent degradation of the groundwater basin.

17.8. This Order may be reopened to include new requirements for new uses not currently covered in this Order.

18. ENFORCEMENT

18.1. The requirements of this Order are subject to enforcement under the Water Code, including sections 13268 and 13350, and enforcement provisions in Water Code, Division 7, Chapter 7 (Water Reclamation).

18.2. The Permittees are subject to the terms and conditions of this Order.

19. GROSS BETA/PHOTON EMITTERS COMPLIANCE DETERMINATION

Compliance with the advanced treated recycled water discharge limitations for Gross Beta/photon emitters contained in Section 11 of this Order will be determined as follows:

The monthly average effluent limitation for gross beta/photon is equal to 4 millirem/year with a screening level of 50 picocuries per liter (pCi/L). Due to naturally occurring Potassium-40, the results of the Potassium-40 gross beta activity may be subtracted from the total gross beta activity to determine if the screening level is exceeded. The Potassium-40 beta particle activity must be calculated by multiplying elemental potassium concentration (in mg/L) by a factor of 0.82 to determine activity from Potassium-40. The Potassium-40 must be analyzed from the same or equivalent sample used for the gross beta analysis. If the gross beta particle activity minus the naturally occurring Potassium-40 beta particle is less than or equal to 50 pCi/L, the facility is in compliance with the effluent limitation and the value shall be reported as <4 millirem/year. If the gross beta particle activity minus the naturally occurring Potassium-40 beta particle exceeds the screening level, the Permittees must have the samples further analyzed for the individual nuclides. The calculation for the sum of the fractions is presented below.

The maximum contaminant level (MCL) for gross beta/photon is equal to 4 millirem per year. A millirem is a dose of energy to the body. US EPA regulates 179 man-made nuclides, and each of them has a concentration of radiation measured in pCi/L, which produces the 4 millirem dose. These concentrations are listed on the table, Derived Concentrations of (pCi/L) of Beta and Photon Emitters in Drinking Water, which shall be used to determine compliance.

Derived Concentrations (pCi/l) of Beta and Photon Emitters in Drinking Water

Yielding a Dose of 4 mrem/yr to the Total Body or to any Critical Organ as defined in NBS Handbook 69

Nuclide	pCi/l	Nuclide	pCi/l	Nuclide	pCi/l	Nuclide	pCi/l	Nuclide	pCi/l	Nuclide	pCi/l
H-3	20,000	Ni-65	300	Nb-95	300	Sb-124	60	Nd-147	200	Os-191	600
Be-7	6,000	Cu-64	900	Nb-97	3,000	Sb-125	300	Nd-149	900	Os-191m	9,000
C-14	2,000	Zn-65	300	Mo-99	600	Te-125m	600	Pm-147	600	Os-193	200
F-18	2,000	Zn-69	6,000	Tc-96	300	Te-127	900	Pm-149	100	Ir-190	600
Na-22	400	Zn-69m	200	Tc-96m	30,000	Te-127m	200	Sm-151	1,000	Ir-192	100
Na-24	600	Ga-72	100	Tc-97	6,000	Te-129	2,000	Sm-153	200	Ir-194	90
Si-31	3,000	Ge-71	6,000	Tc-97m	1,000	Te-129m	90	Eu-152	200	Pt-191	300
P-32	30	As-73	1,000	Tc-99	900	Te-131m	200	Eu-154	60	Pt-193	3,000
S-35 inorg	500	As-74	100	Tc-99m	20,000	Te-132	90	Eu-155	600	Pt-193m	3,000
Cl-36	700	As-76	60	Ru-97	1,000	I-126	3	Gd-153	600	Pt-197	300
Cl-38	1,000	As-77	200	Ru-103	200	I-129	1	Gd-159	200	Pt-197m	3,000
K-42	900	Se-75	900	Ru-105	200	I-131	3	Tb-160	100	Au-196	600
Ca-45	10	Br-82	100	Ru-106	30	I-132	90	Dy-165	1,000	Au-198	100
Ca-47	80	Rb-86	600	Rh-103m	30,000	I-133	10	Dy-166	100	Au-199	600
Sc-46	100	Rb-87	300	Rh-105	300	I-134	100	Ho-166	90	Hg-197	900
Sc-47	300	Sr-85 m	20,000	Pd-103	900	I-135	30	Er-169	300	Hg-197m	600
Sc-48	80	Sr-85	900	Pd-109	300	Cs-131	20,000	Er-171	300	Hg-203	60
V-48	90	Sr-89	20	Ag-105	300	Cs-134	80	Tm-170	100	Tl-200	1,000
Cr-51	6,000	Sr-90	8	Ag-110m	90	Cs-134m	20,000	Tm-171	1,000	Tl-201	900
Mn-52	90	Sr-91	200	Ag-111	100	Cs-135	900	Yb-175	300	Tl-202	300
Mn-54	300	Sr-92	200	Cd-109	600	Cs-136	800	Lu-177	300	Tl-204	300
Mn-56	300	Y-90	60	Cd-115	90	Cs-137	200	Hf-181	200	Pb-203	1,000
Fe-55	2,000	Y-91	90	Cd-115m	90	Ba-131	600	Ta-182	100	Bi-206	100
Fe-59	200	Y-91m	9,000	In-113m	3,000	Ba-140	90	W-181	1,000	Bi-207	200
Co-57	1,000	Y-92	200	In-114m	60	La-140	60	W-185	300	Pa-230	600
Co-58	300	Y-93	90	In-115	300	Ce-141	300	W-187	200	Pa-233	300
Co-58m	9000	Zr-93	2,000	In-115m	1,000	Ce-143	100	Re-186	300	Np-239	300
Co-60	100	Zr-95	200	Sn-113	300	Ce-144	30	Re-187	9,000	Pu-241	300
Ni-59	300	Zr-97	60	Sn-125	60	Pr-142	90	Re-188	200	Bk-249	2,000
Ni-63	50	Nb-93m	1,000	Sb-122	90	Pr-143	100	Os-185	200		

The sum of the fraction method is used because each photon emitter targets a different organ of the body, which results in a different magnitude of risk. The sum of the beta and photon emitters shall not exceed 4 millirem/year (40 C.F.R. section 141.66(d)(2)).

Each nuclide has a different concentration that produces 4 millirem dose because different radionuclides have different energy levels. Some nuclides need to be in a higher concentration to give the same 4 millirem dose.

The laboratory shall measure the nuclide concentration in the water and compare this result to the concentration allowed for that nuclide (see table below). The comparison results in a fraction. This is shown in calculation below:

Fraction of the Maximum 4 millirem/year exposure limit

$$= \frac{pCi/L\ found\ in\ sample\ (from\ laboratory\ results)}{pCi/L\ equivalent\ from\ 4\ millirem\ of\ exposure\ (from\ conversion\ table)}$$

Each fraction must then be converted to a dose equivalent of 4 millirem/year by multiplying the fraction by 4. The results for each emitter must be summed to determine compliance.

A sample calculation is presented in the table below:

	X	Y	X/Y	4(X/Y)
Emitter	**Lab Analysis (pCi/L)**	**Conversion from table (pCi / 4 millirem)**	**Calculate Fraction**	**Calculate Total (millirem)**
Cs-134	5,023	20,000	0.25115	1.0
Cs-137	30	200	0.150	0.6
Sr-90	4	8	0.5	2.0
I-131	2	3	0.7	2.8
Sum of the Fractions	---	---	1.60115	6.4

This example system would be considered in violation of the gross beta/photon effluent limitation if the calculated total millirem = 6.4 millirem, which means that the sum of the annual dose equivalent to the total body, or to any internal organ, exceeds 4 millirem/year.

ATTACHMENT A – DEFINITIONS

Added Tracer
A non-reactive substance, with measurable characteristics distinctly different from the receiving groundwater, intentionally added to the water applied at a GRRP for the purpose of being a tracer such that the tracer can be readily identified in the groundwater downgradient of the GRRP to determine the underground retention time of the applied water.

Advanced Treated Recycled Water
In this permit, it refers to the treated recycled water produced by the Advanced Water Treatment Facility (AWTF).

Arithmetic Mean (μ)
Also called the average, is the sum of measured values divided by the number of samples.

Average Monthly Effluent Limitation (AMEL)
The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during the calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)
The highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Composite Sample, 24-hour
An aggregate sample derived from no fewer than eight samples collected at equal time intervals or collected proportional to the flow rate over the compositing period. The aggregate sample shall reflect the average source water quality covering the composite 24-hour sample period.

Daily Discharge
Daily Discharge is defined as either: (1) the total mass of a constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ)
DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

Diluent Water
"Diluent Water" means water, meeting the diluent requirements of chapter 3, division 4 of Title 22 of the California Code of Regulations, used for reducing the recycled municipal wastewater contribution over time.

Disinfected Secondary-2.2
Recycled water that has been oxidized and disinfected so that the median concentration of total coliform bacteria in the disinfected effluent does not exceed a most probable number (MPN) of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed, and the number of coliform organisms does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30-day period.

Disinfected Tertiary Recycled Water
A filtered and subsequently disinfected wastewater that meets the following criteria:

(a) The filtered wastewater which has been disinfected by either:

  (1) A chlorine disinfection process following filtration that provides a contact time (CT, the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow; or

  (2) 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 purposes of the demonstration.

(b) The median concentration of total coliform bacteria measured in the disinfected effluent does not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30-day period. No sample exceeds an MPN of 240 total coliform bacteria per 100 milliliters.

Estimated Chemical Concentration
The estimated chemical concentration results from the confirmed detection of the substance by the analytical method below the ML value.

Filtered Wastewater
An oxidized wastewater that meets the criteria in subsection (a) or (b):

(a) Has been coagulated and passed through natural undisturbed soils or a bed of filter media pursuant to the following:

(1) At a rate that does not exceed 5 gpm per square foot of surface area in mono, dual or mixed media gravity, upflow or pressure filtration systems, or does not exceed 2 gpm per square foot of surface area in travelling automatic backwash filters; and

(2) So that the turbidity of the filtered wastewater does not exceed any of the following:

i An average 2 NTU within a 24-hour period;

ii 5 NTU more than 5 percent of the time within a 24-hour period; and

iii 10 NTU at any time.

(b) Has been passed through a microfiltration, ultrafiltration, nanofiltration, or reverse osmosis membrane so that the turbidity of the filtered wastewater does not exceed any of the following:

(1) 0.2 NTU more than 5 percent of the time within a 24-hour period; and

(2) 0.5 NTU at any time.

F-specific bacteriophage MS-2
A strain of a specific type of virus that infects coliform bacteria that is traceable to the American Type Culture Collection (ATCC 15597B1) and is grown on lawns of *E. Coli* (ATCC 15597).

Grab Sample
An individual sample collected during a period not to exceed 15 minutes. Grab samples shall be collected during normal peak loading conditions for the parameter of interest, which may or may not occur during hydraulic peaks.

Groundwater Replenishment Reuse Project or GRRP
A project involving the planned use of recycled municipal wastewater that is operated for the purpose of replenishing a groundwater basin designated in the Water Quality Control Plan (as defined in Water Code section 13050(j)) for use as a source of municipal and domestic water supply.

Haloacetic Acids, Total
The sum of monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid.

Indicator Compound

An individual chemical in a GRRP's municipal wastewater that represents the physical, chemical, and biodegradable characteristics of a specific family of trace organic chemicals; is present in concentrations that provide information relative to the environmental fate and transport of those chemicals; may be used to monitor the efficiency of trace organic compounds removal by treatment processes; and provides an indication of treatment process failure.

Instantaneous Maximum Effluent Limitation
The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation
The lowest allowable value for any single sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Intrinsic Tracer
A substance or attribute present in the recharge water at levels different from the receiving groundwater such that the substance in the water applied at the GRRP can be distinctly and sufficiently detected in the groundwater downgradient of the GRRP to determine the underground retention time of the water.

Maximum Contaminant Level (MCL)
The maximum permissible concentration of a contaminant established pursuant to section 116275(c)(1) and (d) of the Health and Safety Code or established by the United States Environmental Protection Agency (U.S. EPA).

Maximum Daily Effluent Limitation (MDEL)
The highest allowable daily discharge of a pollutant over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

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

Method Detection Limit
MDL is the minimum concentration of a substance that can be reported with 99 percent confidence that the measured concentration is distinguishable from method blank results.

Minimum Level (ML)
The concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Minimum Reporting Level (MRL)
The smallest measured concentration of a substance that can be reliably measured by using a given analytical method. It is the “less-than” value reported when an analyte either is not detected or is detected at a concentration less than the MRL.

Nitrogen, Total
The sum of ammonia, nitrite, nitrate, and organic nitrogen-containing compounds, expressed as nitrogen.

Not Detected (ND)
Sample results which are less than the laboratory’s MDL.

Notification Level (NL)
The concentration of a contaminant established by the Department pursuant to section 116455 of the Health and Safety Code.

NTU (Nephelometric Turbidity Unit)
A measurement of turbidity as determined by the ratio of the intensity of light scattered by the sample to the intensity of incident light scattered by the sample to the intensity of incident light as measured by method 2130 B. in Standard Methods for the Examination of Water and Wastewater, 20th ed.; Eaton, A.D., Clesceri, L.S., and Greenberg, A.E., Eds; American Public Health Association: Washington, DC, 1995; p.2-8.

Oxidized Wastewater
Wastewater in which the organic matter has been stabilized, is nonputrescible, and contains dissolved oxygen.

Polychlorinated Biphenyls (PCBs)
The sum of chlorinated biphenyls whose analytical characteristics resemble those of Arochlor-1016, Arochlor-1221, Arochlor-1232, Arochlor-1242, Arochlor-1248, Arochlor-1254, and Arochlor-1260.

Recharge Water
Recycled municipal wastewater, or the combination of recycled municipal wastewater and credited diluent water, which is utilized by a GRRP for groundwater replenishment.

Recycled Municipal Wastewater
Recycled water that is the effluent from the treatment of wastewater of municipal origin.

Recycled Municipal Wastewater Contribution or RWC
The fraction equal to the quantity of recycled municipal wastewater applied at the GRRP divided by the sum of the quantity of recycled municipal wastewater and credited diluent water.

Recycled Water
Water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur therefore considered a valuable resource. (Wat. Code § 13050(n).)

Running Annual Average
The arithmetic mean, calculated quarterly, of the monitoring results from the previous four consecutive quarters. If no sample was collected during a quarter or a result for a quarter is not available, only available data shall be used in the calculation of the running annual average.

Running Four-Week Average
The arithmetic mean, calculated weekly, of the monitoring results from the previous four consecutive weekly sample results.

Subsurface Application
The application of recharge water to a groundwater basin(s) by a means other than surface application.

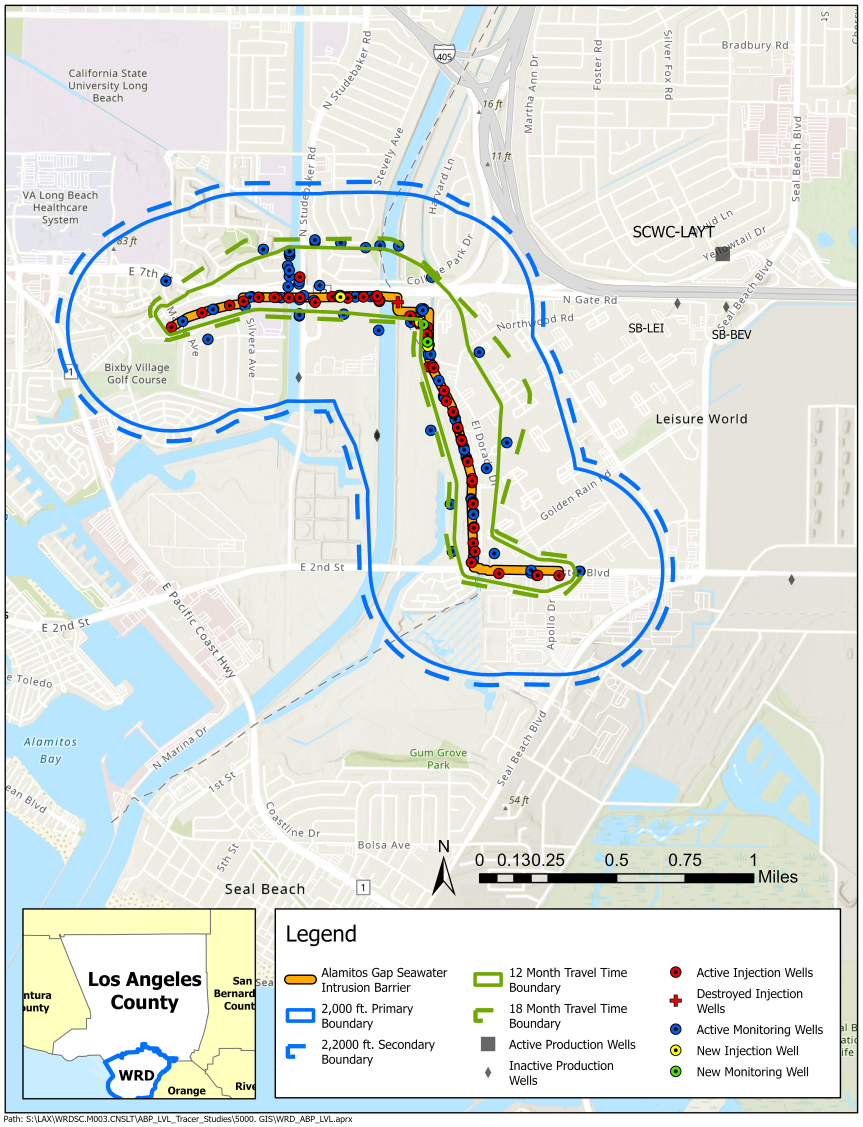
Surrogate Parameter
A measurable physical or chemical property that has been demonstrated to provide a direct correlation with the concentration of an indicator compound, can be used to monitor the efficiency of trace organic compounds removal by a treatment process, and/or provides an indication of a treatment process failure.

Total Organic Carbon (TOC)
The concentration of organic carbon present in water.

Trihalomethanes, Total
The sum of Bromodichloromethane, Bromoform, Chloroform, and Dibromochloromethane.

Use Area
An area of recycled water use with defined boundaries. Agricultural use areas may contain one or more facilities (ditch, irrigated fields, pumping stations, etc.); use areas may also consist of an aggregate of small lots (e.g., residential/ industrial developments, roadway median irrigation, etc.).

ATTACHMENT B – ALAMITOS BARRIER PROJECT



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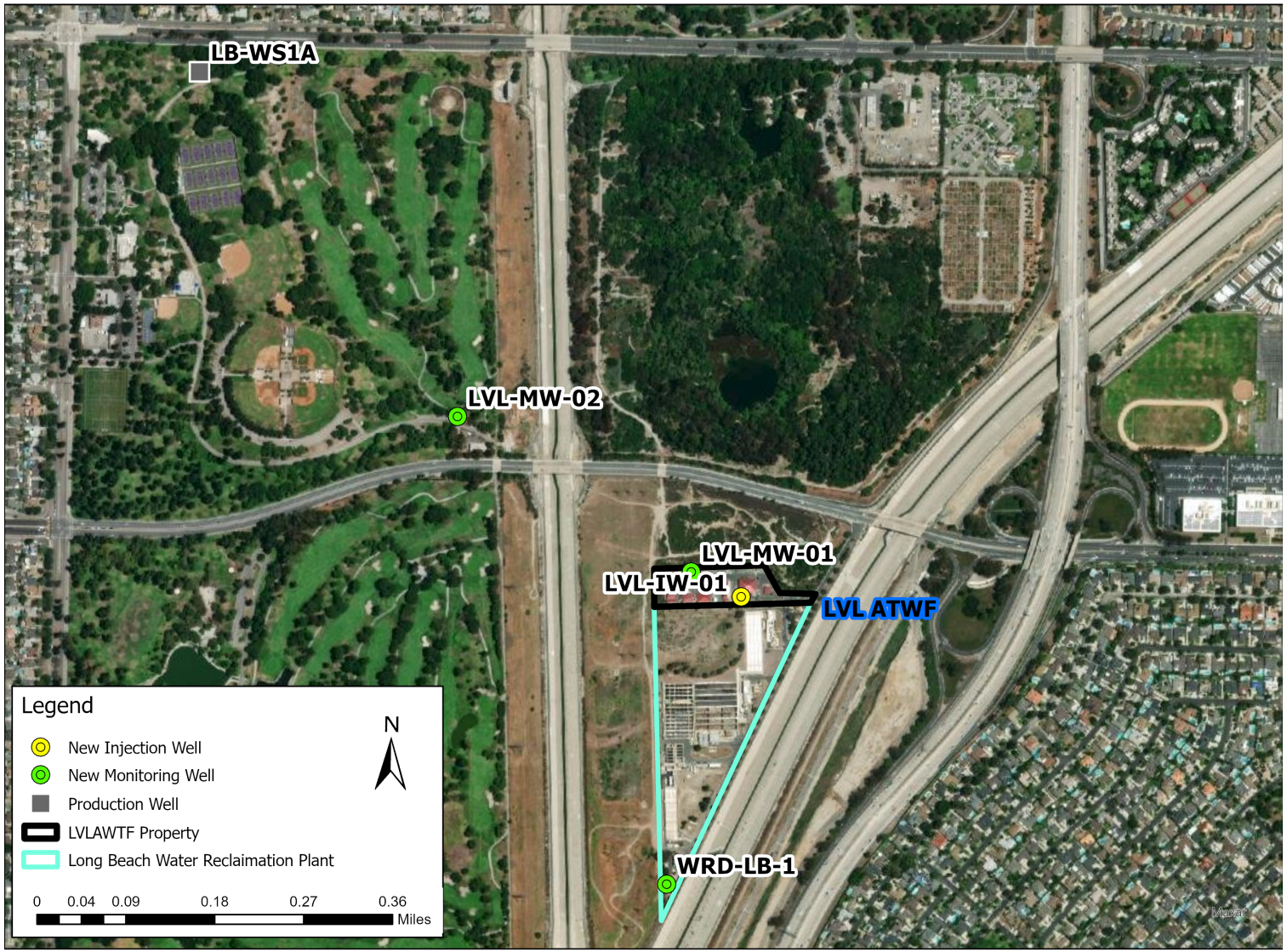
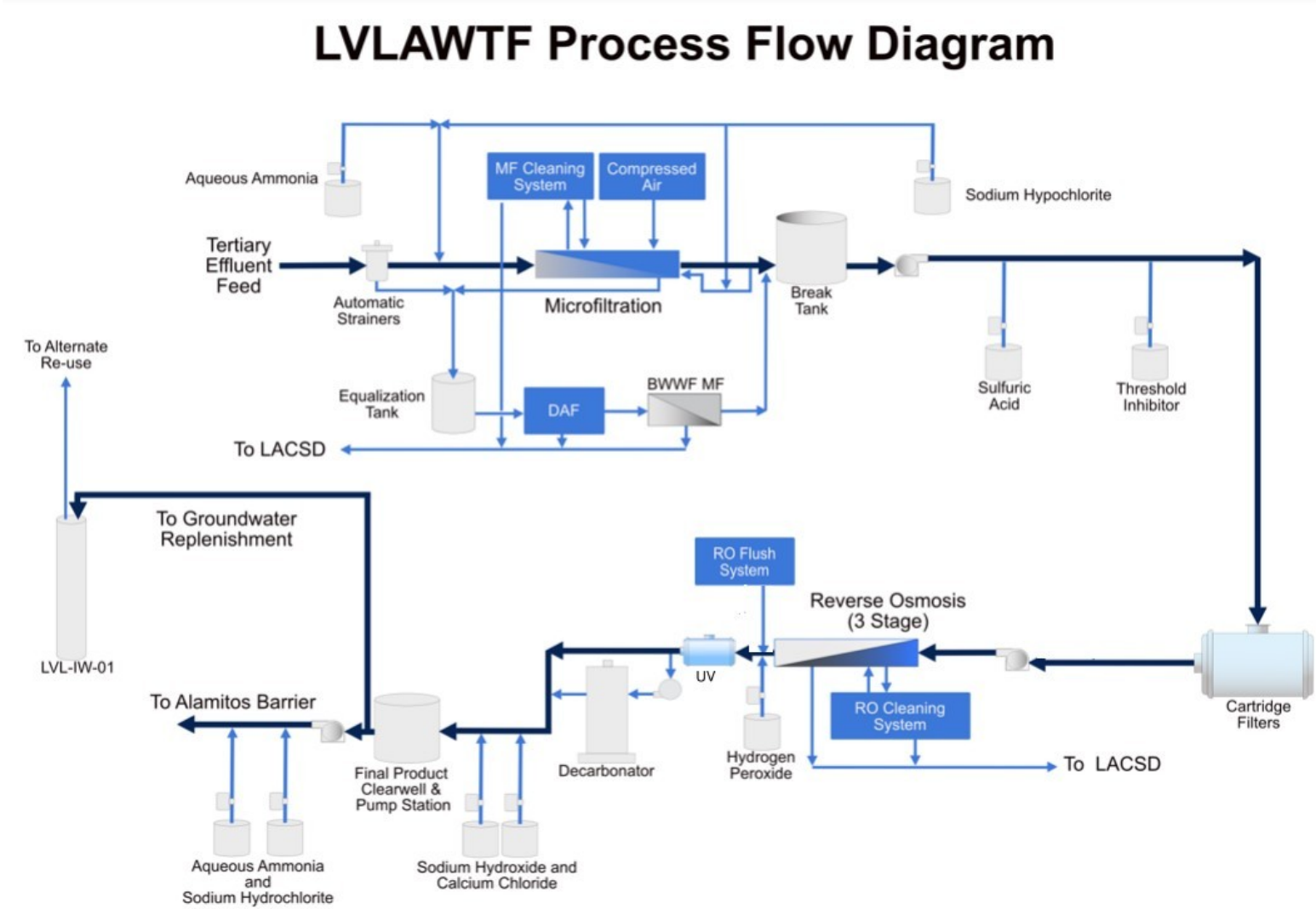
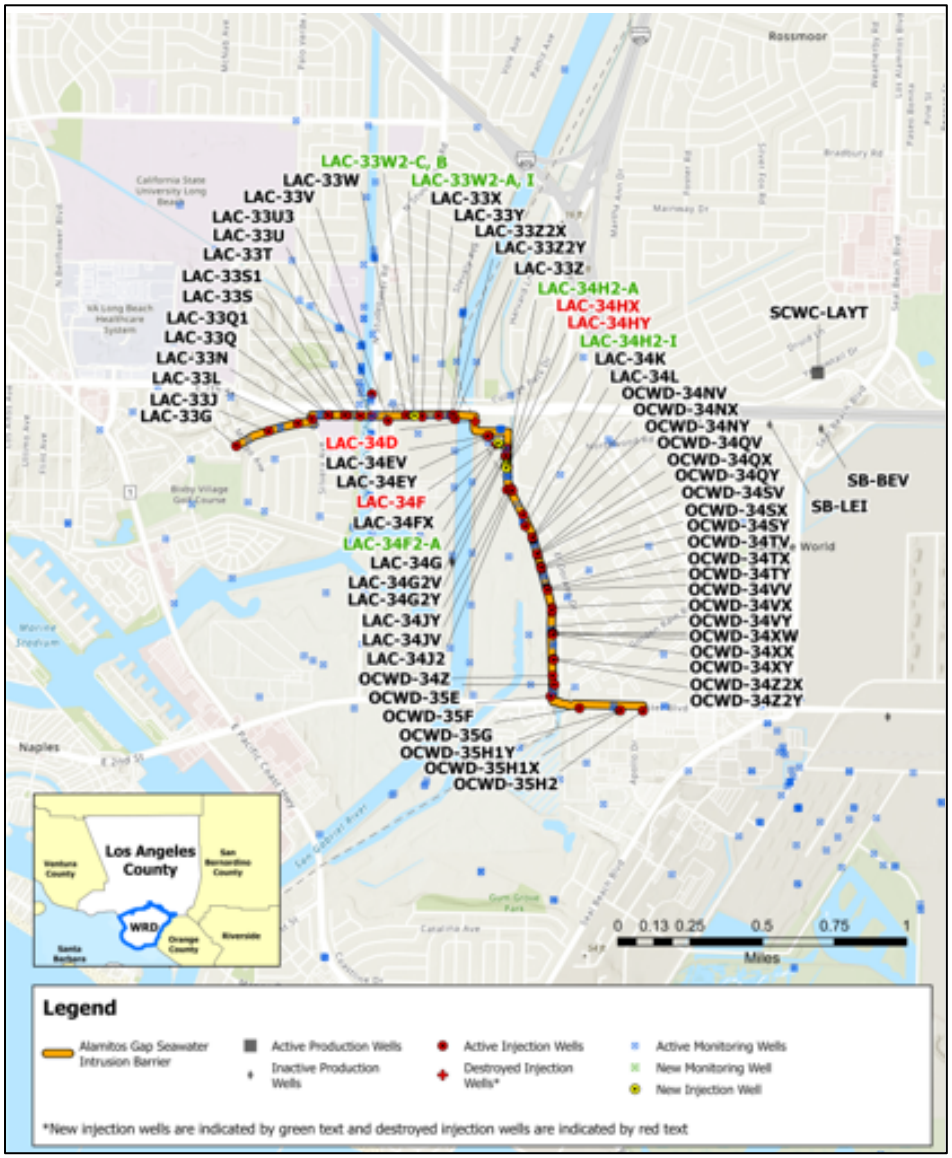
ATTACHMENT C1 – LEO VANDER LANS ADVANCED WATER TREATMENT FACILITY



ATTACHMENT C2 – ATWF PROCESS FLOW DIAGRAM

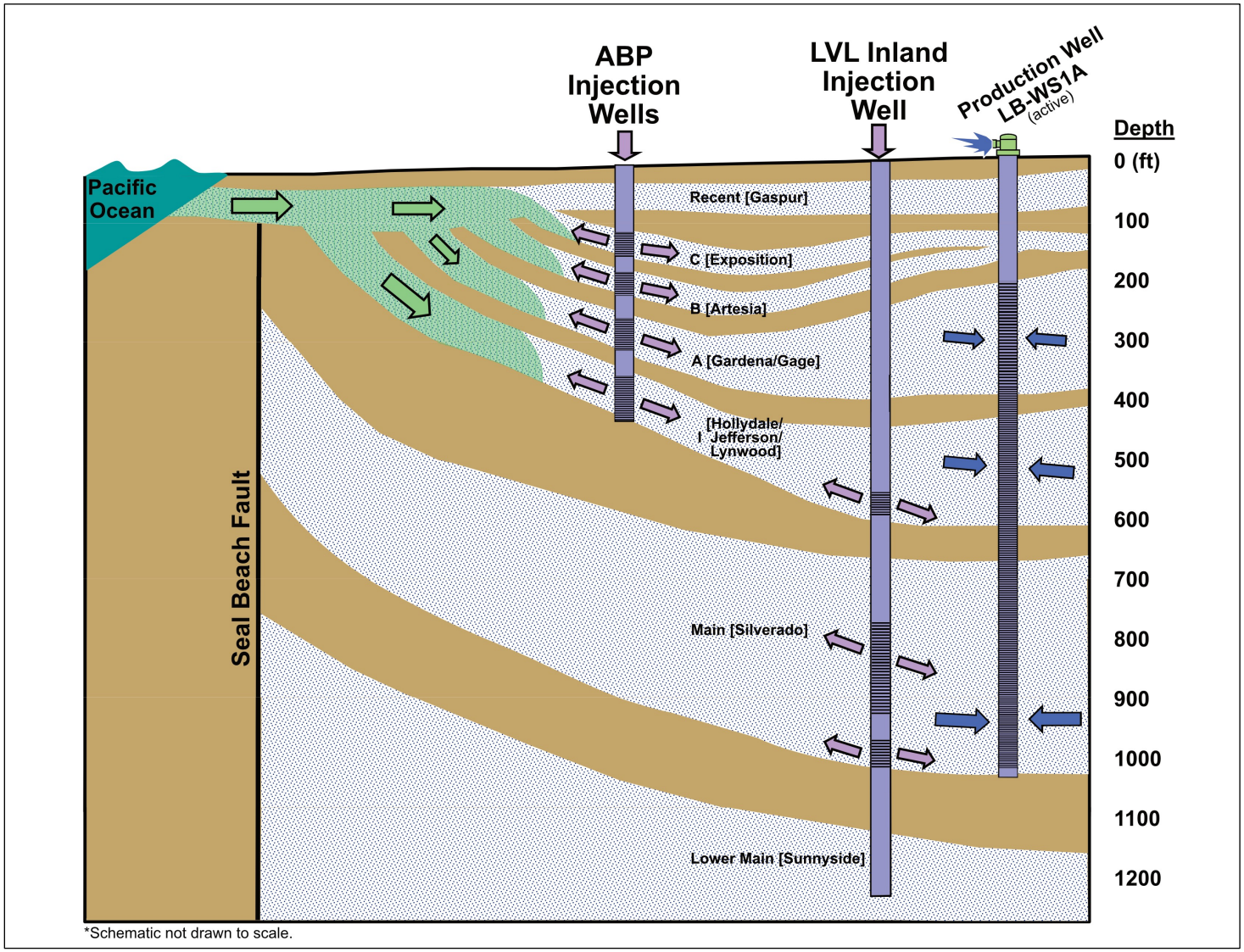


ATTACHMENT C3 – RECYCLED WATER DISTRIBUTION AREA



ATTACHMENT C4 – GROUNDWATER BASINS

ATTACHMENT C5 – INJECTION ZONES



ATTACHMENT D - STANDARD PROVISIONS

STANDARD PROVISIONS APPLICABLE TO WASTE DISCHARGE REQUIREMENTS

1. Duty to Comply

The Permittee shall comply with all conditions of these waste discharge requirements. A responsible party has been designated in the Order for this project and is legally bound to maintain the monitoring program and permit. Violations may result in enforcement actions, including Los Angeles Water Board orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of these waste discharge requirements by the Los Angeles Water Board (Wat. Code §§ 13261, 13263, 13265, 13268, 13300, 13301, 13304, 13340, 13350). Failure to comply with any waste discharge requirement, monitoring and reporting requirement, or other order or prohibition issued, reissued, or amended by the Los Angeles Water Board or State Water Board is a violation of these waste discharge requirements and the Water Code, which can result in the imposition of civil liability. (Wat. Code § 13350, subd. (a)).

2. General Prohibition

Neither the treatment nor the discharge of waste shall create a pollution, contamination or nuisance, as defined by CWC section 13050. In addition, the discharge of waste classified as hazardous, as defined in 23 CCR section 2521(a), is also prohibited.

3. Availability

A copy of these waste discharge requirements shall be maintained at the discharge facility and be available at all times to operating personnel (Wat. Code § 13263).

4. Change in Ownership

The Permittee shall notify any succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded to the Los Angeles Water Board. The Permittee shall notify the Los Angeles Water Board, in writing, at least 60 days in advance of ownership change and provide a date on which the transfer of this Order's responsibility and coverage will go from the current discharger to the new discharger. The notification shall include an agreement between the parties to transfer responsibility for compliance with the Order. The agreement shall include an acknowledgement that the existing discharger is liable for violations up to the transfer date and that the new discharger is liable from the transfer date forward. The succeeding owner of operator shall submit a Report of Waste Discharge that requests an amendment to formally amend the Order to acknowledge the transfer.

5. Change in Discharge

In the event of a material change in the character, location, or volume of a discharge, the Permittee shall file with the Los Angeles Water Board a new Report of Waste Discharge (Wat. Code § 13260, subd. (c)). A material change includes, but is not limited to, the following:

5.1. Addition of a major industrial waste discharge to a discharge of essentially domestic sewage, or the addition of a new process or product by an industrial facility resulting in a change in the character of the waste.

5.2. Significant change in disposal method, e.g., change from a land disposal to a direct discharge to water, or change in the method of treatment which would significantly alter the characteristics of the waste.

5.3. Significant change in the disposal area, e.g., moving the discharge to another drainage area, to a different water body, or to a disposal area significantly removed from the original area potentially causing different water quality or nuisance problems.

5.4. Increase in flow beyond that specified in the waste discharge requirements.

5.5. Increase in area or depth to be used for solid waste disposal beyond that specified in the waste discharge requirements (23 CCR section 2210).

6. Revision

These waste discharge requirements are subject to review and revision by the Regional Water Board (Wat. Code § 13263).

7. Notification

Where the Permittee becomes aware that it failed to submit any relevant facts in a Report of Waste Discharge or submitted incorrect information in a Report of Waste Discharge or in any report to the Regional Water Board, it shall promptly submit such facts or information (Wat. Code §§ 13260 and 13267).

8. Vested Rights

This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, do not protect the Permittee from his liability under Federal, State or local laws, nor do they create a vested right for the Permittee to continue the waste discharge (Wat. Code § 13263 subd. (g)).

9. Severability

Provisions of these waste discharge requirements are severable. If any provision of these requirements is found invalid, the remainder of these requirements shall not be affected (Wat. Code § 921).

10. Operation and Maintenance

The Permittee shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary

to achieve compliance with the conditions of this Order (Wat. Code § 13263, subd. (f)).

11. Hazardous Releases

Except for a discharge which is in compliance with these waste discharge requirements, any person who, without regard to intent or negligence, causes or permits any hazardous substance or sewage to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) that person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State toxic disaster contingency plan adopted pursuant to Article 3.7 (commencing with section 8574.16) of the Government Code, and immediately notify the State Water Board or the appropriate Regional Water Board of the discharge. This provision does not require reporting of any discharge of less than a reportable quantity as provided for under subdivisions (f) and (g) of CWC section 13271 unless the discharge is in violation of a prohibition in the applicable Water Quality Control Plan (Wat. Code § 13271, subd. (a)).

12. Oil or Petroleum Releases

Except for a discharge which is in compliance with these waste discharge requirements, any person who without regard to intent or negligence, causes or permits any oil or petroleum product to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any water of the State, shall, as soon as (a) such person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the Office of Emergency Services of the discharge in accordance with the spill reporting provision of the State oil spill contingency plan adopted pursuant to Article 3.5 (commencing with section 8574.1) of the Chapter 7, Division 1, of Title 2 of the Government Code. This provision does not require reporting of any discharge of less than 42 gallons unless the discharge is also required to be reported pursuant to Section 311 of the Clean Water Act or the discharge is in violation of a prohibition in the applicable Water Quality Control Plan (Wat. Code § 13272).

13. Entry and Inspection

The Permittee shall allow the Los Angeles Water Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

13.1. Enter upon the Permittee's processes where a regulated facility or activity is located or conducted, or where records shall be kept under the conditions of this Order;

13.2. Have access to and copy at reasonable times, any records that shall be kept under the conditions of this Order;

13.3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and

13.4. Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order, or as otherwise authorized by the California Water Code, any substances or parameters at any location (Wat. Code § 13267).

13.5. Except for material determined to be confidential in accordance with applicable law, all reports prepared in accordance with the terms of this Order shall be available for public inspection at the Los Angeles Water Board office. Data on waste discharges, water quality, geology, and hydrogeology shall not be considered confidential.

14. Monitoring Program and Devices

The Permittee shall furnish, under penalty of perjury, technical monitoring program reports; such reports shall be submitted in accordance with specifications prepared by the Executive Officer, which specifications are subject to periodic revisions as may be warranted (Wat. Code § 13267).

All monitoring instruments and devices used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices. Annually, the Permittee shall submit to the Executive Officer a written statement, signed by a registered professional engineer, certifying that all flow measurement devices have been calibrated and will reliably achieve the accuracy required.

The analysis of any material required pursuant to Division 7 of the Water Code shall be performed by a laboratory that has accreditation or certification pursuant to Article 3 (commencing with section 100825) of Chapter 4, Part 1, Division 101 of the Health and Safety Code. However, this requirement does not apply to field tests, such as tests of color, odor, turbidity, pH, temperature, dissolved oxygen, conductivity, and disinfectant residual chlorine (Wat. Code § 13176).

Unless otherwise permitted by the Los Angeles Water Board Executive Officer, all analyses shall be conducted at an accredited laboratory certified under the Environmental Laboratory Accreditation Program (ELAP) for such analyses by the State Water Resources Control Board, Division of Drinking Water. All analyses shall be required to be conducted in accordance with the latest edition of “Guidelines Establishing Test Procedures for Analysis of Pollutants” (40 C.F.R. section 136) promulgated by the U.S. EPA (23 CCR section 2230). The Quality Assurance-Quality Control Program must conform with the U.S. EPA guidelines, “Laboratory Documentation Requirements for Data Validation,” August 2001, USEPA Region 9) or procedures approved by the Los Angeles Water Board.

All quality assurance and quality control (QA/QC) analyses must be run on the same dates when samples were actually analyzed. All QA/QC data shall be reported,

along with the sample results to which they apply, including the method, equipment, analytical detection and quantification limits, percent recovery, and an explanation for any recovery that falls outside the QC limits, the results of the method and equipment blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recoveries. In cases where contaminants are detected in QA/QC samples (e.g. field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.

The Permittee shall make all QA/QC data available for inspection by Los Angeles Water Board staff and submit the QA/QC documentation with its respective monitoring report. Proper chain of custody procedures must be followed, and a copy of that documentation shall be submitted with the monitoring report.

15. Treatment Failure

In an enforcement action, it shall not be a defense for the Permittee that it would have been necessary to halt or to reduce the permitted activity in order to maintain compliance with this Order. Upon reduction, loss, or failure of the treatment facility, the Permittee shall, to the extent necessary to maintain compliance with this Order, control production or all discharges, or both, until the facility is restored, or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of the treatment facility fails, is reduced, or is lost (Wat. Code § 13263, subd. (f)).

16. Discharge to Navigable Waters

Any person discharging or proposing to discharge to navigable waters of the United States within the jurisdiction of this state or a person who discharges dredged or fill material or proposes to discharge dredged or fill material into navigable waters of the United States within jurisdiction of this state, shall file a report of waste discharge in compliance with the procedures set forth in CWC section 13260 (Wat. Code § 13376).

17. Endangerment to Health and Environment

The Permittee shall report any noncompliance which may endanger health or the environment. Any such information shall be provided verbally to the Executive Officer within 24 hours from the time the Permittee becomes aware of the circumstances. A written submission shall also be provided within five days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Executive Officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours. The following occurrence(s) shall be reported to the Executive Officer within 24 hours:

17.1. Any bypass from any portion of the treatment facility;

17.2. Any discharge of treated or untreated wastewater resulting from sewer line breaks, obstruction, surcharge or any other circumstances; and,

17.3. Any treatment plant upset which causes the effluent limitation of this order to be exceeded (Wat. Code §§ 13263 and 13267).

18. Maintenance of Records

The Permittee shall retain records of all monitoring information including all calibration and maintenance records, all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained for a minimum of three years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Los Angeles Water Board Executive Officer.

Records of monitoring information shall include:

18.1. The date, exact place, and time of sampling or measurements;

18.2. The individual(s) who performed the sampling or measurements;

18.3. The date(s) analyses were performed;

18.4. The individual(s) who performed the analyses;

18.5. The analytical techniques or method used; and

18.6. The results of such analyses.

19. Signatory Requirement

19.1. All application reports or information to be submitted to the Executive Officer shall be signed and certified as follows:

19.1.1. For a corporation – by a principle executive officer or at least the level of vice president.

19.1.2. For a partnership or sole proprietorship – by a general partner or the proprietor, respectively.

19.1.3. For a municipality, state, federal or other public agency – by either a principal executive officer or ranking elected official.

19.2. A duly authorized representative of a person designated in paragraph (a) of this provision may sign documents if:

19.2.1. The authorization is made in writing by a person described in paragraph (a) of this provision.

19.2.2. The authorization specifies either an individual or position having responsibility for the overall operation of the regulated facility or activity.

19.2.3. The written authorization is submitted to the Executive Officer.

Any person signing a document under this section shall make the following certification:

> "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. [Wat. Code §§ 13263, 13267, and 13268]."

20. Operator Certification

Supervisors and operators of water recycling treatment plants shall possess a certificate of appropriate grade in accordance with 23 CCR section 3680. State Water Boards may accept experience in lieu of qualification training (23 CCR § 3680). In lieu of a properly certified wastewater treatment plant operator, the State Water Board may approve use of a water treatment plant operator of appropriate grade certified by the State Department of Public Health where reclamation is involved (23 CCR § 3670.1).

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP) CI-8956

CONTENTS

TABLES

ATTACHMENT E - MONITORING AND REPORTING PROGRAM (MRP) CI-8956

This Monitoring and Reporting Program is issued by the California Regional Water Quality Control Board, Los Angeles Region (Los Angeles Water Board) pursuant to California Water Code section13267(b)(1), which authorizes the Los Angeles Water Board to require the submittal of technical and monitoring reports. It is also issued pursuant to the State Water Board's Recycled Water Policy and Title 22 of the California Code of Regulations (22 CCR) section 60320.200 et seq., which requires monitoring and reporting for recycled water discharges. The reports required by this MRP are necessary to ensure compliance with Waste Discharge Requirements (WDRs) and Water Reclamation Requirements (WRRs) Order No. R4-2025-0273 for the Leo Vander Lans Advanced Water Treatment Facility (AWTF), Alamitos Barrier Project and Inland Injection Project. The Los Angeles County Department of Public Works (LACDPW) co-owns and operates the Alamitos Barrier Project, and the Water Replenishment District (WRD) owns and operates the AWTF and the advanced treated recycled water onsite injection system, and is, therefore, jointly responsible for compliance with this Order. Collectively, the LACDPW and the WRD are the Permittees. The WRD shall implement this MRP on the effective date of this Order. Failure to comply with this MRP could result in the imposition of monetary civil liability pursuant to Division 7 of the California Water Code and other applicable laws.

1. GENERAL MONITORING AND REPORTING REQUIREMENTS

1.1. The Permittees shall monitor the following according to the manner and frequency specified in this MRP:

1.1.1. Influent to the AWTF

1.1.2. Feedwater to RO or RO/UVAOP for Recycled Water Policy CECs and surrogates

1.1.3. Advanced treated recycled water used for groundwater recharge

1.1.4. Receiving groundwater in monitoring wells associated to the Alamitos Barrier Project (34LS (503BF and 503BE), 34HJ (502BX, 502BW), 34L10 (502AK, 502AL, 502AM, 502AN))

1.1.5. Receiving groundwater in monitoring wells associated with the Inland Injection Project (LVL-MW-01 and LVL-MW-02)

1.2. Monitoring reports shall include, but are not limited to, the following:

1.2.1. Analytical results.

1.2.2. Location of each sampling station where representative samples are obtained.

1.2.3. Analytical test methods used and the corresponding minimum reporting levels (MRLs).

1.2.4. Name(s) of the laboratory that conducted the analyses.

1.2.5. A summary of quality assurance and control (QA/QC) measures, including documentation of chain of custody.

1.2.6. Applicable Maximum Contaminant Levels (MCLs), Notification Levels (NLs), response levels, DDW conditions or advanced treated recycled water discharge limits.

1.2.7. A summary of noncompliance during the monitoring period.

1.3. The Permittee shall have written sampling protocols in place. For groundwater monitoring, the sampling protocols shall outline the methods and procedures used for measuring water levels; purging wells; collecting samples; decontaminating equipment; containing, preserving, and shipping samples, and maintaining appropriate documentation. The sampling protocols shall also include the procedures for handling, storing, testing, and disposing of purge and decontamination waters generated from the sampling events.

1.4. The Permittees shall notify the manager of the Watershed Regulatory Section at the Los Angeles Water Board and DDW by telephone at (213) 576-6616 and Christina Humphreys at (818) 551-2065 or by electronic means (**losangeles@waterboards.ca.gov** and **ddwrecycledwater@waterboards.ca.gov** and **christina.humphreys@waterboards.ca.gov**) within 24 hours of knowledge of any violations of this Order that may endanger human health or the environment. Written confirmation shall be submitted within 5 working days from the date of notification. The report shall include, but shall not be limited to the following information:

1.4.1. The nature and extent of the violation.

1.4.2. The date and time when the violation started; when compliance was achieved; and, when distribution of advanced treated recycled water was suspended and restored, as applicable.

1.4.3. The duration of the violation.

1.4.4. The cause(s) of the violation.

1.4.5. Any corrective and/or remedial actions that have been taken and/or will be taken with a time schedule for implementation to prevent future violations.

1.4.6. Any impact of the violation.

1.5. Samples shall be analyzed using analytical methods described in Section 141 of Title 40 of the Code of Federal Regulations (40 C.F.R. section 141); or where no methods are specified for a given pollutant, by methods approved by DDW, the Los Angeles Water Board and/or the State Water Board, the Permittees shall select the analytical methods that provide Minimum Reporting Levels (MRLs) lower than the limits prescribed in this Order or as low as possible that will provide reliable data.

1.6. Analyses for chemicals other than those with primary MCLs and secondary MCLs, the Permittees shall select methods based on the following approach:

1.6.1. Use the drinking water methods or wastewater methods sufficient to evaluate all water quality objectives and protect all beneficial uses.

1.6.2. Use DDW-recommended methods for unregulated chemicals, if available.

1.6.3. If there is no DDW-recommended drinking water method for a chemical, and more than a single United States Environmental Protection Agency (U.S. EPA)-approved method is available, use the most sensitive of the U.S. EPA-approved method.

1.6.4. If there is no U.S. EPA-approved method for a chemical, and more than one method is available from the scientific literature and commercial laboratory, after consultation with DDW, use the most sensitive method.

1.6.5. If no approved method is available for a specific chemical, the Permittees' laboratory may develop or use its own methods and should provide the analytical methods to DDW for review. Those methods may be used until DDW-recommended or U.S. EPA-approved methods are available.

1.6.6. If the only method available for a chemical is for wastewater analysis (e.g. a chemical listed as a priority pollutant only), that chemical will be sampled and analyzed using wastewater methods specified in 40 C.F.R. section 136. This approach will be used until a DDW-recommended or U.S. EPA-approved drinking water method is available.

1.6.7. For CECs subject to the Recycled Water Policy, monitoring of advanced treated recycled water prior to RO/AOP shall use analytical methods selected to achieve the Reporting Limits included in the Recycled Water Policy. Any modifications to the published or certified methods shall be reviewed by DDW and subsequently submitted to the Los Angeles Water Board in an updated quality assurance plan.

1.7. The Permittees shall instruct its laboratories to establish calibration standards so that the MRLs (or equivalent if there is a different treatment of samples relative to calibration standards) are the lowest calibration standard. At no time shall the analytical data be derived from extrapolation beyond the lowest point of the calibration curve.

1.8. Pursuant to 22 CCR section 60320.204, analyses for contaminants having primary or secondary MCLs shall be performed by laboratories approved to perform such analyses by DDW using DDW-approved drinking water methods.

1.9. For regulated constituents, the laboratory conducting the analyses shall be certified by ELAP or approved by DDW or the Los Angeles Water Board.

1.10. Upon request by the Permittees, the Los Angeles Water Board, in consultation with DDW and the State Water Board Quality Assurance Program, may establish MRLs, in any of the following situations:

1.10.1. When the pollutant has no established method under 40 C.F.R. section 141.

1.10.2. When the method under 40 C.F.R. section 141 for the pollutant has an MRL higher than the limit specified in this Order.

1.10.3. When the Permittees agrees to use a test method that is more sensitive than those specified in 40 C.F.R. section 141.

1.11. Samples shall be analyzed within allowable holding time limits as specified in 40 C.F.R. section 141 or 40 C.F.R. section 136. All QA/QC analyses shall be conducted on the same dates the samples are analyzed. The Permittees shall retain the QA/QC documentation in its files for three years and make available for inspection and/or submit them when requested by the Los Angeles Water Board or DDW. Proper chain of custody procedures shall be followed, and a copy of this documentation shall be submitted with the quarterly report.

1.12. Each monitoring report shall include a separate section titled "Summary of Non-compliance" which discusses the compliance record and corrective actions taken or planned that may be needed to bring the discharge into full compliance with waste discharge requirements. This section shall clearly list all non-compliance as well as all excursions of advanced treated recycled water limitations.

1.13. For bacterial analyses, sample dilutions shall be performed so the expected range of values is bracketed (for example, with multiple tube fermentation method or membrane filtration method, 2 to 16,000 per 100 mL for total, fecal coliform, and *E. coli*, at a minimum, and 1 to 1,000 per 100 mL for *Enterococcus*). The detection methods used for each analysis shall be reported with the results of the analyses.

1.14. Quarterly monitoring shall be performed during the months of February, May, August, and November; semiannual monitoring shall be performed during the months of February and August; and annual monitoring shall be performed during the third quarter (July thru September) of each calendar year. Should there be instances when monitoring could not be conducted during the specified months, the Permittees shall conduct the monitoring as soon as possible and state in the monitoring report the reason monitoring could not be conducted during the specified month. Results of quarterly, semiannual and annual analyses shall be reported in the quarterly monitoring report following the analysis.

1.15. For CECs subject to the State Water Board's *Recycled Water Policy* as amended December 11, 2018, analytical methods for laboratory analyses of CECs shall be selected to achieve the Reporting Limits presented in Table 1 of Attachment A of the Recycled Water Policy. The analytical methods shall be based on methods approved by the U.S. EPA, the Standards Methods Committee, the American Society for Testing and Materials International, or other methods that have been validated and approved by the regional water boards or State Water Board for the analytes in the applicable matrix. Any modifications to the published or certified methods shall be included in an updated quality assurance project plan and submitted to the Los Angeles Water Board and State Water Board.

1.16. Advanced Treated Recycled Water Compliance with Primary MCLs

1.16.1. This section applies to advanced treated recycled water only and does not apply to pre-existing conditions such as from background groundwater samples prior to project startup. Compliance with primary MCLs is based on the results of accelerated monitoring.

1.16.2. For all pollutants except total nitrogen, nitrate, nitrite, nitrate plus nitrite, perchlorate, asbestos, lead, copper and any other pollutant for which DDW determines should not comply with this section, compliance shall be determined as follows:

1.16.2.1. If a result of the monitoring performed exceeds a contaminant's MCL or action level (for lead and copper), the Permittees shall collect another sample within 72 hours of notification of the result and then have it analyzed for the contaminant as confirmation.

1.16.2.2. If the average of the initial and confirmation sample exceeds the contaminant's MCL or action level, or the confirmation sample is not collected and analyzed pursuant to this subsection, the Permittees shall notify DDW and the Los Angeles Water Board within 24 hours and initiate weekly monitoring until four consecutive weekly results are below the contaminant's MCL or action level. If the running four-week average exceeds the contaminant's MCL or action level, the Permittees shall notify DDW and the Los Angeles Water Board within 24 hours and, if directed by DDW or the Los Angeles Water Board, suspend application of the advanced treated recycled water.

1.16.3. For perchlorate, asbestos, lead, copper and any other pollutant for which DDW determines does not need to comply with the requirements in section 1.16.2 or 1.19 of this MRP, compliance shall be determined as follows:

1.16.3.1. If a result of the monitoring performed exceeds a contaminant's MCL or action level (for lead and copper), the Permittees shall collect another sample within 72 hours of notification of the result and then have it analyzed for the contaminant as confirmation.

1.16.3.2. If the average of the initial and confirmation sample exceeds the contaminant's MCL, or a confirmation sample is not collected and analyzed pursuant to this subsection, the Permittees shall initiate weekly monitoring for the contaminant until the running four-week average no longer exceeds the contaminant's MCL.

1.16.3.3. If the running four-week average exceeds the contaminant's MCL, the Permittees shall describe the reason(s) for the exceedance and provide a schedule for completion of corrective actions in a report submitted to DDW and the Los Angeles Water Board no later than 45 days following the quarter in which the exceedance occurred.

1.16.3.4. If the running four-week average exceeds the contaminant's MCL for sixteen consecutive weeks, the Permittees shall notify DDW and the Los Angeles Water Board within 48 hours of knowledge of the exceedance and, if directed by DDW or the Los Angeles Water Board, suspend application of the advanced treated recycled water.

1.17. Advanced Treated Recycled Water Compliance with Secondary MCLs

If any single sample monitoring result from EFF-001 exceeds the contaminant's secondary MCL (or Secondary MCL Upper Limit), the Permittees shall initiate quarterly monitoring of the advanced treated recycled water for the

contaminant. In addition, if the running annual average of quarterly-averaged results from EFF-001 exceeds a contaminant's secondary MCL or Secondary MCL Upper Limit, the Permittees shall describe the reason(s) for the exceedance and any corrective actions taken. A report shall be submitted to the Los Angeles Water Board no later than 45 days following the quarter in which the exceedance occurred, with a copy concurrently provided to DDW. The annual monitoring may resume if the running annual average of quarterly results does not exceed a contaminant's secondary MCL or Secondary MCL Upper Limit.

1.18. Advanced Treated Recycled Water Procedures for Monitoring Pollutants with Notification Levels

1.18.1. During each quarter, the Permittees shall sample and analyze the advanced treated recycled water at EFF-001 for DDW-specified chemicals having notification levels (NLs). Refer to Table E-11 and Attachment G for the list of constituents and NLs, respectively.

1.18.2. If the result of the monitoring from EFF-001 exceeds an NL, within 72 hours of notification of the result, the Permittees shall collect another sample, and have it analyzed for the contaminant as confirmation. If the average of the initial and confirmation sample from EFF-001 exceeds the contaminant's NL, or a confirmation sample is not collected and analyzed, the Permittees shall initiate weekly monitoring for the contaminant until the running four-week average no longer exceeds the NL.

1.18.2.1. If the running four-week average exceeds the contaminant's NL, the Permittees shall describe the reason(s) for the exceedance and provide a schedule for completion of corrective actions in a report submitted to DDW and Los Angeles Water Board no later than 45 days following the quarter in which the exceedance occurred.

1.18.2.2. If the running four-week average exceeds the contaminant's NL for 16 consecutive weeks, the Permittees shall notify DDW and the Los Angeles Water Board within 48 hours of knowledge of the exceedance.

1.19. Advanced Treated Recycled Water Nitrogen Compounds Control

Compliance with the nitrogen compounds requirements of this Order shall be demonstrated in the advanced treated recycled water for subsurface injection at Monitoring Locations EFF-001.

1.19.1. Total nitrogen samples shall be analyzed within 72 hours and the results shall be reported to the Permittees within the same 72 hours if the result of any single sample exceeds 10 mg/L.

1.19.2. If the average of the results of two consecutive total nitrogen samples exceeds 10 mg/L, the Permittees shall:

1.19.2.1. Collect a confirmation sample and notify DDW and the Los Angeles Water Board within 48 hours of being notified by the laboratory.

1.19.2.2. Investigate the cause for the exceedances and take actions to reduce the total nitrogen concentrations to ensure continued or future exceedances do not occur.

1.19.2.3. Initiate additional monitoring for nitrogen compounds, including locations in the groundwater basin, to identify elevated concentrations and determine whether such elevated concentrations exceed or may lead to an exceedance of a nitrogen based MCL.

1.19.3. If the average of the results of four consecutive total nitrogen samples collected at EFF-001 exceeds 10 mg/L, the Permittees shall suspend the subsurface application of the advanced treated recycled water. Subsurface application shall not resume until corrective actions have been taken and at least two consecutive total nitrogen sampling results are less than 10 mg/L.

1.19.4. Following DDW and Los Angeles Water Board approval, the Permittees may initiate reduced monitoring frequencies for total nitrogen, nitrate, and nitrite. The Permittees may apply to DDW and the Los Angeles Water Board for reduced monitoring frequencies for total nitrogen, nitrate, and nitrite if, for the most recent 12 months:

1.19.4.1. The average of all results did not exceed 5 mg/L total nitrogen.

1.19.4.2. The average of a result and its confirmation sample (taken within 24 hours of receipt of the initial result) did not exceed 10 mg/L total nitrogen.

1.19.4.3. If the results of reduced monitoring exceed the total nitrogen concentration of 10 mg/L, the Permittees shall revert to the monitoring frequencies for total nitrogen prior to implementation of the reduced frequencies. Reduced frequency monitoring shall not resume unless the requirements in section 1.19.4.1 and 1.19.4.2 are met.

1.20. Advanced Treated Recycled Water Total Organic Carbon Monitoring

1.20.1. If the advanced treated recycled water limitation for total organic carbon (TOC) is exceeded based on a 20-week running average, the Permittees shall:

1.20.1.1. Immediately suspend subsurface application of the advanced treated recycled water until at least two consecutive results, three days apart, are less than the limit.

1.20.1.2. Notify DDW and the Los Angeles Water Board within seven days of suspending operations.

1.20.1.3. Within 60 days, submit a report to DDW and the Los Angeles Water Board describing the reasons for the exceedance and the corrective actions taken to avoid future exceedances. At a minimum the corrective actions shall include a reduction of the recycled water contribution sufficient to comply with the limit, if applicable.

1.20.2. If the advanced treated recycled water limitation for TOC is exceeded based on the average of the last four TOC results, the Permittees shall, within 60 days of being notified of the results, submit a report to DDW and the Los

Angeles Water Board describing the reasons for the exceedance and the corrective actions taken to avoid future exceedance.

1.20.3. Product water TOC results shall be reported as follows:

1.20.3.1. Weekly average

1.20.3.1.1. For continuous TOC analyzer results, the weekly average shall be the arithmetic mean of all readings collected within the calendar week;

1.20.3.1.2. For hourly grab samples, the weekly average shall be the arithmetic mean of all samples collected during the week.

1.20.3.2. The average of the last four (4) TOC results shall be the average of the last four weekly average results;

1.20.3.3. The 20-week running average of all TOC results shall be the arithmetic mean of all continuous analyzer results and hourly grab sample results collected within the past 20 calendar weeks.

1.21. Pathogenic Organisms

1.21.1. The Permittees shall design and operate the GRRP such that the recycled municipal wastewater used as recharge water for the GRRP receives treatment that achieves at least 12-log enteric virus reduction, 10-log *Giardia* cyst reduction, and 10-log *Cryptosporidium* oocyst reduction. The treatment train shall consist of at least three separate treatment processes. For each pathogen (i.e., virus, *Giardia* cyst, or *Cryptosporidium* oocyst), a separate treatment process may be credited with no more than 6-log reduction, with at least three processes each being credited with no less than 1.0-log reduction.

1.21.2. For each month retained underground as demonstrated in section 1.21.5, the recycled municipal wastewater or recharge water will be credited with virus reduction in accordance with Table 60320.208 in 22 CCR section 60320.208.

1.21.3. With the exception of log reduction credited pursuant to section 1.21.2, the Permittees shall validate each of the treatment processes used to meet the requirements in section 1.21.1 for their log reduction by submitting a report for DDW's review and approval, or by using a challenge test approved by DDW, that provides evidence of the treatment process's ability to reliably and consistently achieve the log reduction. The report and/or challenge test shall be prepared by an engineer registered in California with at least five years of experience, as a licensed engineer, in wastewater treatment and public water supply, including the evaluation of treatment processes for pathogen control. With the exception of underground retention time, the Permittees shall propose and include in its Operation Optimization Plan prepared pursuant to 22 CCR section 60320.222, on-going monitoring using the pathogenic microorganism of concern or a microbial, chemical, or physical surrogate parameter(s) that verifies the performance of each treatment process's ability to achieve its credited log reduction.

1.21.4. To demonstrate the retention time underground in section 1.21.2, a tracer study utilizing an added tracer shall be implemented under hydraulic conditions representative of normal GRRP operations. The retention time shall be the time representing the difference from when the water with the tracer is applied at the GRRP to when either; two percent (2%) of the initially introduced tracer concentration has reached the downgradient monitoring point, or ten percent (10%) of the peak tracer unit value observed at the downgradient monitoring point reached the monitoring point. The Permittees shall initiate the tracer study prior to the end of the third month of operation. With DDW approval, an intrinsic tracer may be used in lieu of an added tracer, with no more credit provided than the corresponding virus log reduction in column 2 of Table 60320.208 in 22 CCR section 60320.208.

1.21.5. For the purpose of siting a GRRP location during project planning and until the Permittees has met the requirements of section 1.21.4, for each month of retention time estimated using the method in column 1 of Table 60320.208 in 22 CCR section 60320.208, the recycled municipal wastewater or recharge water shall be credited with no more than the corresponding virus log reduction in column 2 of Table 60320.208 in 22 CCR section 60320.208.

1.21.6. Within 24 hours of becoming aware of an exceedance of the pathogen reduction required in 22 CCR section 60320.208(a) based on monitoring required in subsection (c), the Permittees shall immediately investigate the cause and initiate corrective actions. The Permittees shall immediately notify DDW and the Los Angeles Water Board if the advanced treated recycled water fails to meet the pathogen reduction criteria longer than 4 consecutive hours, or more than a total of 8 hours during any 7-day period. Failure of shorter duration shall be reported to the Los Angeles Water Board and DDW no later than 10 days after the month in which the failure occurred.

2. DDW MONITORING REQUIRMENTS

The Permittees shall comply with all monitoring requirements specified in Section 15 of the Order, in accordance with the DDW conditional acceptance letter dated October 13, 2025.

3. MONITORING REQUIREMENTS

3.1. MONITORING LOCATIONS

The Permittees shall establish the following monitoring locations to demonstrate compliance with the recycled water discharge limitations and other requirements in this Order. Should the need for a change in the sampling station(s) arise in the future, the Permittees shall seek approval of the proposed station by the Executive Officer prior to use.

TABLE E-1. MONITORING LOCATIONS

Monitoring Location Name	Description
INF-001	The influent monitoring location shall be located immediately before the headworks to the AWTF, where a representative sample of the influent can be obtained.
EFF-001	The effluent monitoring location shall be located downstream of any in-plant return flows, the final disinfection process, and before injection into the Barrier, where representative samples of the AWTF effluent can be obtained.
PreRO-001	The Pre-RO monitoring location shall be located immediately upstream of the RO Trains at the AWTF.
PreAOP-001	The PreAOP monitoring location shall be located downstream of the RO process and immediately upstream of UV/AOP treatment at the AWTF.
Groundwater Monitoring Wells	Refer to Table E-16
Blend-001	This sampling point is after the blend of recycled water and diluent water (if potable water is added at the Blend Station). This sampling point is not required to be monitored for CECs.

3.2. INFLUENT MONITORING

3.2.1. Influent monitoring is required to determine compliance with water quality conditions and standards and to assess AWTF performances.

3.2.2. The Permittees shall monitor the influent to the AWTF at INF-001 as described in Table E-2.

3.2.3. In addition to the listed parameters in Table E-2 for influent monitoring, the Permittees shall comply with DDW's monitoring requirements as described in Section 15 of the Order.

The following shall constitute the influent monitoring program:

TABLE E-2. AWTF INFLUENT MONITORING

Constituent	Units	Type of Sample	Minimum Frequency of Analysis	Notes
Total Flow	Million Gallons	Recorder	Continuous	a
pH	pH Units	Grab	Weekly	b
Total Organic Carbon	mg/L	Grab, Recorder	Weekly	c

Constituent	Units	Type of Sample	Minimum Frequency of Analysis	Notes
Total Dissolved Solids (TDS)	mg/L	Grab	Quarterly	b
Total Nitrogen	mg/L	Grab	Quarterly	b
Nitrate	mg/L	Grab	Quarterly	b
Nitrite	mg/L	Grab	Quarterly	b

Footnotes for Table E-2

a. For those constituents with a continuous minimum monitoring frequency, the monthly minimum and maximum, and daily average values shall be reported.

b. The effluent monitoring results from Long Beach WRP will be accepted as equivalent to the influent monitoring requirements of the AWTF. The Permittee can skip the sampling/analysis but the reporting of the analytical results shall be submitted.

c. For TOC, data collected from the PreRO-001 compliance point will be accepted in lieu of INF-001.

End of Footnotes for Table E-2

3.3. RECYCLED WATER MONITORING

3.3.1. Recycled water and diluent water monitoring is required to determine compliance with the permit conditions: (1) identify operational problems and aid in improving facility performance, and (2) provide information on wastewater characteristics and flows for use in interpreting water quality and biological data.

3.3.2. The Permittees shall monitor the advanced treated recycled water. The monitoring locations are described in Table E-1. The parameters to be monitored and monitoring frequencies are listed in Tables E-3 to E-12.

3.3.3. In addition to the listed parameters in Tables E-3 through E-12 for effluent and any intermediate monitoring, the Permittees shall comply with DDW's monitoring requirements as listed in Section 15 of the Order.

3.3.4. MRP Sections 1.16 through 1.20 includes accelerated monitoring and reporting procedures.

3.3.5. EFF-001 Minimum Sampling Frequency

For those constituents in Tables E-3 through Table E-12 that include a "monthly/quarterly" minimum sampling frequency, the constituent shall be monitored monthly for the first year and the Permittees may request a reduction to quarterly monitoring from DDW and the Los Angeles Water Board Executive Officer if no results exceed an MCL or NL per 22 CCR section 60320.201(i).

3.3.6. For total nitrogen, nitrate, nitrite, nitrate plus nitrite, and ammonia monitoring, the Permittees may request a reduction in monitoring frequency after the first year of operation. To qualify for reduced monitoring, the average of all results shall not exceed 5 mg/L total nitrogen and the average of a result

and its confirmation sample (taken within 24 hours of receipt of the initial result) shall not exceed 10 mg/L total nitrogen.

3.3.7. The priority pollutants in Table E-12 shall be monitored quarterly for the first two years of operation and the Permittees may request a reduction to annual monitoring from DDW and the Los Angeles Water Board Executive Officer per 22 CCR section 60320.220.

3.3.8. For those constituents with a continuous minimum monitoring frequency, the monthly minimum and maximum, and daily average values shall be reported.

3.3.9. For those constituents with a daily minimum monitoring frequency, samples shall be collected seven days per week unless otherwise specified.

3.3.10. For those constituents listed in Tables E-3 through E-12 which list "24-hour composite" for sample type, unless otherwise specified, the Los Angeles Water Board will accept grab sample results as long as grab sampling is in conformance with the type that is suggested by the analytical method(s).

3.3.11. For those constituents that contain both a MCL and secondary MCL (e.g. MTBE), the Permittees must conduct sampling on the more conservative sampling frequency.

The following shall constitute the recycled water monitoring program:

TABLE E-3. RECYCLED WATER MONITORING

Constituent	Units	Type of Sample	Minimum Frequency of Analysis	Notes
Total flow recycled water produced	MGD	Recorder Calculated	Continuous	a
Total volume recycled water produced	MGD	Recorder Calculated	Continuous	a
Total volume recycled water delivered to each end user	MGD	Recorder Calculated	Continuous Monthly	a
Total volume of diluent water delivered to Alamitos Barrier	MGD	Recorder Calculated	Continuous Monthly	a
pH	pH units	Recorder	Continuous	a
Turbidity (after MF and prior to RO)	NTU	Recorder	Continuous	---
Turbidity	NTU	Grab	Quarterly	---
Total Coliform	MPN/100 mL	Grab	Daily	b
Total Chlorine Residual	mg/L	Recorder	Continuous	a, h
Total Organic Carbon	mg/L	Recorder	Continuous	c
Copper	mg/L	24-hour composite	Quarterly	---
Lead	mg/L	24-hour composite	Quarterly	---

Constituent	Units	Type of Sample	Minimum Frequency of Analysis	Notes
Conductivity	μS	Recorder	Continuous	a
Total Dissolved Solids (TDS)	mg/L	24-hour composite	Quarterly	---
Sulfate	mg/L	24-hour composite	Quarterly	---
Chloride	mg/L	24-hour composite	Quarterly	---
Boron	mg/L	24-hour composite	Quarterly	---
Total Nitrogen	mg/L	24-hour composite	Weekly	d
Nitrate-N + nitrite-N	mg/L	24-hour composite	Weekly	---
Nitrate-N	mg/L	24-hour composite	Weekly	---
Nitrite-N	mg/L	24-hour composite	Weekly	---
Remaining Priority Pollutants (Table E-4 through E-9)	Varies	varies	varies	e, f, g

Footnotes for Table E-3

a. For those constituents with a continuous minimum monitoring frequency, the monthly minimum and maximum, and daily average values shall be reported.

b. For those constituents with a daily minimum monitoring frequency, samples shall be collected seven days per week unless otherwise specified.

c. Refer to DDW letter dated May 24, 2024. If the TOC analyzer is offline, a portable unit will be deployed and utilized until the standalone unit is back in service. .

d. See MRP Section 1.19 for additional monitoring requirements.

e. After three years of quarterly monitoring for priority pollutants and pollutants with primary MCLs, the Permittee may consult with the Los Angeles Water Board to discuss the water quality results. If the Los Angeles Water Board determines a reduction or elimination of monitoring is warranted, the Executive Officer of the Los Angeles Water Board may approve a reduction in monitoring frequency or elimination of this monitoring requirement.

f. The list of Priority Pollutants is provided in Appendix A to 40 C.F.R. section 423.

g. The list of pollutants with primary MCLs is provided in 22 CCR sections 64431, 64672.3, 64442, 64443, 64444, and 64533.

End of Footnotes for Table E-3

TABLE E-4. INORGANIC CHEMICALS

Constituent	Units	Sample Type	Minimum Sampling Frequency	Notes
Aluminum	mg/L	24-hour composite	Quarterly	---
Antimony	mg/L	24-hour composite	Quarterly	---
Arsenic	mg/L	24-hour composite	Quarterly	---

Constituent	Units	Sample Type	Minimum Sampling Frequency	Notes
Asbestos	MFL	24-hour composite	Every Three Years	a
Barium	mg/L	24-hour composite	Quarterly	---
Beryllium	mg/L	24-hour composite	Quarterly	---
Cadmium	mg/L	24-hour composite	Quarterly	---
Total Chromium	mg/L	24-hour composite	Quarterly	---
Chromium VI	mg/L	24-hour composite	Quarterly	---
Cyanide	mg/L	grab	Quarterly	---
Fluoride	mg/L	24-hour composite	Quarterly	---
Mercury	mg/L	24-hour composite	Quarterly	---
Nickel	mg/L	24-hour composite	Quarterly	---
Perchlorate	mg/L	24-hour composite	Quarterly	---
Selenium	mg/L	24-hour composite	Quarterly	---
Thallium	mg/L	24-hour composite	Quarterly	---

Footnotes for Table E-4

a. Asbestos to be sampled every three years pursuant to 22 CCR section 60320.212 and as approved by DDW.

End of Footnotes for Table E-4

TABLE E-5 ORGANIC CHEMICALS (VOLATILE ORGANIC CHEMICALS (VOCS))

Constituent	Units	Sample Type	Minimum Sampling Frequency
Benzene	mg/L	grab	Quarterly
Carbon Tetrachloride	mg/L	grab	Quarterly
1,2-Dichlorobenzene	mg/L	grab	Quarterly
1,4-Dichlorobenzene	mg/L	grab	Quarterly
1,1-Dichloroethane	mg/L	grab	Quarterly
1,2-Dichloroethane (1,2-DCA)	mg/L	grab	Quarterly
1,1-Dichloroethylene (1,1-DCE)	mg/L	grab	Quarterly
cis-1,2-Dichloroethylene	mg/L	grab	Quarterly
trans-1,2-Dichloroethylene	mg/L	grab	Quarterly
Dichloromethane	mg/L	grab	Quarterly
1,2-Dichloropropane	mg/L	grab	Quarterly
1,3-Dichloropropene	mg/L	grab	Quarterly
Ethylbenzene	mg/L	grab	Quarterly
Methyl-tert-butyl-ether (MTBE)	mg/L	grab	Quarterly

Constituent	Units	Sample Type	Minimum Sampling Frequency
Monochlorobenzene	mg/L	grab	Quarterly
Styrene	mg/L	grab	Quarterly
1,1,2,2-Tetrachloroethane	mg/L	grab	Quarterly
Tetrachloroethylene (PCE)	mg/L	grab	Quarterly
Toluene	mg/L	grab	Quarterly
1,2,4-Trichlorobenzene	mg/L	grab	Quarterly
1,1,1-Trichloroethane	mg/L	grab	Quarterly
1,1,2-Trichloroethane	mg/L	grab	Quarterly
Trichloroethylene (TCE)	mg/L	grab	Quarterly
Trichlorofluoromethane	mg/L	grab	Quarterly
1,1,2-Trichloro-1,2,2-Trifluoroethane	mg/L	grab	Quarterly
Vinyl Chloride	mg/L	grab	Quarterly
Xylenes (m,p)	mg/L	grab	Quarterly

TABLE E-6 ORGANIC CHEMICALS (NON-VOLATILE SYNTHETIC ORGANIC CHEMICALS (SOCS))

Constituent	Units	Sample Type	Minimum Sampling Frequency
Alachlor	mg/L	24-hour composite	Quarterly
Atrazine	mg/L	24-hour composite	Quarterly
Bentazon	mg/L	24-hour composite	Quarterly
Benzo(a)pyrene	mg/L	24-hour composite	Quarterly
Carbofuran	mg/L	24-hour composite	Quarterly
Chlordane	mg/L	24-hour composite	Quarterly
2,4-Dichlorophenoxyacetic acid (2,4-D)	mg/L	24-hour composite	Quarterly
Dalapon	mg/L	24-hour composite	Quarterly
1,2-Dibromo-3-chloropropane (DBCP)	mg/L	24-hour composite	Quarterly
Di(2-ethylhexyl)adipate	mg/L	24-hour composite	Quarterly
Di(2-ethylhexyl)phthalate (DEHP)	mg/L	24-hour composite	Quarterly
Dinoseb	mg/L	24-hour composite	Quarterly
Diquat	mg/L	24-hour composite	Quarterly
Endothall	mg/L	24-hour composite	Quarterly
Endrin	mg/L	24-hour composite	Quarterly
Ethylene Dibromide (EDB)	mg/L	24-hour composite	Quarterly

Constituent	Units	Sample Type	Minimum Sampling Frequency
Glyphosate	mg/L	24-hour composite	Quarterly
Heptachlor	mg/L	24-hour composite	Quarterly
Heptachlor epoxide	mg/L	24-hour composite	Quarterly
Hexachlorobenzene	mg/L	24-hour composite	Quarterly
Hexachlorocyclopentadiene	mg/L	24-hour composite	Quarterly
Gamma BHC (Lindane)	mg/L	24-hour composite	Quarterly
Methoxychlor	mg/L	24-hour composite	Quarterly
Molinate	mg/L	24-hour composite	Quarterly
Oxamyl	mg/L	24-hour composite	Quarterly
Pentachlorophenol	mg/L	24-hour composite	Quarterly
Picloram	mg/L	24-hour composite	Quarterly
Polychlorinated Biphenyls (PCBs)	mg/L	24-hour composite	Quarterly
Simazine	mg/L	24-hour composite	Quarterly
Thiobencarb	mg/L	24-hour composite	Quarterly
Toxaphene	mg/L	24-hour composite	Quarterly
1,2,3-Trichloropropane	mg/L	grab	Quarterly
2,3,7,8-TCDD (Dioxin)	mg/L	24-hour composite	Quarterly
2,4,5-TP (Silvex)	mg/L	24-hour composite	Quarterly

TABLE E-7 DISINFECTION BYPRODUCTS

Constituent	Units	Sample Type	Minimum Sampling Frequency	Notes
Total trihalomethanes (TTHM)	mg/L	grab	Quarterly	---
Bromodichloromethane	mg/L	grab	Quarterly	---
Bromoform	mg/L	grab	Quarterly	---
Chloroform	mg/L	grab	Quarterly	---
Dibromochloromethane	mg/L	grab	Quarterly	---
Haloacetic acids (five) (HAA5)	mg/L	grab	Quarterly	---
Monochloroacetic Acid	mg/L	grab	Quarterly	---
Dichloroacetic Acid	mg/L	grab	Quarterly	---
Trichloroacetic Acid	mg/L	grab	Quarterly	---
Monobromoacetic Acid	mg/L	grab	Quarterly	---
Dibromoacetic Acid	mg/L	grab	Quarterly	---
Bromate	mg/L	grab	Quarterly	---

Constituent	Units	Sample Type	Minimum Sampling Frequency	Notes
Chlorite	mg/L	grab	Quarterly	---

TABLE E-8 RADIOACTIVITY

Constituent	Units	Sample Type	Minimum Sampling Frequency	Notes
Combined Radium-226 and Radium-228	pCi/L	24-hour composite	Quarterly	---
Gross Alpha particle activity (excluding radon and uranium)	pCi/L	24-hour composite	Quarterly	---
Uranium	pCi/L	24-hour composite	Quarterly	---
Gross Beta/photon emitters	millirem/ yr	24-hour composite	Quarterly	a
Strontium-90	pCi/L	24-hour composite	Quarterly	---
Tritium	pCi/L	24-hour composite	Quarterly	---

Footnotes for Table E-8

a. If the results of testing for all beta and photon emitters is less than or equal to 50 pCi/L, the facility is in compliance and the value shall be reported as <4 millirem/year. If the test results for all beta and photon emitters are greater than 50 pCi/L, the Permittees must have the samples further analyzed for the individual nuclides. If the sum of the fractions of the detected nuclides is <4 millirem/year, the facility is in compliance. The procedures for calculating the sum of fractions is presented in Section 21 of the Order.

End of Footnotes for Table E-8

TABLE E-9 GENERAL PHYSICAL MINERALS

Constituent	Units	Sample Type	Minimum Sampling Frequency
Calcium	µg/L	24-hour composite	Quarterly
Potassium	µg/L	24-hour composite	Semiannually
Sodium	µg/L	24-hour composite	Quarterly
Total hardness	µg/L	24-hour composite	Quarterly

TABLE E-10 SECONDARY MCLS

Constituent	Units	Sample Type	Minimum Sampling Frequency	Notes
Zinc	mg/L	24-hour composite	Semiannually	---
Foaming agents (MBAS)	mg/L	24-hour composite	Semiannually	---
Iron	mg/L	24-hour composite	Semiannually	---
Silver	mg/L	24-hour composite	Semiannually	---

Constituent	Units	Sample Type	Minimum Sampling Frequency	Notes
Methyl-tert-butyl ether (MTBE)	mg/L	24-hour composite	Semiannually	---
Color	ACU	24-hour composite	Semiannually	---
Manganese	mg/L	24-hour composite	Semiannually	---
Odor - Threshold	TON	24-hour composite	Quarterly	---
Total Dissolved Solids	mg/L	24-hour composite	Quarterly	---
Sulfate	mg/L	24-hour composite	Quarterly	---
Chloride	mg/L	24-hour composite	Quarterly	---
Turbidity	NTU	24-hour composite	Quarterly	---

TABLE E-11 CONSTITUENTS WITH NOTIFICATION LEVELS

Constituent	Units	Sample Type	Minimum Sampling Frequency	Notes
Boron	µg/L	24-hour composite	Quarterly	---
n-butylbenzene	µg/L	grab	Quarterly	---
sec-butylbenzene	µg/L	grab	Quarterly	---
tert-butylbenzene	µg/L	grab	Quarterly	---
Carbon Disulfide	µg/L	grab	Quarterly	---
Chlorate	µg/L	24-hour composite	Quarterly	---
2-chlorotoluene	µg/L	grab	Quarterly	---
4-chlorotoluene	µg/L	grab	Quarterly	---
Diazinon	µg/L	grab	Quarterly	---
Dichlorodifluoromethane (Freon 12)	µg/L	grab	Quarterly	---
1,4-dioxane	µg/L	grab	Quarterly	---
Ethylene Glycol	µg/L	grab	Quarterly	---
Formaldehyde	µg/L	grab	Quarterly	---
HMX	µg/L	24-hour composite	Quarterly	---
Isopropylbenzene	µg/L	grab	Quarterly	---
Manganese	µg/L	24-hour composite	Quarterly	---
Methyl Isobutyl Ketone (MIBK)	µg/L	grab	Quarterly	---
Naphthalene	µg/L	grab	Quarterly	---
N-Nitrosodiethylamine (NDEA)	µg/L	24-hour composite	Quarterly	---
N-Nitrosodimethylamine (NDMA)	µg/L	grab	Quarterly	---
N-Nitrosodi-n-propylamine (NDPA)	µg/L	24-hour composite	Quarterly	---
Perfluohexanoic acid (PFHxA)	µg/L	24-hour composite	Quarterly	---

Constituent	Units	Sample Type	Minimum Sampling Frequency	Notes
Perfluorobutane sulfonic acid (PFBS)	µg/L	24-hour composite	Quarterly	---
Perfluorohexane sulfonic acid (PFHxS)	µg/L	24-hour composite	Quarterly	---
Perfluorooctanoic acid (PFOA)	µg/L	24-hour composite	Quarterly	---
Perfluorooctanesulfonic acid (PFOS)	µg/L	24-hour composite	Quarterly	---
Propachlor	µg/L	grab	Quarterly	---
N-propylbenzene	µg/L	grab	Quarterly	---
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	µg/L	24-hour composite	Quarterly	---
Tertiary Butyl Alcohol (TBA)	µg/L	grab	Quarterly	---
1,2,4-Trimethylbenzene	µg/L	grab	Quarterly	---
1,3,5-Trimethylbenzene	µg/L	grab	Quarterly	---
2,4,6-Trinitrotoluene (TNT)	µg/L	grab	Quarterly	---
Vanadium	µg/L	24-hour composite	Quarterly	---

TABLE E-12 REMAINING PRIORITY TOXIC POLLUTANTS

Constituent	Units	Sample Type	Minimum Sampling Frequency	Notes
Acenaphthene	µg/L	24-hour composite	Annually	---
Acrolein	µg/L	24-hour composite	Annually	---
Acrylonitrile	µg/L	grab	Annually	---
Benzidine	µg/L	24-hour composite	Annually	---
Chlorobenzene	µg/L	grab	Annually	---
Hexachloroethane	µg/L	grab	Annually	---
Chloroethane	µg/L	grab	Annually	---
Bis(2-chloroethyl) ether	µg/L	24-hour composite	Annually	---
2-chloroethyl vinyl ether	µg/L	grab	Annually	---
2-chloronaphthalene	µg/L	24-hour composite	Annually	---
2,4,6-trichlorophenol	µg/L	24-hour composite	Annually	---
Parachlorometa cresol	µg/L	24-hour composite	Annually	---
2-chlorophenol	µg/L	24-hour composite	Annually	---
1,3-dichlorobenzene	µg/L	grab	Annually	---
3,3'-dichlorobenzidine	µg/L	24-hour composite	Annually	---
2,4-dichlorophenol	µg/L	24-hour composite	Annually	---
2,4-dimethylphenol	µg/L	24-hour composite	Annually	---

Constituent	Units	Sample Type	Minimum Sampling Frequency	Notes
2,4-dinitrotoluene	µg/L	grab	Annually	---
2,6-dinitrotoluene	µg/L	grab	Annually	---
1,2-diphenylhydrazine	µg/L	24-hour composite	Annually	---
Fluoranthene	µg/L	grab	Annually	---
4-chlorophenyl phenyl ether	µg/L	24-hour composite	Annually	---
4-bromophenyl phenyl ether	µg/L	24-hour composite	Annually	---
Bis(2-chloroisopropyl) ether	µg/L	24-hour composite	Annually	---
Bis(2-chlorethoxy) methane	µg/L	24-hour composite	Annually	---
Methyl chloride (chloromethane)	µg/L	grab	Annually	---
Methyl bromide (bromomethane)	µg/L	grab	Annually	---
Hexachlorobutadiene	µg/L	grab	Annually	---
Isophorone	µg/L	grab	Annually	---
Nitrobenzene	µg/L	24-hour composite	Annually	---
2-nitrophenol	µg/L	24-hour composite	Annually	---
4-nitrophenol	µg/L	24-hour composite	Annually	---
2,4-dinitrophenol	µg/L	24-hour composite	Annually	---
4,6-dinitro-o-cresol	µg/L	24-hour composite	Annually	---
N-nitrosodiphenylamine	µg/L	24-hour composite	Annually	---
Phenol	µg/L	24-hour composite	Annually	---
Bis(2-ethylhexyl) phthalate	µg/L	grab	Annually	---
Butyl benzyl phthalate	µg/L	grab	Annually	---
Di-n-butyl phthalate	µg/L	grab	Annually	---
Di-n-octyl phthalate	µg/L	grab	Annually	---
Diethyl phthalate	µg/L	grab	Annually	---
Dimethyl phthalate	µg/L	grab	Annually	---
Benzo(a) anthracene	µg/L	grab	Annually	---
Benzo(b) fluoranthene	µg/L	grab	Annually	---
Benzo(k) fluoranthene	µg/L	grab	Annually	---
Chrysene	µg/L	grab	Annually	---
Acenaphthylene	µg/L	grab	Annually	---
Anthracene	µg/L	grab	Annually	---
Benzo(ghi) perylene	µg/L	grab	Annually	---
Fluorene	µg/L	grab	Annually	---

Constituent	Units	Sample Type	Minimum Sampling Frequency	Notes
Phenanthrene	µg/L	grab	Annually	---
Dibenzo(a,h)anthracene	µg/L	grab	Annually	---
Indeno(1,2,3-c,d) pyrene	µg/L	grab	Annually	---
Pyrene	µg/L	grab	Annually	---
Aldrin	µg/L	grab	Annually	---
Dieldrin	µg/L	grab	Annually	---
4,4'-DDT	µg/L	24-hour composite	Annually	---
4,4'-DDE	µg/L	24-hour composite	Annually	---
4,4'-DDD	µg/L	24-hour composite	Annually	---
Alpha-endosulfan	µg/L	grab	Annually	---
Beta-endosulfan	µg/L	grab	Annually	---
Endosulfan sulfate	µg/L	grab	Annually	---
Endrin aldehyde	µg/L	grab	Annually	---
Alpha-BHC	µg/L	grab	Annually	---
Beta-BHC	µg/L	grab	Annually	---
Delta-BHC	µg/L	grab	Annually	---

3.4. Constituents of Emerging Concerns (CECs) Monitoring and Bioanalytical Screening

3.4.1. The following CEC monitoring requirements and Attachment H are consistent with the Recycled Water Policy and DDW's recommendations.

3.4.2. Compliance with health-based CECs shall be determined by analyzing samples of the advanced treated recycled water produced at the AWTF (EFF-001) prior to injection into the Central Basin.

3.4.3. Compliance with performance indicator CECs shall be determined by analyzing samples collected prior to treatment by RO at the AWTF (PreRO-001) and following treatment at the AWTF (EFF-001) and prior to injection into the Central Basin. The removal percentages for the performance indicator CECs shall be included in the Annual Summary Report.

3.4.4. The removal percentages for the surrogates shall be determined based on the daily averages for electrical conductivity and weekly values for TOC and included in the quarterly compliance monitoring reports.

3.4.5. For groundwater recharge-reuse using subsurface application, the removal percentage shall be determined by comparing recycled water quality before treatment by RO/AOPs and after treatment prior to release to the aquifer.

3.4.6. The Permittees have developed and maintained a Quality Assurance Project Plan (QAPP) for monitoring CECs to ensure the project data are of known, consistent, and documented quality and that the monitoring is consistent with the Recycled Water Policy. The QAPP was developed using the *Guidance for Quality Assurance Project Plans*, EPA QA/G-5 (EPA/240/R-2/009, 2002). The latest revision of the QAPP dated February 2025, was approved by the State Water Board and Los Angeles Water Board on June 11 and 12, 2025, respectively. The QAPP shall be updated and resubmitted to the State Water Board and Los Angeles Water Board for approval within 90 days of the adoption of this Order, or when significant changes are made that would affect the overall data quality and use (e.g. using a new analytical chemistry laboratory) or at least annually if any changes are made.

3.4.7. The Permittees shall submit the quality assurance data specified in the QAPP, including percent recoveries and acceptable recovery ranges for each analyte, to the Los Angeles Water Board with each data set.

3.4.8. Laboratories shall use analytical methods that have been validated and approved for the analytes in the applicable matrix and can achieve the reporting limits in Tables E-13 through E-15. This includes methods that have been approved by U.S. EPA, the Standards Methods Committee, the American Society for Testing and Materials International, or other methods that have been validated and approved by the regional water boards or State Water Board for the analytes in the applicable matrix. The QAPP shall include minimum method validation requirements developed by the Los Angeles Water Board in consultation with the State Water Board if proposing to (1) use a method that has not been validated and approved, (2) use a validated and approved method that has been modified, or (3) use a method for an application that is outside the intended use of the method (e.g., different matrix, new analyte).

3.4.9. A laboratory providing analyses of CECs and bioanalytical screening must hold a valid certificate of accreditation from ELAP for the analytical test methods or analytes selected, if such methods or analytes are accredited by ELAP at the time that monitoring is required to begin. If ELAP accreditation for analytical test methods or an analyte becomes available after monitoring is initiated, then the laboratory providing analysis of CECs shall be accredited by ELAP for those methods or analytes within one year of such accreditation becoming available. If ELAP accreditation is unavailable for a method or an analyte, the recycled water producer shall use a laboratory that has been accredited for a similar analytical method, instrumentation, or analyte until ELAP accreditation becomes available, unless otherwise approved by the Los Angeles Water Board or State Water Board for bioanalytical screening tools.

3.4.10. The Permittees shall conduct a three-phased monitoring approach for the CEC monitoring parameters in Table E-13 though E-15, which includes an initial assessment monitoring phase, followed by a baseline monitoring phase, and then a standard operation monitoring phase. The Permittees shall conduct these phases in accordance with Attachment H.

TABLE E-13 CECS TO BE MONITORED (SUBSURFACE APPLICATION)

Constituent	Relevance/ Indicator Type	Sample Type	Reporting Limit (µg/L)	Prior to RO (PreRO-001)	Post RO/Pre AOP (PreAOP-001)	Following Treatment Prior to Injection (EFF-001)
1,4-dioxane	Health	grab	0.1	NO	NO	YES
N-Nitrosodimethylamine (NDMA)	Health and Performance	grab	0.002	YES	YES	YES
N-Nitrosomorphine (NMOR)	Health	grab	0.002	NO	NO	YES
Perfluorooctanesulfonic acid (PFOS)	Health	grab	0.0065	NO	NO	YES
Perfluorooctanoic Acid (PFOA)	Health	grab	0.0051	NO	NO	YES
Sucralose	Performance	grab	0.1	YES	YES	YES
Sulfamethoxazole	Performance	grab	0.01	YES	NO	YES

TABLE E-14 SURROGATES TO BE MONITORED (SUBSURFACE APPLICATION)

Constituent	Sample Type	Prior to RO (PreRO-001)	Following Treatment Prior to Injection (EFF-001)	Notes
Electrical Conductivity	online	YES	YES	---
Total Organic Carbon	online	YES	YES	---
UV Light Absorbance	Grab	YES	YES	---

TABLE E-15 BIOANALYTICAL SCREENING TOOLS FOR CECS

Endpoint Activity	Example Relevant CECs	Reporting Limit (ng/L)	Following Treatment Prior to Injection (EFF-001)
Estrogen Receptor α (ER-α)	Estradiol, bisphenol A, nonylphenol	0.5	YES
Aryl Hydrocarbon receptor (AhR)	Dioxin-like chemicals, polycyclic aromatic hydrocarbons, pesticides	0.5	YES

3.5. Groundwater Monitoring Associated with Subsurface Application (Injection Wells)

Pursuant to 22 CCR section 60320.226, prior to operating a GRRP, the Permittees is required to site and construct at least two monitoring wells downgradient of the GRRP such that: (1) at least one monitoring well is located no less than two weeks but no more than six months of travel time from the GRRP, and at least 30 days upgradient of the nearest potable well; and (2) in addition, at least one monitoring well is located between the GRRP and the nearest upgradient drinking water well. Furthermore, the Permittees is required to collect groundwater samples independently from each aquifer receiving the recycled water.

The Permittees selected two wells to meet the Inland Injection GRRP monitoring well requirements: nested monitoring wells LVL-MW-01 and LVL-MW-02. The modeled travel time between the injection well LVL-IW-01 and monitoring well LVL-MW-01 is approximately 92 days (3 months) in the I aquifer and 255 days (8.5 months) in the Main Aquifer. The modeled travel time between injection well LVL-IW-01 and LVL-MW-02 is approximately 5.6 years in the I aquifer and more than 11 years in the Main Aquifer. The Permittees shall monitor the following monitoring wells, associated with subsurface application:

TABLE E-16 GROUNDWATER MONITORING WELLS

Project No.	Well No.	WRD Monitoring Well ID	Perforated Interval (feet below Ground Surface)	Aquifer	Well Use
34LS	503BF	100258	136 – 181	C	3-Month
34LS	503BE	100257	191 – 216	B	3-Month
34HJ	502BX	100242	314 – 344	A	3-Month
34HJ	502BW	100243	400 – 440	I	3-Month,
34L10	502AK	100252	165 – 185	C	¼-Distance
34L10	502AL	100251	225 – 260	B	¼-Distance
34L10	502AM	100250	311 – 365	A	¼-Distance
34L10	502AN	100249	405 – 450	I	¼-Distance
LVL-MW-01	N/A	103103	635 – 655	I	>2 weeks <6 months
LVL-MW-01	N/A	103102	950 – 970	Main	>2 weeks <6 months
LVL-MW-01	N/A	103101	1,050-1,070	Main	>2 weeks <6 months

Project No.	Well No.	WRD Monitoring Well ID	Perforated Interval (feet below Ground Surface)	Aquifer	Well Use
LVL-MW-02	N/A	103106	615 – 635	I	>30 days
LVL-MW-02	N/A	103105	910 – 930	Main	>30 days
LVL-MW-02	N/A	103104	1,000-1,020	Main	>30 days

3.6. Groundwater Monitoring and Sampling Frequency (Subsurface Applications)

3.6.1. The Permittees shall monitor the quality of groundwater to assess any impact(s) from the recharge of advanced treated recycled water. Representative samples of groundwater shall be collected from the listed monitoring wells in Table E-16.

3.6.2. If any of the monitoring results indicate that an MCL has been exceeded or coliforms are present in the monitoring wells at the injection areas as a result of the use of advanced treated recycled water produced by the Facility, the Permittees shall notify DDW and the Los Angeles Water Board within 72 hours of receiving the results and make note of any positive finding in the next monitoring report submitted to the Los Angeles Water Board. Subsurface application shall be discontinued until corrective actions are taken or a determination is made that injection well activity was not responsible for the contamination.

3.6.3. Per Title 22, section 60320.220, priority pollutants shall be monitored in the groundwater quarterly for two years and may be reduced to annually following approval from DDW and the Los Angeles Water Board Executive Officer.

TABLE E-17 GROUNDWATER MONITORING

Parameters	Units	Barrier Monitoring Wells	Inland Injection Project Monitoring Wells	Note
Water level elevation	feet	quarterly	quarterly	b, d
TOC	mg/L	eliminated	quarterly	e
Total Coliform	MPN/100 mL	quarterly	quarterly	d
BOD_5 20°C	mg/L	eliminated	quarterly	e
Oil and grease	mg/L	eliminated	quarterly	e
Nitrate-N	mg/L	quarterly	quarterly	d
Nitrite-N	mg/L	quarterly	quarterly	d

Parameters	Units	Barrier Monitoring Wells	Inland Injection Project Monitoring Wells	Note
Nitrate plus Nitrite as Nitrogen	mg/L	quarterly	quarterly	d
Total Nitrogen	mg/L	quarterly	quarterly	d
Total Dissolved Solids	mg/L	quarterly	quarterly	d
Total Residual Chlorine	mg/L	eliminated	quarterly	e
Specific Conductance	µmho/ cm	eliminated	quarterly	e
Sulfate	mg/L	quarterly	quarterly	d
Chloride	mg/L	quarterly	quarterly	d
Boron	mg/L	quarterly	quarterly	d
Odor	TON	eliminated	quarterly	e
Color	ACU	eliminated	quarterly	e
Total Suspended Solids (TSS)	mg/L	eliminated	quarterly	e
Inorganics with Primary MCLs (Table E-4)	µg/L, MFL	annually	quarterly	d
Regulated Organics (Tables E-5 and E-6)	µg/L	annually	quarterly	d
Constituents/parameters with Secondary MCLs (Table E-10)	varies	eliminated	quarterly	e
Disinfection Byproducts (Table E-7)	µg/L	annually	quarterly	d
Radioactivity (Table E-8)	pCi/L, millirem/year	annually	quarterly	d
Remaining General Physical and General Minerals (Table E-9)	µg/L	eliminated	quarterly	e
Constituents with Notification Levels (Table E-11)	µg/L	quarterly/ annually	quarterly	c, d
Remaining Priority Pollutants (Table E-12)	µg/L	annually/ biennially (once per two years)	quarterly	f, d

Footnotes for Table E-17

a. All groundwater sampling shall be conducted by grab samples unless otherwise specified

b. Water level elevations shall be measured to the nearest 0.01 feet and referenced to mean sea level.

c. For Barrier monitoring wells, PFOA, PFOS, and PFHxS must be sampled on a quarterly basis. All other constituents listed in Table E-11 are sampled annually for Barrier monitoring wells.

d. Per 22 CCR section 60320.220(c), the Permittee may reduce monitoring for the chemicals in this section to once each year following DDW's approval based on DDW's review of the most recent two years of results of the monitoring performed pursuant to this section.

e. Per 22 CCR section §60320.226(e), the Permittee may discontinue monitoring for chemicals and contaminants in section 60320.226 (b) following DDW's approval based on the DDW's review of the most recent two years of monitoring results.

f. For Barrier monitoring wells, chromium III, n-nitrosodiphenylamine, 4,6-dinitro-o-cresol and pyrene must be sampled on an annual basis. All other constituents listed in Table E-12 are sampled biennially for Barrier monitoring wells.

g. Asbestos to be sampled every three years pursuant to 22 CCR section 60320.212 and as approved by DDW.

End of Footnotes for Table E-17

3.6.4. If any of the groundwater monitoring results indicates 80% of the sum of a nitrate, nitrite, or nitrate plus nitrite MCL has been exceeded, another sample shall be collected for confirmation within 48 hours of receiving the results from the laboratory. If the average of the initial sample and confirmation sample exceeds the MCL, DDW and Los Angeles Water Board shall be notified within 24 hours. Subsurface application shall be discontinued until corrective actions are taken or a determination is made that GRRP activity was not responsible for the contamination.

3.7. BLENDED ADVANCED-TREATED WATER MONITORING

Monitoring for the blended advanced-treated recycled water shall occur at Blend-001 and be implemented consistent with the MRP, as follows:

TABLE E-18 BLENDED ADVANCED-TREATED WATER MONITORING

Constituent	Units	Sample Type	Minimum Sampling Frequency
Total Blended Flow	MGD	Recorder	Total monthly
Chlorine residual	mg/L	Grab	Weekly
TDS	mg/L	Grab	Weekly
Sulfate	mg/L	Grab	Weekly
Chloride	mg/L	Grab	Weekly
Boron	mg/L	Grab	Weekly
Total nitrogen	mg/L	Grab	Weekly

4. REPORTING REQUIREMENTS

The Permittees shall submit the required reports, outlined in this section, to the State Water Board's GeoTracker database by the specified dates.

4.1. For the purpose of reporting compliance with numerical limitations, analytical data shall be reported using the following reporting protocols:

4.1.1. Sample results greater than or equal to the MRL must be reported "as measured" by the laboratory (i.e., the measured chemical concentration in the sample).

4.1.2. Sample results less than the MRL, but greater than or equal to the laboratory's Method Detection Limit (MDL), shall be reported as "Detected, but Not Quantified", "DNQ." The laboratory shall write the estimated chemical concentration of the sample next to "DNQ."

4.1.3. Sample results less than the laboratory's MDL shall be reported as "Not-Detected", or ND.

4.1.4. If the Permittees samples and performs analyses (other than for process/operational control, startup, research, or equipment testing) on any sample more frequently than required in this MRP using approved analytical methods, the results of those analyses shall be included in the report. These results shall be reflected in the calculation of the average used in demonstrating compliance with average effluent, receiving water, etc., limitations.

4.1.5. The Los Angeles Water Board or DDW may request supporting documentation, such as daily logs of operations.

4.1.6. All reports shall reference Compliance File No. CI-8956 and shall be uploaded to GeoTracker under Global ID WDR100006793. Compliance monitoring reports shall be submitted separately from other technical reports.

4.1.7. All submittals shall comply with the Electronic Submittal of Information (ESI) requirements by submitting all reports required under the Order, including groundwater monitoring data, discharge location data, and searchable Portable Document Format. If any file exceeds 10 megabytes then the report shall be uploaded in multiple parts. Upon request, the data shall be provided in Excel format.

4.1.8. The Permittees shall submit to the Los Angeles Water Board, together with the first monitoring report required by this Order, a list of all chemicals and proprietary additives which could affect the quality of the recycled water, including quantities of each. Any subsequent changes in types and/or quantities shall be reported promptly. An annual summary of the quantities of all chemicals, listed by both trade and chemical names, which are used in the treatment process shall be included in the annual report.

4.2. Monthly Monitoring Reports

Monthly monitoring reports shall be submitted to the Los Angeles Water Board and DDW by the 10th day of the month following the month of sampling and shall include:

4.2.1. The calculated log reduction values (LRVs).

4.2.2. The daily MF integrity test results for each MF rack. The results shall indicate the pressure decay result in psi and whether the test passed or failed.

4.2.3. The daily minimum, average and maximum conductivity readings for the RO influent and effluent for each RO train, and the average reduction in electrical conductivity achieved.

4.2.4. Continuous turbidity analytical results for the month for the AWTF advanced-treated recycled water (located after MF and before RO) including the daily minimum, average, maximum, and percent of time turbidity exceeds 0.2 NTU. The Permittees shall also report if the MF effluent turbidity exceeded 0.5 NTU at any time.

4.2.5. Summary of the NDMA log reduction along with Ultraviolet Intensity (UVI), Ultraviolet Transmittance (UVT), power, flow rate (Q), calculated hydrogen peroxide dose, calculated energy-oxidant dose product (electrical energy dose [EED] multiplied by hydrogen peroxide oxidant dose) in kilowatt-hours per 1,000 gallons * milligrams per liter (kWh/kgal*mg/L), and any reactor failures.

4.2.6. Based on the daily log reduction calculation, report a “Yes” or “No” for each day to indicate if the necessary pathogenic microorganism log reductions (12-logs virus, 10-logs *Giardia* and *Cryptosporidium* oocyst) have been achieved. The daily minimum model predicated 1,4-dioxane and NDMA log reduction shall also be reported. An overall log reduction calculated value must be provided daily unless the AWTF is offline for a 24-hour period.

4.2.7. Daily coliform analytical results for the AWTF advanced-treated recycled water.

4.2.8. Summary of the monthly operational parameters for UV and hydrogen peroxide dose.

4.2.9. TOC results for the RO influent and effluent including the average and maximum, average reduction of TOC by RO, and the percent of time TOC is greater than 0.5 mg/L. Refer to section 1.20 for additional TOC monitoring details.

4.2.10. Records of operational problems, plant and equipment breakdowns, and diversion of emergency storage or disposal, and all corrective or preventative actions taken.

4.3. Quarterly Monitoring Reports

4.3.1. Quarterly monitoring reports shall be submitted to the Los Angeles Water Board by the 15th day of the third month following the end of each quarterly monitoring period.

4.3.2. The quarterly reports shall include, at a minimum, the following information:

4.3.2.1. A summary of operational concerns that address changes in reporting conditions including influent and AWTF recycled water since the last report.

4.3.2.2. Summary of monthly operational parameters for calculated 1,4-dioxane and NDMA log reduction along with flowrate, UVT, pH and any reactor failure(s).

4.3.2.3. Volume of the influent (tertiary treated recycled water), and advanced-treated recycled water used for indirect potable reuses. If no advanced treated recycled water was used during the quarter, the report shall so state.

4.3.2.4. A table listing the users serviced during the quarter, the amount of recycled water delivered to each user (reported in both gallons and in acre-feet), and the use of the recycled water.

4.3.2.5. The date and time of sampling and analyses.

4.3.2.6. All analytical results of samples collected during the monitoring period for the AWTF advanced treated recycled and groundwater.

4.3.2.7. The analytical method used, the method detection limit (MDL), and the RDL for each constituent analyzed.

4.3.2.8. The applicable MCL, condition, or permit limitation.

4.3.2.9. The name(s) of the laboratory that conducted the analyses and a copy of laboratory certifications from ELAP.

4.3.2.10. Records of any operational problems, plant upset(s), equipment breakdowns or malfunctions, and any diversion(s) of off-specification recycled water and the location(s) of final disposal.

4.3.2.11. Discussion of compliance, noncompliance, or violation of requirements.

4.3.2.12. Summary of operational concerns describing changes in reporting conditions, including influent, AWTF advanced treated recycled water, and any groundwater monitoring results, since the last report.

4.3.2.13. All corrective or preventive action(s) taken or planned with a schedule of implementation, if any.

4.3.2.14. Calculations indicating what percent results of the quarter's monitoring did not meet the surrogate and/or operational parameter limits established to assure proper on-going performance of the RO and AOP processes. If the calculated percent exceeds 10 percent, the Permittees will submit a report to DDW and the Los Angeles Water Board within 45 days of the end of the quarter. The report will describe corrective actions planned or taken to reduce the percent to less than 10. If necessary, the Permittees

shall consult with regulators and comply with an alternative monitoring plan approved by DDW and Los Angeles Water Board.

4.3.2.15. Summary of monitoring results, calculations, and analyses for Health-Based CECs, Performance Indicator CECs, and CEC surrogates.

4.4. Annual Summary Reports

4.4.1. The Annual Summary Report shall be received by April 30 of each year and shall contain a discussion of the previous calendar year's analytical results, as well as graphical and tabular summaries of the monitoring analytical data.

4.4.2. Public water systems, owners of small water systems and other active production wells having down-gradient sources potentially affected by the injection well or within 10 years groundwater travel time from the injection well location shall be notified by direct mail and/or electronic mail of the availability of the annual report.

4.4.3. Annual monitoring reports shall include a minimum of the following:

4.4.3.1. The amount of advanced treated recycled water produced by the AWTF, the total volume of recycled water injected into the injection well LVL-IW-01 each year, and the amount distributed for nonpotable reuse.

4.4.3.2. Documentation demonstrating the requirements for retention time underground and the distance from the nearest extraction well are being met.

4.4.3.3. Tabular and graphical summaries of the monitoring data obtained during the previous calendar year including advanced treated recycled water and groundwater quality data.

4.4.3.4. A table listing the users and use areas serviced during the year, the amount of recycled water delivered to each user (reported in both gallons and in acre-feet), and the use of the recycled water. Newly permitted recycled water users shall be identified. When applicable, a supplement to the Title 22 Engineering Report and the State Water Board approval letter supporting those additions shall be included.

4.4.3.5. A summary of compliance status with the applicable monitoring requirements during the previous calendar year.

4.4.3.6. For any non-compliance during the previous calendar year, a description of:

4.4.3.6.1. The date, duration, and nature of the violation.

4.4.3.6.2. A summary of any corrective actions and/or suspensions of subsurface application of recycled municipal wastewater resulting from a violation.

4.4.3.6.3. If uncorrected, a schedule for and summary of all remedial actions.

4.4.3.7. Any detections of monitored chemicals or contaminants, and any observed trends in the monitoring wells (and if applicable, in diluent water supplies).

4.4.3.8. Information regarding the vertical and horizontal migration of the recharge water plume from the injection well.

4.4.3.9. A description of any changes and anticipated changes, including any impacts on the operation of any unit processes or facilities shall be provided.

4.4.3.10. Title 22 drinking water quality data for the nearest domestic water supply well.

4.4.3.11. An estimated quantity and quality of the advanced treated recycled water to be utilized for the next calendar year.

4.4.3.12. A description of any changes in the operation of any unit processes or facilities. Provide an evaluation of the expected impact of the changes on the subsequent unit processes.

4.4.3.13. A summary of the measures taken to comply with wastewater source control program and the effectiveness of the implementation of the measures.

4.4.3.14. A list of the analytical methods used for each test and associated laboratory quality assurance/quality control (QA/QC) procedures shall be included in the annual report. The annual report shall identify the laboratories used by the Permittees to monitor compliance with this Order, and include a copy of laboratory certifications issued by the DDW's Environmental Laboratory Accreditation Program (ELAP).

4.4.3.15. A list of current operating personnel, their responsibilities, and their corresponding grade and date of certification.

4.4.3.16. A summary of monitoring reports, and reporting and trend analyses, to describe the changes in water quality and contrast them to background measurements for all constituents exceeding MCLs or where concentration trends increase after the addition of recycled water. Specifically describe studies or investigations made to identify the source, fate, and transport path of constituents which exceed the MCL at the monitoring wells, which are the result of the use of recycled water generated at the AWTF.

4.4.3.17. Results of any tracer studies performed throughout the year, if applicable.

4.4.3.18. The Annual Summary Report shall be prepared by an engineer licensed in California and experienced in the fields of wastewater treatment and public water supply.

4.4.3.19. The date of the facility's Operation and Optimization Plan (OOP), the date the plan was last reviewed, and whether the plan is complete and valid for the current facilities.

4.4.3.20. A summary table of all inspections and enforcement activities initiated by the Permittees. Include a discussion of compliance and corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into compliance. Copies of documentation of any enforcement actions taken by the Permittees shall be provided.

4.4.3.21. An evaluation of the performance of the recycled water system for the AWTF including a discussion of capacity issues, system problems, and a forecast of the flows anticipated for the following year.

4.5. Annual Volumetric Reports

The Annual Volumetric Report shall be received by April 30 of each year. All volumetric data measured monthly shall be reported as acre-feet (af) to the GeoTracker database under the "Other Tools: submit Annual Volumetric Water Data.". The Annual Volumetric Reports must be submitted in accordance with section 3 of the Recycled Water Policy as described below:

4.5.1. Influent: Monthly total volume of wastewater collected and treated.

4.5.2. Production: Monthly total volume of wastewater treated, specifying the level of treatment.

4.5.3. Reuse: Monthly volume of recycled water distributed for beneficial use in compliance with title 22 as listed below:

4.5.3.1. Agricultural irrigation: pasture or crop irrigation

4.5.3.2. Landscape irrigation: irrigation of parks, greenbelts, playgrounds, school yards, athletic fields, cemeteries, residential landscaping, freeway landscaping, highway landscaping, and street landscaping.

4.5.3.3. Golf course irrigation: irrigation of golf courses, including water used to maintain aesthetic impoundments within golf courses.

4.5.3.4. Commercial application: commercial facilities, business use (such as laundries or office buildings), car washes, retail nurseries, and appurtenant landscaping that is not separately metered.

4.5.3.5. Industrial Application: manufacturing facilities, cooling towers, process water, and appurtenant landscaping that is not separately metered.

4.5.3.6. Geothermal energy production: augmentation of geothermal fields.

4.5.3.7. Other nonpotable uses including but not limited to dust control, flushing sewers, fire protection, fill stations, snow making, and dual-plumbed systems.

4.5.3.8. Groundwater recharge: surface or subsurface application, except for seawater intrusion barrier use.

4.5.3.9. Seawater intrusion barrier: groundwater recharge via subsurface application intended to reduce seawater intrusion into a coastal aquifer with a seawater interface.

4.5.4. Discharge: Monthly volume of treated wastewater discharged, specifying level of treatment.

5. REPORT SUBMITTAL DATES

Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

TABLE E-19 MONITORING PERIODS AND REPORTING SCHEDULE

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	Submit with quarterly report
Daily	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with quarterly report
Weekly	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	Submit with quarterly report
Monthly	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	1st day of calendar month through last day of calendar month	By the 10th day of the month following the month of sampling
Quarterly	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	June 15 September 15 December 15 March 15
Semiannually	Closest of January 1 or July 1 following (or on) permit effective date	January 1 through June 30 July 1 through December 31	Submit with corresponding quarterly report.
Annually	January 1 following (or on) permit effective date	January 1 through December 31	April 30
Volumetric Annual reporting	January 1 following (or on) permit effective date	January 1 through December 31	April 30

6. CERTIFICATION STATEMENT

Each report shall include the following declaration:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments thereto; and that, based on my inquiry of the individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Executed on the _____ day of _____ at _____.

_____ (Signature)

_____ (Title)

7. OPERATIONS OPTIMIZATION PLAN

On August 12, 2014, the Permittee submitted an Operations Optimization Plan (OOP) in accordance with 22 CCR 60320.122 for the recycled water system. The Permittees must submit an amended OOP to Los Angeles Water Board and DDW for review and approval after the completion of DDW's site inspection (conducted per 22 CCR section 60320.100(g)) and incorporate and clearly identify any changes in operation procedures from startup and commissioning and any other changes as directed by DDW. The OOP must be, at all times, representative of the current operations, maintenance, analytical methods, monitoring, and reporting of the GRRP in accordance with 22 CCR Article 5.2.

8. CLIMATE CHANGE VULNERABILITY ASSESSMENT AND MANAGEMENT PLAN

The Permittee shall submit a Climate Change Plan to the Los Angeles Water Board for the Executive Officer's approval no later than 12 months after the effective date of this Order. The Climate Change Plan shall include an assessment of short-term and long-term vulnerabilities of the AWTF, all treatment systems, the collection system, recycled water distribution system, outfalls, and operations for predicted impacts in order to ensure that the facility operations are not disrupted, compliance with permit conditions is achieved, and receiving waters are not adversely impacted by discharges. Control measures shall include, but are not limited to, emergency procedures, contingency plans, alarm/notification systems, training, backup power and equipment, and the need for planned mitigation measures to ameliorate climate-induced impacts including, but not limited to changing influent and receiving water quality conditions, as well as the impact of rising sea level (where applicable), wildfires, storm surges, and back-to-back severe storms that are expected to become more frequent.

ATTACHMENT F – DDW CONDITIONAL ACCEPTANCE LETTER

State Water Resources Control Board
Division of Drinking Water

October 13, 2025

Susana Arredondo
Executive Officer
Regional Water Quality Control Board Los Angeles Region
320 W 4th St, Suite 200
Los Angeles, CA 90013
(Sent via email: Susana.Arredondo@waterboards.ca.gov)

CONDITIONAL ACCEPTANCE LETTER FOR THE WATER REPLENISHMENT DISTRICT'S LEO J. VANDER LANS ADVANCED WATER TREATMENT FACILITY AND ALAMITOS BARRIER INJECTION PROJECT AND INLAND WELL INJECTION FACILITY ENGINEERING REPORT (1990003-731)

Dear Ms. Arredondo,

This letter transmits the California State Water Resources Control Board, Division of Drinking Water (Division) conditional acceptance of the *Updated Title 22 Engineering Report for the Leo J. Vander Lans Advanced Water Treatment Facility for the Alamitos Barrier Project and Inland Injection Facilities Project* (Engineering Report) dated September 2025.

The Water Replenishment District (District) is the Project Sponsor (22 CCR §60301.670) of the Leo J. Vander Lans Advanced Water Treatment Facility for the Alamitos Barrier Project and Inland Injection Facilities Project (Project). The Project includes (1) Leo J. Vander Lans Advanced Water Treatment Facility (LVLAWTF), (2) Alamitos Barrier injection wells and associated monitoring wells and, (3) Inland Well Facility injection wells and associated monitoring wells. Per Title 22 of the California Code of Regulations, the Project meets the definition of a Groundwater Replenishment Reuse Project (22 CCR §60301.390) using Subsurface Application (22 CCR §60301.840), and therefore is subject to the requirements of 22 CCR §60320.200 through 22 CCR §60320.230. Per 22 CCR §60323, the District is required to receive Division's approval of an Engineering Report that describes the Project's design and means for compliance with Title 22 regulations. The Division provided several rounds of comments on draft Engineering Reports and received the final Engineering Report dated September 2025. The purpose of this letter is to provide conditional acceptance of the Engineering Report and to provide the Los Angeles Regional Water Quality Control Board (RWQCB) with the Division's recommendations for the Project's permit.

Conditional Acceptance Letter October 13, 2025
WRD

The Alamitos Gap Seawater Intrusion Barrier Project[1] (ABP) is one of three Groundwater Recharge Reuse Projects designed to prevent seawater intrusion and replenish groundwater resources in the Los Angeles region. The Project previously operated under the RWQCB Waste Discharge Requirements (WDRs)/Water Reclamation Requirements (WRRs) Order No. R4-2014-0111 to allow groundwater recharge of up to 8 million gallons per day (MGD) of treated recycled water for the ABP. The District submitted a Report of Waste Discharge (ROWD) to the RWQCB on August 31, 2023 for the Project The Project includes the construction of the Inland Well Facility (IWF) on the site of the LVLAWTF to maximize utilization of the 8 MGD production capacity of the LVLAWTF to increase groundwater replenishment in the Central Basin and to improve the operational efficiency of the LVLAWTF by providing the means to sustain stable treated recycled water production rates while balancing IWF injection rates with the natural fluctuations in ABP demand. Generally, the District's goal is to inject the difference between the LVLAWTF production and ABP demand into the IWF wells. The ABP treated recycled water demand has historically fluctuated between 4 to 7 MGD. It should be noted that potable water from Metropolitan Water District (MWD) may be used for blending with LVLAWTF treated recycled water, as needed for recharge into the ABP. MWD's imported water comes from Northern California through the Sacramento – San Joaquin Delta, via the State Water Project, and from the Colorado River via the Colorado River Aqueduct.

The Project's LVLAWTF receives tertiary treated effluent from the Long Beach Water Reclamation Plant (LBWRP) which is operated by the Los Angeles County Sanitation Districts (LACSD). As described in the Engineering Report, LVLAWTF may in the future also receive treated tertiary effluent from LACSD's Los Coyotes Water Reclamation Plant (LCWRP); however, this will require reevaluation of the Engineering Report and consultation with the Division particularly for source control requirements and advanced treatment criteria. Source control requirements are required to be met for the LBWRP based on a memorandum of understanding (Engineering Report, A.8) between LACSD and the District. The advanced treatment process at the LVLAWTF consists of microfiltration (MF), reverse osmosis (RO), advanced oxidation (AOP) with hydrogen peroxide, decarbonation, and post-treatment systems (pH adjustment/corrosivity stabilization/disinfection).

For the Project, the recharge water (22 CCR §60301.685) may consist of a blend of advanced treated water from the existing LVLAWTF and imported water provided by MWD via connection. Per 22 CCR §60320.216, the maximum recycled water contribution (RWC) for the Project will be 1.0 (100%) based on Division's review of the Engineering Report, and therefore diluent water is not required. MWD imported water may be added to make up the difference in flowrate between ABP demand (as determined by LACDPW) and treated recycled water produced by the LVLAWTF.

[1] The Alamitos Gap Seawater Intrusion Barrier's injection wells are owned by the Los Angeles County Department of Public Works (LACDPW) for wells in Los Angeles County and the Orange County Water District (OCWD) for wells in Orange County. Since 1964, the LACDPW has operated and maintained the barrier under the direction of a joint management committee with members from both OCWD and LACDPW.

On June 26, 2013, the District held a public hearing for the LVLAWTF for the RWC increase to 100%, as referenced in the Title 22 Engineering Report. Since there is no proposed increase in RWC, no public hearing is required at this time per 22 CCR §60320.202 guidance. In addition, the Engineering Report requests removal of two ABP monitoring wells (Monitoring Well IDs 100253 and 100254) from the groundwater monitoring program, as they were included in the original permit. The Division has reviewed the Engineering Report with supporting information[2] and accepts the removal of these two monitoring wells.

In accordance with California Water Code §13523, the Division recommends that the RWQCB include the following conditions in the permit for the Project's compliance with Title 22 requirements for indirect potable reuse.

General Requirements

1. The District's Project must comply with 22 CCR Article 5.2 – Indirect Potable Reuse: Groundwater Replenishment – Subsurface Application.

2. Per 22 CCR §60320.200(g), prior to replenishing the groundwater basin(s)[3] with recycled water, the District must demonstrate to the Division that the alarms and associated responses, including automatic shutdown, are functional and in conformance with the Operations Optimization Plan (OOP) during an on-site inspection. The District must repeat this testing on a regular basis, including after any modification of treatment trains, as specified in the OOP.

3. The District must ensure that the entire applied recycled water flow used for the purpose of indirect potable reuse is continuously treated with full advanced treatment meeting Article 5.2 and as detailed in the Engineering Report and OOP. The District must ensure that all treatment processes are operated in a manner providing optimal reduction of all chemicals and contaminants in accordance with 22 CCR §60320.222.

4. Per 22 CCR §60320.200(c), and prior to the operations of the IWF, the District must submit results of the background aquifer sampling electronically via Primary Station Codes[4] (ps-code) to the Division.

5. The demonstrated underground retention time must at all times be representative of hydraulic conditions representative of normal operating conditions in accordance with 22 CCR §60320.208(g).

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[2] See Engineering Report, Section 13.2.3 and 9.1.3.
[3] The District has been operating the ABP and recharging the associated groundwater basin(s) as part of the previous permit (R4-2014-0111) however IWF associated groundwater basin(s) are part of this Engineering Report. Therefore the District's alarm and associated responses needs to demonstrated prior to recharging IWF associated basin(s).
[4] See Report, Table 13-21 for complete list of ps-codes associated with all monitoring wells.

6. Per 22 CCR §60320.208(d) and §60320.224(c), the District must conduct an added or intrinsic tracer study to validate underground retention time in accordance with the Division approved tracer study protocol[5]. The District is conducting a new added tracer study for the ABP to replace previous tracer work as described in the Engineering Report. The District must initiate the intrinsic tracer study for IWF prior to the end of the third month following the start of operations of IWF. Once completed, the District must submit the results of the ABP and IWF tracer studies (Tracer Studies) to the Division for review and approval. In consultation with the Division, the District must update the hydrogeological model with the results of the Tracer Studies. The five-year Engineering Report must incorporate the results of the Tracer Studies.

7. The District must comply with 22 CCR §60320.200(e). The District must implement the following regarding zones of controlled drinking water well construction:

    a. Prior to recharge in IWF[6], the District must adopt a resolution establishing a zone of controlled drinking water well construction ("primary boundary"), and a zone of potential controlled drinking water well construction ("secondary boundary"), including private wells, and state small water system wells, in accordance with 22 CCR §60320.200(e). The construction or existence of irrigation wells with respect to the primary boundary must be included. If any new private wells are discovered within the primary or secondary boundaries, the District must contact the Division.

    b. The District must coordinate, prior to operation of each recharge area and quarterly, with the local well permitting authorities to discuss changes to screening depths or pumping capacity of the nearest production well(s) to ABP and IWF.

    c. Until the Tracer Studies are completed, the District must use a minimum underground retention time of six (6) months[7] as described in the Engineering Report. Once the Tracer Studies are completed, the District must re-evaluate the underground retention time based on the results of the Tracer Studies. If the underground retention time is determined to be lower than six (6) months, then the lower value must be used in consultation with the Division.

    d. Once the Tracer Studies are completed, the District must update the primary and secondary boundaries as needed based on results of the Tracer Studies

[5] The District is conducting two tracer studies. One for ABP and one for IWF. Protocol for these tracer studies were approved on January 10, 2023 (Appendix A.18 and A.19).
[6] The District is recharging in the ABP and is proposing to recharge in the IWF. ABP is an existing operational barrier project however the IWF is planned to be operated once the permit is adopted. Therefore this resolution must be adopted prior to recharge via IWF. The District must also ensure
[7] See Engineering Report, Section 5.2.2.4. The six-month underground retention time is based on the time of travel to the nearest production well for IWF and ABP. The six-month underground retention time is greater than the response retention time of 5-months therefore governs in accordance with 22 CCR §60320.200(e). See Engineering Report, Section 6.

and notify the local well permitting authorities (e.g. Los Angeles County Department of Public Health, City of Long Beach Health Department, etc.) as needed.

8. The District must notify the Division and RWQCB and submit necessary documents for any increase in LVLAWTF design flowrate (greater than 8 MGD), a new source of wastewater (e.g. LACSD's LCWRP), changes to treatment processes (e.g. changing MF filtrate configuration or new MF model, etc.), or additions/removals of monitoring wells, injection wells. For replacement injection wells, the District must notify the Division and discuss impacts to the existing Project hydrogeological model, well control zone boundaries, underground retention time, and response times. If directed by the Division, the District must update the Engineering Report and OOP.

9. If proposing an alternative to any of the requirements in Article 5.2, the District must follow the process described in 22 CCR §60320.230. If directed by the Division to demonstrate public health equivalency, the District must administer an independent advisory panel in consultation with the Division.

10. The District must have and utilize alarms for the LVLAWTF as described in the Engineering Report, OOP, and this conditional acceptance letter. Commissioning must validate and confirm the operation setpoints per 22 CCR §60320.201. A full description of the alarms must be included in the OOP, in accordance with 22 CCR §60320.222.

11. The District must adequately staff LVLAWTF with operational staff. The LVLAWTF must be supervised and operated by persons possessing certificates of appropriate grade as required by the RWQCB. The District must track the expiration dates for all certified operators to ensure certifications are maintained. In addition, the District must staff the LVLAWTF with operators that possess or are working to obtain a valid California-Nevada Section of the American Water Works Association/California Water Environment Association advanced water treatment operator certifications as follows:

    a. Within 36 months of the permit adoption, the District must staff the LVLAWTF with at least one AWT5™ certified Chief Plant Operator and with at least one AWT3™ or higher certified operator available for on-call support for each operating shift.

12. The District must provide for on-going training program[8] to ensure that each operator has been trained in the following during crewed and uncrewed (if any) shifts:

    a. The proper operation of all treatment processes utilized to achieve pathogen and chemical reduction.

    b. Maintenance, calibration, and verification of instrumentation and analyzers.

[8] This may be through contract operations to a third party or District's operators.

c. Control systems, data trending, and the control strategy of plant systems.

d. Incident response and investigation.

e. The California Safe Drinking Water Act, its implementing regulations, and all other relevant regulations.

f. The potential adverse health effects associated with the consumption of drinking water that does not meet California drinking water standards.

13. The maximum recycled municipal wastewater contribution (RWC) for this Project is 1.0 (100%) as described in the Engineering Report and in accordance with 22 CCR §60320.216.

14. The District must optimize LVLAWTF effluent water stabilization treatment to maintain effective geochemical mobilization control in the groundwater impacted by the Project. The process optimization for stabilization treatment must be specified in the OOP and include monitoring of parameters that can potentially cause and/or indicate aggravations for geochemical releases. Furthermore, if directed by the Division or the RWQCB, the District must conduct additional geochemical analysis for the purpose of controlling metal mobilization in the groundwater.

15. Per 22 CCR §60320.200(k), if the District has been directed by the Division or the RWQCB to suspend subsurface application of recycled water, subsurface application of recycled water must not resume until the District has obtained approval from the Division and the RWQCB.

Wastewater Source Control

16. The District must ensure the recycled municipal wastewater used for the Project meets the wastewater source control requirements in accordance with 22 CCR §60320.206.

17. The District through its agreement[9] with the LACSD as the control authority to implement and enforce its EPA-approved Pretreatment Program, must ensure the local limits and water quality monitoring maintained is representative of new source(s) or changes to existing source(s) including new chemical(s) or contaminant(s) discharged to the sewer collection system.

18. The District must ensure that the recycled municipal wastewater used for the Project is from a wastewater management agency[10] that implements and maintains a source control program that includes, at a minimum;

[9] The memorandum of agreement is included in Appendix A.8.
[10] LVLAWTF obtains recycled municipal wastewater from LACSD's Long Beach WRP.

a. An assessment of the fate of Division-specified and RWQCB-specified chemicals and contaminants through the wastewater and recycled municipal wastewater treatment systems. The Division specifies the following chemicals:

   i. Tertiary butyl alcohol (TBA)

   ii. N-Nitrosodimethylamine (NDMA)

b. Chemical and contaminant source investigations and monitoring that focus on Division-specified and RWQCB-specified chemicals and contaminants,

c. An outreach program to industrial, commercial, and residential communities within the portions of the sewage collection agency's service area that flows into the water reclamation plant subsequently supplying the Project, for the purpose of managing and minimizing the discharge of chemicals and contaminants at the source, and

d. A current inventory of chemicals and contaminants identified pursuant to this section, including new chemicals and contaminants resulting from new sources or changes to existing sources, that may be discharged into the wastewater collection system.

Laboratory Analyses

19. In accordance with 22 CCR §60320.204, all laboratory analyses for contaminants having a primary or secondary maximum contaminant level (MCL) must be conducted using a drinking water method[11] approved by the Division for the contaminant and by a laboratory accredited by the State Water Board Environmental Laboratory Accreditation Program (ELAP) for the analytical method used. Analyses for chemicals other than those having primary or secondary MCLs must be described in the District's OOP.

20. Analytical results of all sample analyses completed[12] in a calendar month must be reported to the Division no later than the 10th day of the following month.

    a. The District must use the Division-provided ps-codes[13] to electronically submit the water quality monitoring results for the Project.

[11] As of this letter the following chemicals do not have drinking water methods in the ELAP's field of accreditation HMX, RDX, TNT, and ethylene glycol. These are part of the notification level chemical list.
[12] This refers to final lab results not any preliminary results. In the event being unable to meet this deadline, the District must notify the Division.
[13] See Report, Table 13-21 for complete list of ps-codes associated with all monitoring wells.

b. Laboratory results[14] that cannot be transmitted electronically via ps-codes to California Laboratory Intake Portal (CLIP) must be submitted to the Division in the appropriate reports (e.g. quarterly reports).

c. Data produced and reports submitted for analysis required by Article 5.2 must be generated by a laboratory accredited by ELAP. The laboratory must hold a valid certificate of accreditation for the analytical test methods validated for intended use and approved by the Division.

21. The District must not reduce the monitoring frequency for the chemicals that overlap[15] with constituents of emerging concern in the Recycled Water Policy[16], without the approval of the Division. The District must use the analytical methods described in the approved OOP, and any changes must be approved by the Division.

Advanced Treatment Criteria

22. The AOP must be operated as designed and described in the Engineering Report to meet 22 CCR requirements, achieving a minimum 0.5-log reduction of 1,4-dioxane and meeting notification levels of all chemicals with a Notification Level under the normal full-scale operating conditions.

23. Per 22 CCR §60320.201(h), the District must perform calculations to document proper on-going performance of the reverse osmosis and advanced oxidation processes and report in the quarterly reports. State the percent of results of the quarter's monitoring, conducted pursuant to 22 CCR §60320.201(b) and (e), that did not meet the surrogate or operational parameter limits. State in the quarterly report if the limits were exceeded by greater than 10% of time for each quarter.

Pathogenic Microorganism Control

24. The District must design and operate the Project such that the advanced treated municipal wastewater used for groundwater recharge and replenishment achieves at least 12-log enteric virus reduction, 10-log *Giardia* cyst reduction, and 10-log *Cryptosporidium* oocyst reduction pursuant to 22 CCR §60320.208.

25. Per 22 CCR §60320.208(c), the District must validate each of the treatment processes used to meet the required *Cryptosporidium* oocyst, *Giardia* cyst and virus reduction. The District must include in its approved OOP, the necessary monitoring and calculations that validate the performance of each treatment process's ability to

[14] The District should contact the Division for any required water quality data (e.g. sucralose, 2-chloroethyl vinyl ether, etc.) that cannot be transmitted electronically.
[15] Currently these chemicals are 1,4-dioxane, NDMA, PFOA and PFOS. Future versions of the Recycled Water Policy may have different overlapping chemicals (if any).
[16] The District should contact RWQCB for compliance with the Recycled Water Policy.

achieve its pathogen log reduction value (LRV) as proposed in the Engineering Report and OOP.

Compliance Monitoring and Reporting

26. Per 22 CCR §60320.228, the District must submit the annual report to the Division, and RWQCB no later than six months after the end of each calendar year. Public water systems and drinking water well owners having downgradient sources potentially affected by the Project and within 10 years groundwater travel time from the Project must be notified by direct mail and/or electronic mail of the availability of the annual report.

27. The District must update the Engineering Report to address any changes and submit to the Division and the RWQCB at least every five years.

28. The District must complete compliance monitoring as required by the Division and the RWQCB. If there are duplications or overlap, the District must comply with the more stringent requirement.

29. The District operates a multi-barrier treatment facility in order to comply with the requirements of Article 5.2. Monitoring for the purpose of pathogen log reduction calculation and demonstration must be reported electronically to the Division monthly. Monthly reports are due by the 10th day of the following month. The monitoring and reporting requirements of this letter must be incorporated into the OOP.

    a. For each specific treatment process unit performing within the defined operational parameter limits (as defined in the OOP), the calculated minimum LRV is the LRV attributed to each treatment process for each pathogen unless stated otherwise in this letter. Flow-weighted averaging cannot be used for the purpose of calculating the LRV for any treatment process including between parallel treatment trains of the same process.

    b. The District must report “Yes” or “No” for each day as to whether the total required pathogenic microorganism log reductions (12-logs virus, 10-logs Giardia cyst, and 10-log reduction of Cryptosporidium oocyst have been achieved based on the overall treatment train LRV. The overall treatment train LRV for Cryptosporidium oocyst, Giardia cyst and virus is the sum of LRV for each treatment process for each pathogen. An overall treatment train LRV must be provided daily unless the LVLAWTF is offline for entire 24-hour period.

    c. Per 22 CCR §60320.208(i), if the effectiveness of a treatment train’s ability to reduce enteric virus is less than 10-logs, or Giardia cyst or Cryptosporidium oocyst reduction is less than 8-logs, the District must immediately notify the Division and RWQCB, and discontinue application of recycled water, unless

directed otherwise by the Division or RWQCB. Per 22 CCR §60320.208(h), if the required Cryptosporidium oocyst, Giardia cyst and virus reduction are not met based on the required on-going monitoring detailed in the approved OOP, within 24 hours of being aware, the District must investigate the cause and initiate automatic corrective actions.

d. The District will receive a daily LRV credit of 6-log for each pathogen if a minimum electrical energy dose (EED) of 0.20 kWh/kgal[17] is provided at all times. The District will receive a daily LRV credit of 1-log virus for each month retained underground as demonstrated in accordance with 22 CCR §60320.208(e). The failure to meet the minimum EED of 0.20 kWh/kgal must trigger immediate discontinuation of recycled water application.

e. The combined membrane filter effluent turbidity must not exceed the following limits: (i) 0.2 NTU more than 5% of the time within a 24-hour period[18]; and (ii) 0.5 NTU at any time. Exceedance of turbidity limits[19] must trigger the reliability feature(s) and corresponding corrective action(s) as described in the OOP. Discrete turbidity readings must be recorded at a set interval[20] to determine compliance with the turbidity requirements and limits under 22 CCR §60321(b) and §60301.320. Averaging cannot be utilized for the determination of compliance with turbidity limits.

f. The MF process at LVLAWTF consist of six MF units in the Primary Filtration System (Primary MF) and four MF units in the Backwash Recovery System (Recovery MF). Each MF unit must be equipped with an apparatus to perform direct integrity test (DIT) using a pressure decay test (PDT). The PDT must be performed on each of the MF membrane unit daily (unless the train is offline for the entire day; the PDT must be performed daily even if the unit is operational for partial day) and automatically when turbidity limits of (i) 0.2 NTU more than 5% of the time within a 24-hour period (or an alternative value approved by the Division); and (ii) 0.5 NTU (or an alternative value approved by the Division) at any time are exceeded for any MF unit[21] based on continuous monitoring. A membrane comprehensive integrity verification program must be included in the OOP. The following apply to the PDT:

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[17] See Appendix A.35 titled Trojan's Recommendation on the UV/H_2O_2 System Operating Conditions at WRD's Leo Vander Lans Water Treatment Facility for Meeting the 6-log Virus Inactivation Requirement (May 29, 2024). It should be noted for chemical control requirements of 22 CCR §60320.201 the District has proposed to use a higher EED critical control point of 0.50 kWh/kgal.
[18] See 22 CCR §60321(b) and §60301.320. A 24-hour period needs to be chosen and programmed into SCADA.
[19] Automatic reliability features must trigger if 0.5 NTU is exceeded based on two consecutive measurements.
[20] It is recommended to have interval is set for one third of the filter cycle, in order to properly characterize a regular filter run cycle, but no more then 15-minutes.
[21] For membrane integrity, the turbidity limits that trigger a DIT are based on individual MF unit filtrate turbidity meters from the not combined filtrate turbidity meters as in previous Condition 29(e).

i. The LRV for *Cryptosporidium oocysts* must be calculated and the values recorded after the completion of each PDT. *Giardia cysts* LRV credit is the same value as the calculated LRV for *Cryptosporidium oocysts*. Virus LRV is zero as described in the Engineering Report.

ii. The PDT must have a resolution that is responsive to an integrity breach on the order of 3 µm or less.

iii. Daily calculations of the LRV must be based on a pressure decay rate value with an ending pressure that provides a resolution of 3 µm or less.

iv. The PDT must have a sensitivity to verify an LRV equal to or greater than 4.0-log for Primary MF and 2.75-log for Recovery MF or an alternative value(s) as approved by the Division.

v. If any MF unit fails the PDT based on the Upper Control Limit, then the unit must be isolated, repaired, retested and have acceptable DIT results prior to being placed back into service.

g. Based on the Division letter dated July 19, 2004 titled *Conditional Acceptance Of Increased Flux For Pall USV 6203 And USV-5203; Conditional Acceptance Of Pall Microza UNA-620A Membrane as an Alternative Filtration Technology* the District's existing membrane treatment (Pall Microza UNA-620A) must operate within the limits of (i-ii).

i. Maximum operational flux must not exceed 120 gallons per square foot per day (gfd).

ii. Maximum transmembrane pressure of 43.5 pounds per square inch (psi).

h. The MF LRV credit is the minimum calculated LRV of any online individual MF unit for a given day.

i. The District proposes to follow a tiered monitoring approach for the RO system. Pathogen reduction through the RO system may be demonstrated via the tiered monitoring approach of surrogates[22]. The District must report the calculated surrogate reduction values from all tiers and indicate which tier is used for reporting the RO LRV credit for a day in monthly reports. In addition, the District must include in the monthly reports, the daily average and maximum RO feed and RO permeate for surrogates from all tiers. The District

[22] Currently this includes electrical conductivity, and TOC. The District may propose an alternative surrogate (Strontium, Sulfate, Adenosine triphosphate, etc.) for pathogen reduction for review to the Division and RWQCB. If an alternative surrogate is used, then each RO train must be monitored to determine an LRV as specified for Tier 2.

must apply the logarithmic function as the last step in the calculation for the LRV.

i. Tier 1: Continuous TOC monitoring of the combined RO feed and the combined RO permeate. The RO LRV credit will be calculated based on the average daily TOC reduction. If Tier 1 is unavailable, the RO LRV credit must be determined by Tier 2. Continuous TOC monitoring of the RO treatment train(s) must be conducted at: (1) the combined RO feed stream and (2) combined RO permeate stream and results of which must be used to calculate a daily average TOC reduction by the RO. Daily Tier 1 pathogen LRV credit must be calculated as the daily average TOC log reduction achieved by the RO treatment. If TOC analyzer fails or is unavailable, the RO LRV credit must be determined by Tier 2. If an alternative surrogate is used, then each RO train must be monitored to determine an LRV.

ii. Tier 2: Continuous EC monitoring (at least once every 15-minutes) of the RO treatment must be conducted at: (1) the combined RO feed stream and (2) Individual RO train[23] permeate stream, results of which must be used to calculate a minimum daily EC reduction for each RO train. The RO LRV credit must be calculated based on the minimum daily EC log reduction achieved by any online train.

j. To meet the requirement of 22 CCR §60320.201(b), continuous surrogate monitoring must be conducted to ensure the integrity of the RO system. The permeate of each RO unit must be monitored continuously for the selected surrogate. The minimum and average EC reduction achieved by each train must be calculated and recorded continuously (based on readings taken at least every 15 minutes). The District must describe the RO monitoring program, and how it will indicate RO integrity has been compromised in the OOP. The RO monitoring program must include at least the following elements in the OOP.

[23] LVLAWTF has total of 5 trains that can produce a maximum permeate of 8 MGD. Each train is independently controlled and monitored (EC is measured on each train permeate). Train 1 and 2 are considered the Primary RO trains, with each train consisting of two stages configured in 72:36 array of pressure vessels (stage 1: stage 2). RO Trains 3-5 are each referred to as a "third stage RO train" or "TSRO". Each TSRO train has 22 pressure vessels. Collectively, the RO system as a whole can be described as an array of 72:36:22 pressure vessels. During routine operations, one TSRO train serves as a redundant train, with the other two operating in a duty mode. The Tier 2 LRV must be based on combined influent EC meter and individual Train 1-2 permeate EC meters, and newly installed combined influent EC meter for Trains 3-5 (located downstream of Trains 1-2) and individual permeate EC meters for Trains 3-5.

i. Determination or use of a baseline integrity value at least for each stage in each RO unit[24].

ii. Determination of lower and upper control limits for each surrogate to be used (e.g. EC) for integrity testing using a statistical methodology.

iii. Associated responses (e.g. conductivity profiling) for control limits exceedances.

k. The UVAOP must be operated with continuous monitoring and reliability features that must trigger automatic corrective actions if the following operational parameter limit(s) are exceeded:

i. For any train, complete UV reactor failure including train power or train communication loss.

ii. The influent flowrate of Train 1 exceeds 2.12 MGD or the influent flowrate of Trains 2 and 3 exceeds 2.94 MGD for more than 15 minutes (or another value approved by the Division).

iii. For any train, the EED is less than 0.50 kWh/kgal for more than 15 minutes (or another value approved by the Division).

iv. The combined influent UV Transmittance (UVT) is less than 95% for more than 15 minutes.

v. For combined UVT ≥ 96%, a minimum energy-oxidant dose product (EED × hydrogen peroxide oxidant dose) of 1.0 kWh/kgal*mg/l (or another value approved by the Division).

vi. For combined UVT between 95% and 96%, minimum energy-oxidant dose product of 1.2 kWh/kgal*mg/l (or another value approved by the Division).

vii. The hydrogen peroxide oxidant dose of ≤ 2 mg/l enters the UV system for UVT ≥ 96% for more than 15 minutes, or ≤ 2.4 mg/l enters the UV system for UVT between 95% and 96% for more than 15 minutes (or another value approved by the Division).

l. The hydrogen peroxide dose applied must be monitored using the chemical dosing metering pump and flow meter measurements and recordings. The hydrogen peroxide dose applied must be verified by testing at the inlet to the

[24] Per Engineering Report Figure 3-8, the EC meters monitor the single-stage permeate from Trains 3-5. However, for the two-stage operation of Trains 1-2, the EC meters are currently measuring the combined permeate. As such for Trains 1-2, the District must provide additional EC meters to measure each stage permeate flows individually for the purpose of determining potential integrity issues.

UV reactor using test kits[25] or an alternative method with minimum detection of 0.1 mg/l. The hydrogen peroxide dose calibration, verification procedure, and frequency must be addressed in OOP.

m. At the respective UV system control points, the District must provide continuous monitoring of calculated UV dose, EED, flowrate, train power, and UV transmittance at all times as surrogate and/or operational parameters to indicate whether the minimum chemical reduction (i.e. 0.5-log 1,4-dioxane reduction) criterion is being met. All instrumentation used to measure these parameters must be calibrated per the manufacturers' recommendations.

n. At least weekly, the UVT meter must be inspected and checked against a reference unit to document accuracy. Tolerance and responses (e.g. calibration if tolerance is >2%, etc.) must be included in the OOP.

o. If directed by the Division, the District must monitor and/or calculate the radical scavenging demand as specified in the OOP and monitoring results to be included in the quarterly reports.

p. If directed by the Division, the District must optimize the stabilization process to control any metal mobilization and if needed, conduct additional geochemical analysis[26] for the purpose of controlling any metal mobilization.

Water Quality Monitoring

30. In accordance with 22 CCR §60320.210, 22 CCR §60320.212, and 22 CCR §60320.220, the LVLAWTF advanced treated recycled water must be sampled quarterly for primary drinking water MCLs (Chapter 15 of 22 CCR, Tables 66431-A, 64442, 64443, 64444-A, and 64533-A), total nitrogen, lead, copper and chemicals with Notification Levels[27]. Monitoring for contaminants with secondary MCLs (Chapter 15 of 22 CCR, Tables 64449-A and B) must be conducted annually. The District must, in accordance with 22 CCR §60320.226 and as specified in the OOP, collect the required samples from the monitoring wells. The results must be reported to the Division and the Regional Water Board. The District may reduce monitoring frequency, including reducing monitoring to single aquifer following the Division and Regional Water Board approval based on review water quality data in accordance with 22 CCR §60320.210(b), and 22 CCR §60320.226(e). The District must update the OOP to incorporate any future revisions to chemical monitoring lists (e.g. MCLs, NLs, etc.). The District has provided historical water quality data to support the reduction of monitoring frequencies and discontinuance of monitoring for some

[25] See WRF 04-19, Methods for Detection of Residual Concentrations of Hydrogen Peroxide in Advanced Oxidation Processes (2009) for additional information.
[26] See WRF 5051 Geochemical Considerations for Managed Aquifer Recharge Implementation in Potable Reuse (2022) for additional information.
[27] The current notification level list is available at the SWRCB website. It should be noted that N-nitrosopyrrolidine (NPYR) is no longer part of the notification level list.

contaminants for LVLAWTF advanced treated recycled water and groundwater monitoring wells. The Division has reviewed the water quality data and accepts the reduced monitoring frequency as described in the Engineering Report as summarized in **Attachment A**. For constituents in groundwater monitoring that is either reduced or discontinued contaminants, as described in **Attachment A**, will revert to the frequency as required in 22 CCR §60320.226(b), either (i) upon exceedance of any MCL or NL in the product water based on the average of the initial and confirmation result, or (ii) upon determination by the Division due to increasing trends[28] in concentration of the reduced or discontinued contaminants in the product water.

31. The District must monitor the Division-specified performance indicator constituents for RO and AOP. This monitoring is intended for the optimization of advanced treatment processes and to ensure the Division's goal of protection of public health. The Division specifies Sucralose (or another performance indicator as approved by the Division) and NDMA (or another performance indicator as approved by the Division) as performance indicator constituents for RO and AOP, respectively. These constituents must be monitored quarterly[29] both prior to and after[30] the corresponding treatment process. Data must be included in annual reports including percent reduction for each performance indicator. In the OOP, the District must use sampling data to develop a baseline value, along with lower and upper alarm limits using a statistical methodology to monitor performance of respective processes.

32. The District must implement the following approach in the event of a water quality exceedance as measured at the LVLAWTF advanced treated recycled water in accordance with 22 CCR §60320.210, 22 CCR §60320.212, and 22 CCR §60320.220.

    a. Collect confirmation sample(s) within 72 hours of notification.

    b. If the average of the initial and confirmation sample exceeds the contaminant's MCL or action level, or the confirmation sample is not collected and analyzed, the District must notify the Division and the RWQCB of the exceedance and initiate weekly sampling. Samples are to be used in compliance determination even if recycled water was diverted from indirect potable reuse application. Running four-week average is the arithmetic mean, calculated weekly, of the monitoring results from the previous four weekly samples. First weekly sample is the average of the initial and confirmation sample.

[28] Per 22 CCR §60320.228(a)(3), the District must evaluate detections of monitored chemicals or contaminants, and any observed trends in the monitoring wells in the annual report.
[29] The Division has reduced monitoring from monthly to quarterly based on historical data provided in the Engineering Report, Section 12.2.3.2.
[30] These monitoring locations, frequencies, and methods may differ from SWRCB's Recycled Water Policy requirements.

i. For exceedance of a contaminant whose compliance with its MCL or action level is not based on running annual average in drinking water regulations[31], the District must notify the Division and RWQCB within 24 hours of determination of the exceedance and conduct corrective actions in accordance with 22 CCR §60320.212(d)(1).

ii. For exceedances of a contaminant whose compliance with its MCL is based on running annual average in drinking water regulations (i.e. remaining MCLs), the District must notify the Division and RWQCB of the exceedance and conduct corrective actions in accordance with 22 CCR §60320.212(d)(2).

c. For Total Nitrogen exceedance, the District must follow requirements of 22 CCR §60320.210(a). If the average of the results of four consecutive samples collected pursuant to 22 CCR §60320.210(a)(1) exceeds 10 mg/l total nitrogen, suspend the subsurface application of recycled water.

d. For SMCLs exceedance, the District must follow requirements of 22 CCR §60320.212(e).

e. For notification levels exceedance, the District must notify the Division and RWQCB of the exceedance and conduct corrective actions in accordance with 22 CCR §60320.220(b).

33. The District must implement the approach as described in 22 CCR §60320.226(c) in the event of a single sample result exceeding 80% of the MCL of Nitrate, Nitrite, or Nitrate plus Nitrite MCL as measured in the Project's groundwater monitoring well(s).

Total Organic Carbon

34. Per 22 CCR §60320.218, the LVLAWTF advanced treated recycled water must be sampled prior to replenishment at least weekly for Total Organic Carbon (TOC). The District must report the results of TOC monitoring in the quarterly reports. The District is approved[32] to utilize continuous online analyzer for TOC measurements in lieu of composite samples at this location.

35. The LVLAWTF advanced treated recycled water TOC results must be reported as follows:

a. The average of the last four (4) TOC results must be the average of the last four weekly average results[33];

[31] As of this letter, these are nitrate, nitrite, nitrate plus nitrite, perchlorate, chlorite, asbestos, lead, and copper.
[32] Based on Division's letter dated May 24, 2024. Letter is included in the Appendix A.23-3.
[33] The TOC weekly average using continuous analyzer results is determined as the arithmetic mean of all readings collected within the calendar week.

b. The 20-week running average of all TOC results must be the arithmetic mean of all continuous analyzer results and hourly grab sample results collected within the past 20 calendar weeks.

Operations Optimization Plan

36. The OOP must be, at all times, representative of the current operations, maintenance, and monitoring of the Project pursuant to 22 CCR §60320.222. The District must operate the LVLAWTF in accordance with the approved OOP. Within six months of optimizing treatment processes pursuant to 22 CCR §60320.222(b) and anytime thereafter operations are optimized that result in a change in operation, the District must update the OOP to include such changes in operational procedures and submit the OOP to the Division for review.

37. At a minimum, the OOP must identify and describe the operations, maintenance, analytical methods, monitoring necessary for the Project to meet the requirements of 22 CCR Article 5.2, and the reporting of monitoring results to the Division and RWQCB. This must include the following elements:

    a. Operations plan (including any calculations needed for the validation of unit process's pathogen log reduction credits per 22 CCR §60320.208(c), chemical dosage calculations, injection well back-flushing, start-up and shutdown procedures).

    b. Preventative maintenance program (including equipment repair and replacement, UV lamp fouling, replacement program for membranes, instrumentation maintenance, and calibration).

    c. Cross connection control and product water protection (including prevention of bypass treatment and reversal of flow into the LVLAWTF's product water lines; inspection and reporting procedures for any potential points of vulnerability between the on-site potable water, industrial water, wastewater, recycled water, chemical, or other waste or non-potable systems; procedures to close out construction activities potentially impacting the water or non-water piping systems).

    d. Water quality monitoring program (e.g. analytical methods, associated instrumentation, and ps-codes for monitoring locations).

    e. Contingency plans (e.g. responses to LBWRP process upsets, LVLAWTF process upsets, unit process communication failure, power interruptions, off-spec water, water quality exceedances, and contact information for key personnel and agencies), and emergency response plan.

f. Records (including records related to preventative maintenance program, contingency plan, sample templates for UV lamp age log, TOC results log, and monthly report) and reporting procedures.

g. Staffing plan for crewed and uncrewed operations (if any), which includes information on operator staffing hours, shifts, responsibilities and certification classes. Include a log for tracking expiration dates for operator certifications.

h. Reliability features, which include, at a minimum, the following elements: the alarms that trigger responses other than diversion, retreatment, or shutdown. the alarms that trigger reliability features: diversion, retreatment, or shutdown. For each alarm, include the associated response and the associated instrumentation include the following: instrument tag, description, type (i.e. low, low-low, or critical etc.), trigger value, effect, and time delay.

i. The required frequency of calibration for instrumentation, along with instrumentation tag and description.

38. The District must provide process control quick reference guide for operators in (1) the main treatment control center and (2) in the OOP that include, at a minimum, the following elements:

    a. All alarms that trigger reliability features: diversion, retreatment, or shutdown.

    b. All alarms that trigger responses other than diversion, retreatment, or shutdown.

    c. For each alarm, include the associated response and key instrumentation information. At a minimum, this must include:

        i. Instrument tag and description
        ii. Alarm type (i.e., low-low, low, high, high-high, etc.)
        iii. Alarm setpoint or trigger value and if the setpoint or trigger value is hardcoded
        iv. Alarm effect (e.g., SCADA alarm, automatic diversion, shutdown, etc.)
        v. Alarm time delay
        vi. The required frequency of calibration for instrumentation associated with critical control alarms.

39. The District must update the OOP to incorporate any future revisions to chemical monitoring lists (e.g. MCLs, NLs, etc.).

Cross-Connection Control and Final Effluent Protection

40. The District must implement its cross-connection control program and describe in the cross-connection control program report (CCCPR) practices that ensure no

undesired or unintended reversal of flow of water or other liquids, gases, or other substances into the LVLAWTF's final effluent water lines. This includes meter protection and internal protection from cross-connections. The CCCPR must be updated as needed to ensure that the program is always representative of the current cross-connection control practices at the LVLAWTF.

a. The District must coordinate with the City of Long Beach Department of Health and Human Services to implement the Cross-Connection Control Policy Handbook (CCCPH) and designate a use site supervisor.

b. Revisions to the cross-connection control program, including changes resulting from inspections, must be done in consultation with the designated use site supervisor (or an individual with a valid and current Cross-Connection Control program Specialist certification from a certifying organization recognized by the State Water Board pursuant to the State Water Board's Cross-Connection Control Policy Handbook).

c. The CCCPR must be updated yearly with the results of the annual cross-connection site inspections, testing of backflow preventers, and all applicable corrective actions, and in consultation with the use site supervisor. The CCCPR must be submitted to the Division, RWQCB, and City of Long Beach Department of Health and Human Services. In addition, the City of Long Beach Department of Health and Human Services must be notified of any plumbing changes.

41. The District must, in coordination with the City of Long Beach Utilities Department test the potable meter backflow device(s) on an annual basis and provide results to the City of Long Beach Utilities Department.

42. The District must notify the Long Beach Department of Health and Human Services and the Division of any known or suspected incident of backflow within 24 hours of the determination.

If you have any questions regarding this letter, please contact Faraz Asad at (714) 558-4708 or via email at faraz.asad@waterboards.ca.gov.

Sincerely,

Ginachi Amah

Digitally signed by Ginachi Amah
Date: 2025.10.13 16:47:26 -07'00'

Water Boards

Dr. Ginachi Amah P.E.
Recycled Water Unit Supervisor
Division of Drinking Water
State Water Resources Control Board
500 North Central Ave., Suite 500

Conditional Acceptance Letter October 13, 2025
WRD

Glendale, CA 91203

cc:

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Conditional Acceptance Letter
WRD

October 13, 2025

ATTACHMENT A

Advanced Treatment Monitoring

1. Inorganics with Primary MCLs/Action Level

Constituent/Parameter	Units	Type of Sample	Minimum Frequency of Analysis
Aluminum	ug/L	24-hour comp. or grab	Quarterly[1]
Antimony	ug/L	24-hour comp. or grab	Quarterly[1]
Arsenic	ug/L	24-hour comp. or grab	Quarterly[1]
Asbestos	MFL	24-hour comp. or grab	Every Three Years[2]
Barium	ug/L	24-hour comp. or grab	Quarterly[1]
Beryllium	ug/L	24-hour comp. or grab	Quarterly[1]
Cadmium	ug/L	24-hour comp. or grab	Quarterly[1]
Chromium (Total)	ug/L	24-hour comp. or grab	Quarterly[1]
Chromium VI	ug/L	24-hour comp. or grab	Quarterly
Cyanide	mg/L	24-hour comp. or grab	Quarterly[1]
Fluoride	mg/L	24-hour comp. or grab	Quarterly[1]
Mercury	ug/L	24-hour comp. or grab	Quarterly[1]
Nickel	ug/L	24-hour comp. or grab	Quarterly[1]
Nitrate-N[3]	mg/L	24-hour comp. or grab	Weekly
Nitrite-N[3]	mg/L	24-hour comp. or grab	Weekly
Perchlorate	ug/L	24-hour comp. or grab	Quarterly[1]
Selenium	ug/L	24-hour comp. or grab	Quarterly[1]
Thallium	ug/L	24-hour comp. or grab	Quarterly[1]
Copper	mg/L	24-hour comp. or grab	Quarterly
Lead	mg/L	24-hour comp. or grab	Quarterly

Notes:

1. Proposed monitoring frequency reduction based on Attachment B Table B2 of Appendix B.13 of the approved Title 22 Engineering Report. DDW determined that the monitoring frequency has to be quarterly based on Title 22 Regulations.
2. Monitoring is quarterly. If four consecutive quarterly results for asbestos are below the detection limit of 0.2 MFL, monitoring for asbestos may be reduced to one sample every three years, pursuant with Title 22 Article 5.2 Section 60320.212.
3. Total nitrogen (Nitrate-N, Nitrite-N, Ammonia, and Organic Nitrogen) and Nitrate plus Nitrite as Nitrogen are included in the monitoring program.

4. Constituents/parameters with Secondary MCLs

Constituent/Parameter	Units	Type of Sample	Minimum Frequency of Analysis
Chloride	mg/L	24-hour comp. or grab	Quarterly
Color	ACU	24-hour comp. or grab	Semiannually (Twice a year)[1]
Corrosivity	LSI Unit	24-hour comp. or grab	Semiannually (Twice a year)[1]
Foam Agents (MBAS)	mg/L	24-hour comp. or grab	Semiannually (Twice a year)[1]
Iron	mg/L	24-hour comp. or grab	Semiannually (Twice a year)[1]

Constituent/Parameter	Units	Type of Sample	Minimum Frequency of Analysis
Manganese	ug/L	24-hour comp. or grab	Semiannually (Twice a year)[1]
Methyl-tert-butyl-ether (MTBE)	ug/L	24-hour comp. or grab	Semiannually (Twice a year)[1]
Odor – Threshold	TON	24-hour comp. or grab	Quarterly
Silver	ug/L	24-hour comp. or grab	Semiannually (Twice a year)[1]
Sulfate	mg/L	24-hour comp. or grab	Quarterly
Zinc	ug/L	24-hour comp. or grab	Semiannually (Twice a year)[1]

Notes:
1. Proposed monitoring frequency reduction based on Attachment B Table B3 of Appendix B.13 of the approved Title 22 Engineering Report.
ACU = Angular Color Uniformity
LSI = Langelier Saturation Index

5. Radioactivity

Constituent/Parameter	Units	Type of Sample	Minimum Frequency of Analysis
Combined Radium-226 and Radium-228	pCi/L	24-hour comp. or grab	Quarterly[1]
Gross Alpha Particle Activity (Including Radium- 226 but Excluding Radon and Uranium)	pCi/L	24-hour comp. or grab	Quarterly[1]
Uranium	pCi/L	24-hour comp. or grab	Quarterly[1]
Gross Beta Particle Activity	pCi/L	24-hour comp. or grab	Quarterly[1]
Strontium 90	pCi/L	24-hour comp. or grab	Quarterly[1]
Tritium	pCi/L	24-hour comp. or grab	Quarterly[1]

Notes:

1. Proposed monitoring frequency reduction based on Attachment B Table B4 of Appendix B.13 of the approved Title 22 Engineering Report.

6. Regulated Organics Volatile Organic Chemicals (VOCs)

Constituent/Parameter	Units	Type of Sample	Minimum Frequency of Analysis
Benzene	ug/L	24-hour comp. or grab	Quarterly[1]
Carbon Tetrachloride (CTC)	ug/L	24-hour comp. or grab	Quarterly[1]
1,2-Dichlorobenzene	ug/L	24-hour comp. or grab	Quarterly[1]
1,4-Dichlorobenzene	ug/L	24-hour comp. or grab	Quarterly[1]
1,1-Dichloroethane	ug/L	24-hour comp. or grab	Quarterly[1]
1,2-Dichloroethane (1,2- DCA)	ug/L	24-hour comp. or grab	Quarterly[1]
1,1-Dichloroethylene (1,1- DCE)	ug/L	24-hour comp. or grab	Quarterly[1]
Cis-1,2-Dichloroethylene	ug/L	24-hour comp. or grab	Quarterly[1]

Constituent/Parameter	Units	Type of Sample	Minimum Frequency of Analysis
Trans-1,2-Dichloroethylene	ug/L	24-hour comp. or grab	Quarterly[1]
Dichloromethane	ug/L	24-hour comp. or grab	Quarterly[1]
1,2-Dichloropropane	ug/L	24-hour comp. or grab	Quarterly[1]
1,3-Dichloropropene	ug/L	24-hour comp. or grab	Quarterly[1]
Ethylbenzene	ug/L	24-hour comp. or grab	Quarterly[1]
Methyl-tert-butyl-ether (MTBE)	ug/L	24-hour comp. or grab	Quarterly[1]
Monochlorobenzene (Chorobenzene)	ug/L	24-hour comp. or grab	Quarterly[1]
Styrene	ug/L	24-hour comp. or grab	Quarterly[1]
1,1,2,2-Tetrachloroethane	ug/L	24-hour comp. or grab	Quarterly[1]
Tetrachloroethylene (PCE)	ug/L	24-hour comp. or grab	Quarterly[1]
Toluene	ug/L	24-hour comp. or grab	Quarterly[1]
1,2,4-Trichlorobenzene	ug/L	24-hour comp. or grab	Quarterly[1]
1,1,1-Trichloroethane	ug/L	24-hour comp. or grab	Quarterly[1]
1,1,2-Trichloroethane	ug/L	24-hour comp. or grab	Quarterly[1]
Trichloroethylene (TCE)	ug/L	24-hour comp. or grab	Quarterly[1]
Trichlorofluoromethane	ug/L	24-hour comp. or grab	Quarterly[1]
1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/L	24-hour comp. or grab	Quarterly[1]
Vinyl Chloride (VC)	ug/L	24-hour comp. or grab	Quarterly[1]
Xylenes (m,p)	ug/L	24-hour comp. or grab	Quarterly[1]

Notes:
1. Proposed monitoring frequency reduction based on Attachment B Table B5 of Appendix B.13 of the approved Title 22 Engineering Report.

7. Regulated Organics Non-Volatile Synthetic Organic Constituents (SOCs)

Constituent/Parameter	Units	Type of Sample	Minimum Frequency of Analysis
Alachlor	ug/L	24-hour comp. or grab	Quarterly[1]
Atrazine	ug/L	24-hour comp. or grab	Quarterly[1]
Bentazon	ug/L	24-hour comp. or grab	Quarterly[1]
Benzo(a)pyrene	ug/L	24-hour comp. or grab	Quarterly[1]
Carbofuran	ug/L	24-hour comp. or grab	Quarterly[1]
Chlordane	ug/L	24-hour comp. or grab	Quarterly[1]
2,4-Dichlorophenoxyacetic acid (2,4-D)	ug/L	24-hour comp. or grab	Quarterly[1]
Dalapon	ug/L	24-hour comp. or grab	Quarterly[1]

Constituent/Parameter	Units	Type of Sample	Minimum Frequency of Analysis
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	24-hour comp. or grab	Quarterly[1]
Di (2-ethylhexyl)adipate	ug/L	24-hour comp. or grab	Quarterly[1]
Di(2-ethylhexyl)phthalate (DEHP)	ug/L	24-hour comp. or grab	Quarterly[1]
Dinoseb	ug/L	24-hour comp. or grab	Quarterly[1]
Diquat	ug/L	24-hour comp. or grab	Quarterly[1]
Endothal	ug/L	24-hour comp. or grab	Quarterly[1]
Endrin	ug/L	24-hour comp. or grab	Quarterly[1]
Ethylene Dibromide (EDB)	ug/L	24-hour comp. or grab	Quarterly[1]
Glyphosate	ug/L	24-hour comp. or grab	Quarterly[1]
Heptachlor	ug/L	24-hour comp. or grab	Quarterly[1]
Heptachlor Epoxide	ug/L	24-hour comp. or grab	Quarterly[1]
Hexachlorobenzene	ug/L	24-hour comp. or grab	Quarterly[1]
Hexachlorocyclopentadiene	ug/L	24-hour comp. or grab	Quarterly[1]
Gamma BHC (Lindane)	ug/L	24-hour comp. or grab	Quarterly[1]
Methoxychlor	ug/L	24-hour comp. or grab	Quarterly[1]
Molinate	ug/L	24-hour comp. or grab	Quarterly[1]
Oxamyl	ug/L	24-hour comp. or grab	Quarterly[1]
Pentachlorophenol3	ug/L	24-hour comp. or grab	Quarterly[1]
Picloram	ug/L	24-hour comp. or grab	Quarterly[1]
Polychlorinated Biphenyls (PCBs)	ug/L	24-hour comp. or grab	Quarterly[1]
Simazine	ug/L	24-hour comp. or grab	Quarterly[1]
Thiobencarb	ug/L	24-hour comp. or grab	Quarterly[1]
Toxaphene	ug/L	24-hour comp. or grab	Quarterly[1]
1,2,3-Trichloropropane (TCP)	ug/L	24-hour comp. or grab	Quarterly[1]
2,3,7,8-TCDD (Dioxin)	pg/L	24-hour comp. or grab	Quarterly[1]
2,4,5-TP (Silvex)	ug/L	24-hour comp. or grab	Quarterly[1]

Notes:
1. Proposed monitoring frequency reduction based on Attachment B Table B5 of Appendix B.13 of the approved Title 22 Engineering Report.

8. Disinfection Byproducts

Constituent/Parameter	Units	Type of Sample	Minimum Frequency of Analysis
Total Trihalomethanes (TTHM)[1]	ug/L	24-hour comp. or grab	Quarterly
Bromodichloromethane	ug/L	24-hour comp. or grab	Quarterly
Bromoform	ug/L	24-hour comp. or grab	Quarterly
Chloroform	ug/L	24-hour comp. or grab	Quarterly
Dibromochloromethane	ug/L	24-hour comp. or grab	Quarterly
Haloacetic Acid (five) (HAA5)[2]	ug/L	24-hour comp. or grab	Quarterly[1]
Monochloroacetic acid	ug/L	24-hour comp. or grab	Quarterly[1]
Dichloroacetic acid	ug/L	24-hour comp. or grab	Quarterly[1]
Trichloroacetic acid	ug/L	24-hour comp. or grab	Quarterly[1]
Monobromoacetic acid	ug/L	24-hour comp. or grab	Quarterly[1]
Dibromoacetic acid	ug/L	24-hour comp. or grab	Quarterly[1]
Bromate	ug/L	24-hour comp. or grab	Quarterly[1]
Chlorite	mg/L	24-hour comp. or grab	Quarterly[1]

Notes
1. Total trihalomethanes represent the sum of Bromodichloromethane, Bromoform, Chloroform, and Dibromochloromethane. The monthly average applies to the TTHMs.
2. Haloacetic acid (five) (HAA5) represent the sum of Monochloroacetic acid, Dichloroacetic acid, Trichloroacetic acid, Monobromoacetic acid, and Dibromoacetic acid. The monthly average applies to the HAA5.
3. Proposed monitoring frequency reduction based on Attachment B Table B6 of Appendix B.13 of the approved Title 22 Engineering Report.

9. General Physical and General Mineral

Constituent/Parameter	Units	Type of Sample	Minimum Frequency of Analysis
Calcium	mg/L	24-hour comp. or grab	Quarterly
Potassium	mg/L	24-hour comp. or grab	Semiannually (Twice a year)[1]
Sodium	mg/L	24-hour comp. or grab	Quarterly
Total Hardness	mg/L	24-hour comp. or grab	Quarterly

Notes:
1. Proposed monitoring frequency reduction based on Attachment B Table B7 of Appendix B.13 of the approved Title 22 Engineering Report.

10. Constituents with Notification Level

Constituents	Units	Type of Sample	Minimum Frequency of Analysis
Boron	µg/L	Grab	Quarterly
n-Butylbenzene	µg/L	Grab	Quarterly
sec-Butylbenzene	µg/L	Grab	Quarterly

Constituents	Units	Type of Sample	Minimum Frequency of Analysis
tert-Butylbenzene	µg/L	Grab	Quarterly
Carbon disulfide	µg/L	Grab	Quarterly
Chlorate	µg/L	Grab	Quarterly
2-Chlorotoluene	µg/L	Grab	Quarterly
4-Chlorotoluene	µg/L	Grab	Quarterly
Diazinon	µg/L	Grab	Quarterly
Dichlorodifluoromethane (Freon 12)	µg/L	Grab	Quarterly
1,4-Dioxane	µg/L	Grab	Quarterly
Ethylene glycol	µg/L	Grab	Quarterly
Formaldehyde	µg/L	Grab	Quarterly
HMX	µg/L	Grab	Quarterly
Isopropylbenzene	µg/L	Grab	Quarterly
Manganese	µg/L	Grab	Quarterly
Methyl isobutyl ketone (MIBK)	µg/L	Grab	Quarterly
Naphthalene	µg/L	Grab	Quarterly
n-Nitrosodiethylamine (NDEA)	µg/L	Grab	Quarterly
n-Nitrosodimethylamine (NDMA)	µg/L	Grab	Quarterly
n-Nitrosodi-n-propylamine (NDPA)	µg/L	Grab	Quarterly
Perfluorooctanoic acid (PFOA)	µg/L	Grab	Quarterly
Perfluorooctanesulfonic acid (PFOS)	µg/L	Grab	Quarterly
Perfluorohexane Sulfonic Acid (PFHxS)	µg/L	Grab	Quarterly
Perfluorobutane sulfonic acid (PFBS)	µg/L	Grab	Quarterly
Propachlor	µg/L	Grab	Quarterly
n-Propylbenzene	µg/L	Grab	Quarterly
RDX	µg/L	Grab	Quarterly
Tertiary butyl alcohol (TBA)	µg/L	Grab	Quarterly
1,2,4-Trimethylbenzene	µg/L	Grab	Quarterly
1,3,5-Trimethylbenzene	µg/L	Grab	Quarterly
2,4,6-Trinitrotoluene (TNT)	µg/L	Grab	Quarterly
Vanadium	µg/L	Grab	Quarterly

Notes:

11. Remaining Priority Pollutants

Constituent/Parameter	Units	Type of Sample	Minimum Frequency of Analysis
Pesticides			
Aldrin	ug/L	24-hour comp. or grab	Annually[1]
Dieldrin	ug/L	24-hour comp. or grab	Annually[1]
4,4'-DDD	ug/L	24-hour comp. or grab	Annually[1]
4,4'-DDE	ug/L	24-hour comp. or grab	Annually[1]
4,4'-DDT	ug/L	24-hour comp. or grab	Annually[1]
Alpha-endosulfan	ug/L	24-hour comp. or grab	Annually[1]
Beta-endosulfan	ug/L	24-hour comp. or grab	Annually[1]
Endosulfan sulfate	ug/L	24-hour comp. or grab	Annually[1]
Endrin aldehyde	ug/L	24-hour comp. or grab	Annually[1]
Alpha-BHC	ug/L	24-hour comp. or grab	Annually[1]
Beta-BHC	ug/L	24-hour comp. or grab	Annually[1]
Delta-BHC	ug/L	24-hour comp. or grab	Annually[1]
Acid Extractables			
2,4,6-trichlorophenol	ug/L	24-hour comp. or grab	Annually[1]
P-chloro-m-cresol	ug/L	24-hour comp. or grab	Annually[1]
2-chlorophenol	ug/L	24-hour comp. or grab	Annually[1]
2,4-dichlorophenol	ug/L	24-hour comp. or grab	Annually[1]
2,4-dimethylphenol	ug/L	24-hour comp. or grab	Annually[1]
2-nitrophenol	ug/L	24-hour comp. or grab	Annually[1]
4-nitrophenol	ug/L	24-hour comp. or grab	Annually[1]
2,4-dinitrophenol	ug/L	24-hour comp. or grab	Annually[1]
4,6-dinitro-o-cresol	ug/L	24-hour comp. or grab	Annually[1]
Phenol	ug/L	24-hour comp. or grab	Annually[1]
Metals			
Chromium III	ug/L	24-hour comp. or grab	Annually[1]
Base/Neutral Extractables			
Acenaphthene	ug/L	24-hour comp. or grab	Annually[1]
Benzidine	ug/L	24-hour comp. or grab	Annually[1]
Hexachloroethane	ug/L	24-hour comp. or grab	Annually[1]
Bis(2-chloroethyl)ether	ug/L	24-hour comp. or grab	Annually[1]
2-chloronaphthalene	ug/L	24-hour comp. or grab	Annually[1]
1,3-dichlorobenzene	ug/L	24-hour comp. or grab	Annually[1]
3,3'-dichlorobenzidine	ug/L	24-hour comp. or grab	Annually[1]
2,4-dinitrotoluene	ug/L	24-hour comp. or grab	Annually[1]
2,6-dinitrotoluene	ug/L	24-hour comp. or grab	Annually[1]
1,2-diphenylhydrazine	ug/L	24-hour comp. or grab	Annually[1]
Fluoranthene	ug/L	24-hour comp. or grab	Annually[1]
4-bromophenyl phenyl ether	ug/L	24-hour comp. or grab	Annually[1]
4-chlorophenyl phenyl ether	ug/L	24-hour comp. or grab	Annually[1]
Bis(2-chloroethoxyl)methane	ug/L	24-hour comp. or grab	Annually[1]
Bis(2-chloroisopropyl)ether	ug/L	24-hour comp. or grab	Annually[1]
Hexachlorobutadiene	ug/L	24-hour comp. or grab	Annually[1]

Constituent/Parameter	Units	Type of Sample	Minimum Frequency of Analysis
Isophorone	ug/L	24-hour comp. or grab	Annually[1]
Nitrobenzene	ug/L	24-hour comp. or grab	Annually[1]
N-nitrosodiphenylamine	ug/L	24-hour comp. or grab	Annually[1]
Butyl benzyl phthalate	ug/L	24-hour comp. or grab	Annually[1]
Di-n-butyl phthalate	ug/L	24-hour comp. or grab	Annually[1]
Di-n-octyl phthalate	ug/L	24-hour comp. or grab	Annually[1]
Diethyl phthalate	ug/L	24-hour comp. or grab	Annually[1]
Dimethyl phthalate	ug/L	24-hour comp. or grab	Annually[1]
Benzo(a)anthracene	ug/L	24-hour comp. or grab	Annually[1]
Benzo(b)fluoranthene	ug/L	24-hour comp. or grab	Annually[1]
Benzo(k)fluoranthene	ug/L	24-hour comp. or grab	Annually[1]
Chrysene	ug/L	24-hour comp. or grab	Annually[1]
Acenaphthylene	ug/L	24-hour comp. or grab	Annually[1]
Anthracene	ug/L	24-hour comp. or grab	Annually[1]
1,12-benzoperylene (Benzo(ghi) perylene)	ug/L	24-hour comp. or grab	Annually[1]
Fluorene	ug/L	24-hour comp. or grab	Annually[1]
Phenanthrene	ug/L	24-hour comp. or grab	Annually[1]
1,2,5,6-dibenzanthracene (Dibenzo(a,h)anthracene)	ug/L	24-hour comp. or grab	Annually[1]
Indeno(1,2,3-cd)pyrene	ug/L	24-hour comp. or grab	Annually[1]
Pyrene	ug/L	24-hour comp. or grab	Annually[1]
Volatile Organics			
Acrolein	ug/L	24-hour comp. or grab	Annually[1]
Acrylonitrile	ug/L	24-hour comp. or grab	Annually[1]
Chlorobenzene	ug/L	24-hour comp. or grab	Annually[1]
Chloroethane	ug/L	24-hour comp. or grab	Annually[1]
Methyl chloride	ug/L	24-hour comp. or grab	Annually[1]
Methyl bromide	ug/L	24-hour comp. or grab	Annually[1]
2-chloroethyl vinyl ether	ug/L	24-hour comp. or grab	Annually[1]

Notes:
1. Proposed monitoring frequency reduction based on Attachment B Table B9 of Appendix B.13 of the approved Title 22 Engineering Report.

Groundwater Monitoring for ABP and IWF

1. Groundwater Monitoring

Constituents	Units	Type of Sample	Proposed Minimum Frequency of Analysis[3]	
			Monitoring Wells for Alamitos Barrier Operation (ABP)	Monitoring Wells for Inland Injection (IWF)
Water level elevation[1]	Feet	Grab	Quarterly	Quarterly
Total Residual Chlorine[4]	mg/L	Grab	Request Elimination[2]	Quarterly
Total Organic Carbon (TOC)	mg/L	Grab	Request Elimination[2]	Quarterly
Total coliform	MPN/100mL	Grab	Request Elimination[2]	Quarterly
Biochemical Oxygen Demand (BOD_5) @20C	mg/L	Grab	Request Elimination[2]	Quarterly
Oil and grease	mg/L	Grab	Request Elimination[2]	Quarterly
Nitrate N	mg/L	Grab	Quarterly	Quarterly
Nitrite N	mg/L	Grab	Quarterly	Quarterly
Nitrate plus Nitrite	mg/L	Grab	Quarterly	Quarterly
Total Nitrogen (nitrate-N, nitrite-N, organic nitrogen, and ammonia nitrogen)	mg/L	Grab	Quarterly	Quarterly
Total Suspended Solids (TSS)	mg/L	Grab	Request Elimination[2]	Quarterly
Turbidity	NTU	Grab	Annual	Quarterly
N-Nitrosopyrrolidine (NPYR)[5]	µg/L	Grab	Request Elimination	Request Elimination
Fluoride	µg/L	Grab	Request Elimination[2]	Quarterly
Inorganics with Primary MCLs	µg/L	Grab	Annually/Every Three Years for Asbestos	Quarterly
Constituents/parameters with Secondary MCLs	mg/L NTU	Grab	Request Elimination[2]	Quarterly
Radioactivity	pCi/L	Grab	Annually	Quarterly
Regulated Organic Chemicals	µg/L	Grab	Annually	Quarterly
Disinfection Byproducts (DBPs)	µg/L	Grab	Annually	Quarterly
Remaining General physical and Minerals	µg/L	Grab	Request Elimination[2]	Quarterly
Constituents with Notification Levels [6]	µg/L	Grab	Quarterly/Annually[7]	Quarterly

Constituents	Units	Type of Sample	Proposed Minimum Frequency of Analysis[3]	
			Monitoring Wells for Alamitos Barrier Operation (ABP)	Monitoring Wells for Inland Injection (IWF)
Remaining Priority Pollutants	µg/L	Grab	Biennually[8]/Annually[8]	Quarterly

Notes:
1. Water level elevations shall be measured to the nearest 0.01 feet and referenced to mean sea level.
2. WRD requests elimination of monitoring naturally occurring or anthropogenic constituents with supporting data from January 2010 to July 2022 demonstrating conditions have not significantly changed due to the use of ATW. See Appendix B.13.
3. Monitoring is quarterly, unless two years of supporting data is provided pursuant with Title 22 Article 5.2 Section 60320.220. Constituents with supporting semi-annual, or quarterly data from January 2010 to July 2022 that indicate their respective constituent MCL/NL have never been exceeded in a well are monitored annually in that well. Constituents with supporting annual data from January 2010 to July 2022 that indicates their respective constituent MCL/NL have never been exceeded in a well are monitored every two years (biannually) in that well. See Appendix B.13.
4. Chlorine residual is recommended for elimination since LACSD also samples monitoring wells for chloride to access sea water intrusion and help distinguish between groundwater and ATW.
5. N-Nitrosopyrrolidine is recommended for elimination since there is no regulatory requirement.
6. NDMA and PFBS are not associated with the ATW. NDMA has not been detected above the regulatory limits in the ATW produced by LVLAWTF since 2017. Therefore, as previously reported, these detections appear to be associated with existing background concentrations and not as a result of the use of recycled water from the LVLAWTF.
7. Monitoring is annually for all constituents at monitoring wells for barrier operation, except quarterly for PFOA, PFOS, and PFHxS.
8. Monitoring is biennually for all constituents at monitoring wells for barrier operation, except annual for Chromium III, n-Nitrosodiphenylamine, and Pyrene.

NTU = Nephelometric Turbidity Units

2. Remaining groundwater Inorganics with Primary MCLs

Constituent	Units	Type of Sample	Proposed Minimum Frequency of Analysis	
			Monitoring Wells for Alamitos Barrier Operation	Monitoring Wells for Inland Injection
Aluminum	ug/L	Grab	Annually [2]	Quarterly
Antimony	ug/L	Grab	Annually	Quarterly
Arsenic	ug/L	Grab	Annually	Quarterly
Asbestos	MFL	Grab	Every Three Years[1]	Quarterly
Barium	ug/L	Grab	Annually	Quarterly
Beryllium	ug/L	Grab	Annually	Quarterly
Cadmium	ug/L	Grab	Annually	Quarterly
Chromium (Total)	ug/L	Grab	Annually	Quarterly
Chromium VI	ug/L	Grab	Annually	Quarterly
Copper	ug/L	Grab	Annually [2]	Quarterly
Cyanide	mg/L	Grab	Annually	Quarterly
Fluoride	mg/L	Grab	Annually [2]	Quarterly
Mercury	ug/L	Grab	Annually	Quarterly

Constituent	Units	Type of Sample	Proposed Minimum Frequency of Analysis	
			Monitoring Wells for Alamitos Barrier Operation	Monitoring Wells for Inland Injection
Nickel	ug/L	Grab	Annually	Quarterly
Perchlorate	ug/L	Grab	Annually [2]	Quarterly
Selenium	ug/L	Grab	Annually	Quarterly
Thallium	ug/L	Grab	Annually	Quarterly

Notes:
1. Monitoring is quarterly. If four consecutive quarterly results for asbestos are below the detection limit of 0.2 MFL, monitoring for asbestos may be reduced to one sample every three years, pursuant with Title 22 Article 5.2 Section 60320.212.
2. WRD requests elimination of monitoring naturally occurring or anthropogenic constituents with supporting data from January 2010 to July 2022 demonstrating conditions have not significantly changed due to the use of ATW. See Appendix B.13 of the approved Title 22 Engineering Report. DDW approved annual monitoring instead.

3. Remaining Groundwater Constituents/parameters with Secondary MCLs

Constituent/Parameter	Units	Type of Sample	Proposed Minimum Frequency of Analysis	
			Monitoring Wells for Alamitos Barrier Operation	Monitoring Wells for Inland Injection
Color	ACU	Grab	Request Elimination[1]	Quarterly
Chloride	µg/L	Grab	Request Elimination[1]	Quarterly
Sulfate	µg/L	Grab	Request Elimination[1]	Quarterly
Total Hardness	mg/L	Grab	Request Elimination[1]	Quarterly
Total Dissolved Solids	mg/L	Grab	Request Elimination[1]	Quarterly
Corrosivity	LSI Unit	Grab	Request Elimination[1]	Quarterly
Foam Agents (MBAS)	mg/L	Grab	Request Elimination[1]	Quarterly
Iron	mg/L	Grab	Request Elimination[1]	Quarterly
Manganese	ug/L	Grab	Request Elimination[1]	Quarterly
Methyl-tert-butyl-ether (MTBE)	ug/L	Grab	Request Elimination[1]	Quarterly
Odor – Threshold	TON	Grab	Request Elimination[1]	Quarterly
Silver	ug/L	Grab	Request Elimination[1]	Quarterly
Specific Conductance	uS/m	Grab	Request Elimination[1]	Quarterly
Zinc	ug/L	Grab	Request Elimination[1]	Quarterly

Note:
1. WRD requests elimination of monitoring naturally occurring or anthropogenic constituents with supporting data from January 2010 to July 2022 demonstrating conditions have not significantly changed due to the use of ATW. See Appendix B.13 of the approved Title 22 Engineering Report.

4. Groundwater Radioactivity

Constituent/Parameter	Units	Type of Sample	Proposed Minimum Frequency of Analysis	
			Monitoring Wells for Alamitos Barrier Operation	Monitoring Wells for Inland Injection
Combined Radium-226 and Radium-228	pCi/L	Grab	Annually[1]	Quarterly
Gross Alpha Particle Activity (Including Radium- 226 but Excluding Radon and Uranium)	pCi/L	Grab	Annually[1]	Quarterly
Uranium	pCi/L	Grab	Annually[1]	Quarterly
Gross Beta Particle Activity	pCi/L	Grab	Annually[1]	Quarterly
Strontium 90	pCi/L	Grab	Annually[1]	Quarterly
Tritium	pCi/L	Grab	Annually[1]	Quarterly

Note:
1. Proposed monitoring frequency reduction based on Appendix B.13 of the approved Title 22 Engineering Report. DDW approved annual monitoring instead.

5. Remaining groundwater Regulated Organics Volatile Organic Chemicals (VOCs)

Constituent	Units	Type of Sample	Proposed Minimum Frequency of Analysis	
			Monitoring Wells for Alamitos Barrier Operation	Monitoring Wells for Inland Injection
Benzene	ug/L	Grab	Annually	Quarterly
Carbon Tetrachloride (CTC)	ug/L	Grab	Annually	Quarterly
1,2-Dichlorobenzene	ug/L	Grab	Annually	Quarterly
1,4-Dichlorobenzene	ug/L	Grab	Annually	Quarterly
1,1-Dichloroethane	ug/L	Grab	Annually	Quarterly
1,2-Dichloroethane (1,2- DCA)	ug/L	Grab	Annually	Quarterly
1,1-Dichloroethene (1,1- DCE)	ug/L	Grab	Annually	Quarterly
Cis-1,2-Dichloroethylene	ug/L	Grab	Annually[1]	Quarterly
Trans-1,2-Dichloroethylene	ug/L	Grab	Annually	Quarterly
Dichloromethane	ug/L	Grab	Annually	Quarterly
1,2-Dichloropropane	ug/L	Grab	Annually	Quarterly
1,3-Dichloropropene	ug/L	Grab	Annually	Quarterly

Constituent	Units	Type of Sample	Proposed Minimum Frequency of Analysis	
			Monitoring Wells for Alamitos Barrier Operation	Monitoring Wells for Inland Injection
Ethylbenzene	ug/L	Grab	Annually	Quarterly
Methyl-tert-butyl-ether (MTBE)	ug/L	Grab	Annually[1]	Quarterly
Monochlorobenzene	ug/L	Grab	Annually[1]	Quarterly
Styrene	ug/L	Grab	Annually[1]	Quarterly
1,1,2,2-Tetrachloroethane	ug/L	Grab	Annually	Quarterly
Tetrachloroethylene (PCE)	ug/L	Grab	Annually	Quarterly
Toluene	ug/L	Grab	Annually	Quarterly
1,2,4-Trichlorobenzene	ug/L	Grab	Annually	Quarterly
1,1,1-Trichloroethane	ug/L	Grab	Annually	Quarterly
1,1,2-Trichloroethane	ug/L	Grab	Annually	Quarterly
Trichloroethylene (TCE)	ug/L	Grab	Annually	Quarterly
Trichlorofluoromethane	ug/L	Grab	Annually[1]	Quarterly
1,1,2-Trichloro-1,2,2-Trifluoroethane	ug/L	Grab	Annually[1]	Quarterly
Vinyl Chloride (VC)	ug/L	Grab	Annually	Quarterly
Xylenes (m,p)	ug/L	Grab	Annually[1]	Quarterly

Note:
1. Proposed monitoring frequency reduction based on Appendix B.13 of the approved Title 22 Engineering Report. DDW approved annual monitoring instead.

6. Remaining groundwater Organics Non-Volatile Synthetic Organic Constituents (SOCs)

Constituent	Units	Type of Sample	Proposed Minimum Frequency of Analysis	
			Monitoring Wells for Alamitos Barrier Operation	Monitoring Wells for Inland Injection
Alachlor	ug/L	Grab	Annually[1]	Quarterly
Atrazine	ug/L	Grab	Annually[1]	Quarterly
Bentazon	ug/L	Grab	Annually[11]	Quarterly
Benzo(a)pyrene	ug/L	Grab	Annually	Quarterly
Carbofuran	ug/L	Grab	Annually[1]	Quarterly
Chlordane	ug/L	Grab	Annually	Quarterly
2,4-Dichlorophenoxyacetic acid (2,4-D)	ug/L	Grab	Annually[1]	Quarterly
Dalapon	ug/L	Grab	Annually[1]	Quarterly
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	Grab	Annually[1]	Quarterly

Constituent	Units	Type of Sample	Proposed Minimum Frequency of Analysis	
			Monitoring Wells for Alamitos Barrier Operation	Monitoring Wells for Inland Injection
Di (2-ethylhexyl)adipate	ug/L	Grab	Annually[1]	Quarterly
Di(2-ethylhexyl)phthalate (DEHP)	ug/L	Grab	Annually	Quarterly
Dinoseb	ug/L	Grab	Annually[1]	Quarterly
Diquat	ug/L	Grab	Annually[1]	Quarterly
Endothal	ug/L	Grab	Annually[1]	Quarterly
Endrin	ug/L	Grab	Annually	Quarterly
Ethylene Dibromide (EDB)	ug/L	Grab	Annually[1]	Quarterly
Glyphosate	ug/L	Grab	Annually[1]	Quarterly
Heptachlor	ug/L	Grab	Annually	Quarterly
Heptachlor Epoxide	ug/L	Grab	Annually	Quarterly
Hexachlorobenzene	ug/L	Grab	Annually	Quarterly
Hexachlorocyclopentadiene	ug/L	Grab	Annually	Quarterly
Gamma BHC (Lindane)	ug/L	Grab	Annually	Quarterly
Methoxychlor	ug/L	Grab	Annually[1]	Quarterly
Molinate	ug/L	Grab	Annually[1]	Quarterly
Oxamyl	ug/L	Grab	Annually[1]	Quarterly
Pentachlorophenol	ug/L	Grab	Annually	Quarterly
Picloram	ug/L	Grab	Annually[1]	Quarterly
Polychlorinated Biphenyls (PCBs)	ug/L	Grab	Annually	Quarterly
Simazine	ug/L	Grab	Annually[1]	Quarterly
Thiobencarb	ug/L	Grab	Annually[1]	Quarterly
Toxaphene	ug/L	Grab	Annually	Quarterly
1,2,3-Trichloropropane (TCP)	ug/L	Grab	Annually	Quarterly
2,3,7,8-TCDD (Dioxin)	pg/L	Grab	Annually	Quarterly
2,4,5-TP (Silvex)	ug/L	Grab	Annually[1]	Quarterly

Note:
1. Proposed monitoring frequency reduction based on Appendix B.13 of the approved Title 22 Engineering Report. DDW approved annual monitoring instead.

7. Groundwater Disinfection Byproducts

Constituent/Parameter	Units	Type of Sample	Proposed Minimum Frequency of Analysis	
			Monitoring Wells for Alamitos Barrier Operation	Monitoring Wells for Inland Injection
Total Trihalomethanes (TTHM)[1]	ug/L	Grab	Annually[1]	Quarterly
Bromodichloromethane	ug/L	Grab	Annually[1]	Quarterly
Bromoform	ug/L	Grab	Annually[1]	Quarterly
Chloroform	ug/L	Grab	Annually[1]	Quarterly
Dibromochloromethane	ug/L	Grab	Annually[1]	Quarterly
Haloacetic Acid (five) (HAA5)[2]	ug/L	Grab	Annually[1]	Quarterly
Monochloroacetic acid	ug/L	Grab	Annually[1]	Quarterly
Dichloroacetic acid	ug/L	Grab	Annually[1]	Quarterly
Trichloroacetic acid	ug/L	Grab	Annually[1]	Quarterly
Monobromoacetic acid	ug/L	Grab	Annually[1]	Quarterly
Dibromoacetic acid	ug/L	Grab	Annually[1]	Quarterly
Bromate	ug/L	Grab	Annually[1]	Quarterly
Chlorite	mg/L	Grab	Annually[1]	Quarterly

Note:
1. Proposed monitoring frequency reduction based on Appendix B.13 of the approved Title 22 Engineering Report. DDW approved annual monitoring instead.

8. Remaining General Physical and General Mineral

Constituent/Parameter	Units	Type of Sample	Proposed Minimum Frequency of Analysis	
			Monitoring Wells for Alamitos Barrier Operation	Monitoring Wells for Inland Injection
Calcium	mg/L	Grab	Request Elimination[1]	Quarterly
Potassium	mg/L	Grab	Request Elimination[1]	Quarterly
Sodium	mg/L	Grab	Request Elimination[1]	Quarterly

Notes:
1. Proposed monitoring frequency reduction based on Appendix B.13 of the approved Title 22 Engineering Report.

9. Constituents with Notification Levels

Constituents	Units	Type of Sample	Proposed Minimum Frequency of Analysis	
			Monitoring Wells for Alamitos Barrier Operation	Monitoring Wells for Inland Injection
Boron	µg/L	Grab	Annually	Quarterly
n-Butylbenzene	µg/L	Grab	Annually	Quarterly
sec-Butylbenzene	µg/L	Grab	Annually	Quarterly

Constituents	Units	Type of Sample	Proposed Minimum Frequency of Analysis	
			Monitoring Wells for Alamitos Barrier Operation	Monitoring Wells for Inland Injection
tert-Butylbenzene	µg/L	Grab	Annually	Quarterly
Carbon disulfide	µg/L	Grab	Annually	Quarterly
Chlorate	µg/L	Grab	Annually	Quarterly
2-Chlorotoluene	µg/L	Grab	Annually	Quarterly
4-Chlorotoluene	µg/L	Grab	Annually	Quarterly
Diazinon	µg/L	Grab	Annually	Quarterly
Dichlorodifluoromethane (Freon 12)	µg/L	Grab	Annually	Quarterly
1,4-Dioxane	µg/L	Grab	Annually	Quarterly
Ethylene glycol	µg/L	Grab	Annually	Quarterly
Formaldehyde	µg/L	Grab	Annually	Quarterly
HMX	µg/L	Grab	Annually	Quarterly
Isopropylbenzene	µg/L	Grab	Annually	Quarterly
Manganese	µg/L	Grab	Annually	Quarterly
Methyl isobutyl ketone (MIBK)	µg/L	Grab	Annually	Quarterly
Naphthalene	µg/L	Grab	Annually	Quarterly
n-Nitrosodiethylamine (NDEA)	µg/L	Grab	Annually	Quarterly
n-Nitrosodimethylamine (NDMA)	µg/L	Grab	Annually	Quarterly
n-Nitrosodi-n-propylamine (NDPA)	µg/L	Grab	Annually	Quarterly
Perfluorooctanoic acid (PFOA)	µg/L	Grab	Quarterly	Quarterly
Perfluorooctanesulfonic acid (PFOS)	µg/L	Grab	Quarterly	Quarterly
Perfluorohexane Sulfonic Acid (PFHxS)	µg/L	Grab	Quarterly	Quarterly
Perfluorobutane sulfonic acid (PFBS)	µg/L	Grab	Annually	Quarterly
Propachlor	µg/L	Grab	Annually	Quarterly
n-Propylbenzene	µg/L	Grab	Annually	Quarterly
RDX	µg/L	Grab	Annually	Quarterly
Tertiary butyl alcohol (TBA)	µg/L	Grab	Annually	Quarterly
1,2,4-Trimethylbenzene	µg/L	Grab	Annually	Quarterly
1,3,5-Trimethylbenzene	µg/L	Grab	Annually	Quarterly
2,4,6-Trinitrotoluene (TNT)	µg/L	Grab	Annually	Quarterly

Constituents	Units	Type of Sample	Proposed Minimum Frequency of Analysis	
			Monitoring Wells for Alamitos Barrier Operation	Monitoring Wells for Inland Injection
Vanadium	µg/L	Grab	Annually	Quarterly

10. Remaining Priority Pollutants

Constituent/Parameter	Units	Type of Sample	Proposed Minimum Frequency of Analysis	
			Monitoring Wells for Alamitos Barrier Operation	Monitoring Wells for Inland Injection
Pesticides				
Aldrin	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Dieldrin	ug/L	Grab	Biennually (every other year)[1]	Quarterly
4,4'-DDD	ug/L	Grab	Biennually (every other year)[1]	Quarterly
4,4'-DDE	ug/L	Grab	Biennually (every other year)[1]	Quarterly
4,4'-DDT	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Alpha-endosulfan	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Beta-endosulfan	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Endosulfan sulfate	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Endrin aldehyde	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Alpha-BHC	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Beta-BHC	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Delta-BHC	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Acid Extractables				
2,4,6-trichlorophenol	ug/L	Grab	Biennually (every other year)[1]	Quarterly
P-chloro-m-cresol	ug/L	Grab	Biennually (every other year)[1]	Quarterly
2-chlorophenol	ug/L	Grab	Biennually (every other year)[1]	Quarterly
2,4-dichlorophenol	ug/L	Grab	Biennually (every other year)[1]	Quarterly
2,4-dimethylphenol	ug/L	Grab	Biennually (every other year)[1]	Quarterly
2-nitrophenol	ug/L	Grab	Biennually (every other year)[1]	Quarterly

Constituent/Parameter	Units	Type of Sample	Proposed Minimum Frequency of Analysis	
			Monitoring Wells for Alamitos Barrier Operation	Monitoring Wells for Inland Injection
4-nitrophenol	ug/L	Grab	Biennually (every other year)[1]	Quarterly
2,4-dinitrophenol	ug/L	Grab	Biennually (every other year)[1]	Quarterly
4,6-dinitro-o-cresol	ug/L	Grab	Annually	Quarterly
Phenol	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Metals				
Chromium III	ug/L	Grab	Annually	Quarterly
Base/Neutral Extractables				
Acenaphthene	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Benzidine	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Hexachloroethane	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Bis(2-chloroethyl)ether	ug/L	Grab	Biennually (every other year)[1]	Quarterly
2-chloronaphthalene	ug/L	Grab	Biennually (every other year)[1]	Quarterly
1,3-dichlorobenzene	ug/L	Grab	Biennually (every other year)[1]	Quarterly
3,3'-dichlorobenzidine	ug/L	Grab	Biennually (every other year)[1]	Quarterly
2,4-dinitrotoluene	ug/L	Grab	Biennually (every other year)[1]	Quarterly
2,6-dinitrotoluene	ug/L	Grab	Biennually (every other year)[1]	Quarterly
1,2-diphenylhydrazine	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Fluoranthene	ug/L	Grab	Biennually (every other year)[1]	Quarterly
4-bromophenyl phenyl ether	ug/L	Grab	Biennually (every other year)[1]	Quarterly
4-chlorophenyl phenyl ether	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Bis(2- chloroethoxyl)methane	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Bis(2- chloroisopropyl)ether	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Hexachlorobutadiene	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Isophorone	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Nitrobenzene	ug/L	Grab	Biennually (every other year)[1]	Quarterly
N-nitrosodiphenylamine	ug/L	Grab	Annually	Quarterly

Constituent/Parameter	Units	Type of Sample	Proposed Minimum Frequency of Analysis	
			Monitoring Wells for Alamitos Barrier Operation	Monitoring Wells for Inland Injection
Butyl benzyl phthalate	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Di-n-butyl phthalate	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Di-n-octyl phthalate	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Diethyl phthalate	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Dimethyl phthalate	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Benzo(a)anthracene	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Benzo(b)fluoranthene	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Benzo(k)fluoranthene	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Chrysene	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Acenaphthylene	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Anthracene	ug/L	Grab	Biennually (every other year)[1]	Quarterly
1,12-benzoperylene (Benzo(ghi) perylene)	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Fluorene	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Phenanthrene	ug/L	Grab	Biennually (every other year)[1]	Quarterly
1,2,5,6-dibenzanthracene (Dibenzo(a,h)anthracene)	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Indeno(1,2,3-cd)pyrene	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Pyrene	ug/L	Grab	Annually	Quarterly
Volatile Organics				
Acrolein	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Acrylonitrile	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Chlorobenzene	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Chloroethane	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Methyl chloride	ug/L	Grab	Biennually (every other year)[1]	Quarterly
Methyl bromide	ug/L	Grab	Biennually (every other year)[1]	Quarterly
2-chloroethyl vinyl ether	ug/L	Grab	Biennually (every other year)[1]	Quarterly

Notes:
1. Proposed monitoring frequency reduction based on Appendix B.13 of the approved Title 22 Engineering Report.

ATTACHMENT G – POLLUTANTS WITH NOTIFICATION LEVELS

The following is a list of pollutants with notification levels at the time this permit was adopted. The Permittee shall maintain an updated list of pollutants with notification levels and monitor these pollutants as they are adopted into the California Code of Regulations.

Constituents	Units	Notification Level (NLs)
Boron	mg/L	1
n-Butylbenzene	mg/L	0.26
sec-Butylbenzene	mg/L	0.26
tert-Butylbenzene	mg/L	0.26
Carbon disulfide	mg/L	0.16
Chlorate	mg/L	0.8
2-Chlorotoluene	mg/L	0.14
4-Chlorotoluene	mg/L	0.14
Diazinon	mg/L	0.0012
Dichlorodifluoromethane (Freon 12)	mg/L	1
1,4-Dioxane	mg/L	0.001
Ethylene glycol	mg/L	14
Formaldehyde	mg/L	0.1
Octahydro—1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	mg/L	0.35
Isopropylbenzene	mg/L	0.77
Manganese	mg/L	0.05
Methyl isobutyl ketone (MIBK)	mg/L	0.12
Naphthalene	mg/L	0.017
n-Nitrosodiethylamine (NDEA)	mg/L	0.00001
n-Nitrosodimethylamine (NDMA)	mg/L	0.00001
n-Nitrosodi-n-propylamine (NDPA)	mg/L	0.00001
Perfluorohexanoic Acid (PFHxA)	mg/L	0.001
Perfluorobutane sulfonic acid (PFBS)	mg/L	0.0005
Perfluorohexane Sulfonic Acid (PFHxS)	mg/L	0.000003
Perfluorooctanoic acid (PFOA)	mg/L	0.000004
Perfluorooctanesulfonic acid (PFOS)	mg/L	0.000004
Propachlor	mg/L	0.09
n-Propylbenzene	mg/L	0.26
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	mg/L	0.0003
Tertiary butyl alcohol (TBA)	mg/L	0.012
1,2,4-Trimethylbenzene	mg/L	0.33
1,3,5-Trimethylbenzene	mg/L	0.33
2,4,6-Trinitrotoluene (TNT)	mg/L	0.001
Vanadium	mg/L	0.05

ATTACHMENT H – CEC PHASED MONITORING REQUIREMENTS

The Permittees shall conduct a three-phased monitoring approach for the CEC monitoring parameters required in this Order. This approach includes an initial assessment monitoring phase, a baseline monitoring phase, and a standard operation monitoring phase. The purpose of phased monitoring is to allow the Los Angeles Water Board to review monitoring results for the CEC monitoring required in this Order at each phase and to refine the specific monitoring requirements based on the monitoring results and findings of the previous phase. Each CEC monitoring phase is described in detail below.

The Permittees may submit existing CEC monitoring data for the health-based CECs and performance indicator CECs, surrogates for CECs, and bioanalytical screening tools from the Facility permitted under this Order to satisfy the requirements of the initial assessment or baseline monitoring phase. If the Los Angeles Water Board, in consultation with the State Water Board, determines the existing CEC monitoring data meet the intent of the initial assessment phase, the Los Angeles Water Board may allow the Permittees to initiate the baseline monitoring phase. If the Los Angeles Water Board, in consultation with the State Water Board, determines the existing CEC monitoring data meet the intent of the baseline monitoring phase, the Los Angeles Water Board may allow the Permittees to initiate the standard operation monitoring phase.

1. Initial Assessment Monitoring Phase

The monitoring requirements for the initial assessment phase applies to this facility because this is a new project where the recycled water will be used for direct groundwater injection.

The purpose of the initial assessment phase is to: (1) identify the occurrence of health-based CECs, performance indicator CECs, and surrogates in recycled water for groundwater recharge or reservoir augmentation; (2) determine treatment effectiveness; (3) define the project-specific performance indicator CECs and surrogates to monitor during the baseline monitoring phase; (4) specify the expected removal percentages for performance indicator CECs and surrogates; and (5) gather bioactivity data for ER-α and AhR bioanalytical screening tools to determine the range of responses for the bioassays for standardized water quality monitoring.

The Permittees shall monitor for the constituents in Tables E-13, E-14, and E-15 of the MRP consistent with the initial assessment phase requirements. Following completion of the initial assessment monitoring phase, the Permittee shall submit the data to the Los Angeles Water Board for evaluation and determination of the appropriate monitoring requirements for the baseline monitoring phase.

1.1. Monitoring for Health-Based CECs, Performance Indicator CECs and Surrogates

1.1.1. The Permittee shall conduct an initial assessment monitoring phase consistent with Table H-1 of this attachment for one year for each of the health-based CECs and performance indicator CECs listed in Table E-13 of the MRP

and project specific surrogates identified in Table E-14 of the MRP or other surrogates proposed by the Permittees (and approved by the Executive Officer) that are indicative of CEC removal through individual unit processes.

1.1.2. The Permittees shall evaluate data from performance indicator CECs and surrogates and prepare an updated Table H-2 of this attachment with expected (rather than example) removal percentages for the Facility and submit to the Los Angeles Water Board with the initial assessment monitoring data.

1.1.3. Following each sampling event, the Permittees shall evaluate monitoring results for health-based CECs using the direction in section 4.2 of this attachment and implement appropriate response actions. The Permittees shall also evaluate monitoring results for surrogates and evaluate the suitability of the surrogates.

1.2. Monitoring for Bioanalytical Screening Tools

1.2.1. The Permittees shall conduct an initial assessment monitoring phase consistent with Table H-1 of this attachment for three years for each of the bioanalytical screening tools listed in Table E-15 of the MRP.

1.2.1. Following each sampling event, the Permittees shall evaluate monitoring results for bioanalytical screening tools. The Permittee may elect to follow the response actions for bioanalytical screening tools using the direction in section 4.2 of this attachment, but implementation of the response actions during the initial assessment monitoring phase is not required.

Table H-1. Monitoring Phase Requirements: Subsurface Application

Constituent	Initial Assessment Monitoring Frequency	Baseline Monitoring Frequency	Standard Operation Monitoring Frequency	Monitoring Location	Notes
Health-Based CECs: Refer to Table E-13	Quarterly	Semiannually	Semiannually or Annually	Following treatment prior to release to the aquifer. (EFF-001)	---
Performance Indicator CECs: Refer to Table E-13	Monthly	Monthly or Quarterly	Monthly or Quarterly	1. Prior to RO treatment (PreRO-001) 2. Following treatment prior to release to the aquifer (EFF-001) 3. Following RO and prior to AOP treatment (PreAOP-001)	a

Constituent	Initial Assessment Monitoring Frequency	Baseline Monitoring Frequency	Standard Operation Monitoring Frequency	Monitoring Location	Notes
Surrogates: Refer to Table E-14.	Continuous for online analyzers and weekly for DOC	Continuous for online analyzers and weekly for DOC	Continuous for online analyzers and weekly for DOC	1. Prior to RO treatment (PreRO-001) 2. Following treatment prior to release to the aquifer (EFF-001) 3. Following RO and prior to UV/AOP (PreAOP-001)	a
Bioanalytical Screening Tools: Refer to Table E-15	Quarterly	Quarterly	Semiannually or Annually	Following treatment prior to release to the aquifer. (EFF-001)	---

Footnotes for Table H-1

a. If the Permittee can demonstrate that the RO unit will not substantially remove a CEC, the Permittee may request to monitor for that CEC prior to the AOP, instead of prior to the RO unit.

End of Footnotes for Table H-1

2. Baseline Monitoring Phase

The Permittee shall initiate the baseline monitoring phase upon completion of the initial assessment phase or upon receiving approval from the Regional Water Board to proceed with this phase given the existing data for the Facility meet the intent of the initial assessment phase.

The purpose of the baseline monitoring phase is to: (1) gather occurrence data for health-based CECs; (2) evaluate performance indicator CECs and surrogates and determine treatment effectiveness; (3) gather bioactivity data for ER-α and AhR bioanalytical screening tools and pilot test the framework for response actions; and (4) assess the list of health-based CECs, performance indicator CECs, surrogates, and bioanalytical screening tools and identify an appropriate list of constituents to monitor the removal of CECs and treatment system performance in the standard operation monitoring phase of the Facility.

2.1. Monitoring for Health-Based CECs, Performance Indicator CECs and Surrogates

2.1.1. The Permittee shall conduct a baseline monitoring phase consistent with Table 1 of this attachment for three years for each of the health-based CECs in Table E-13 of the MRP, and performance-based CECs and surrogates identified by the Los Angeles Water Board.

2.1.2. Performance indicator CECs and surrogates that exhibited reduction by unit processes and/or provided an indication of operational performance shall be selected for monitoring in the baseline monitoring phase. Surrogates not reduced through a unit process are not good indicators of the unit's intended performance. For example, soil aquifer treatment may not effectively lower electrical conductivity. Therefore, electrical conductivity may not be a good surrogate for soil aquifer treatment.

2.1.3. If a performance indicator CEC listed in Table E-13 of the MRP is not a good indicator of CEC removal, the Permittees shall propose an alternative performance indicator CEC to monitor that is representative of the constituent group. This performance indicator CEC shall be subject to approval by the Los Angeles Water Board.

2.1.4. The Permittees shall evaluate data from performance indicator CECs and surrogates and prepare an updated Table H-2 with the expected (rather than example) removal percentages for the Facility and submit to the Los Angeles Water Board with the baseline monitoring data.

2.1.5. Following each sampling event, the Permittees shall evaluate monitoring results for health-based CECs using the direction in section 4.2. of this attachment and implement appropriate response actions.

2.2. Monitoring for Bioanalytical Screening Tools

2.2.1. The Permittees shall conduct a baseline monitoring phase consistent with Table 1 of this attachment for one year for each of the bioanalytical screening tools listed in Table E-15 of the MRP.

2.2.2. Following each sampling event, the Permittees shall evaluate monitoring results for bioanalytical screening tools using the direction in section 4.2. of this attachment and implement appropriate response actions.

3. Standard Operation Monitoring Phase

The Permittees shall initiate the standard operation monitoring phase upon completion of the baseline monitoring phase or upon receiving approval from the Los Angeles Water Board to proceed with this phase given the existing data for the Facility.

The purpose of the standard operation monitoring phase is to monitor CECs under standard operating conditions at the Facility. In this phase, the Los Angeles Water Board in consultation with the State Water Board will identify a list of health-based CECs, performance-based CECs, surrogates, and bioanalytical screening tools to monitor based on the Facility's data from the first two monitoring phases.

3.1. Monitoring for Health-Based CECs, Performance Indicator CECs and Surrogates

3.1.1. For the standard operation monitoring phase, the Permittees shall conduct the monitoring requirements in Table 1 of this attachment while the facility is operating.

3.1.2. The Permittees may request removal of a health-based CEC from the required monitoring list if the monitoring results meet the conditions of the minimum threshold level presented in Table 3.

3.1.3. Performance indicator CECs and surrogates that exhibited reduction by a unit process and/or provided an indication of operational performance shall be selected for monitoring of standard operations. If a performance indicator CEC is not a good indicator, the Permittees shall propose an alternative performance indicator CEC representative of the constituent group to monitor. This performance indicator CEC shall be subject to approval by the Los Angeles Water Board.

3.1.4. Monitoring for health-based CECs and performance indicator CECs shall be conducted on a semiannual basis, unless the project demonstrates consistency in treatment effectiveness in removal of CECs, treatment operational performance, and appropriate recycled water quality. These projects may be monitored for health-based CECs and performance indicator CECs on an annual basis.

3.1.5. Following each sampling event, the Permittees shall evaluate monitoring results for health-based CECs using the direction in section 4.2 of this attachment and implement appropriate response actions.

3.1.6. If evaluation of monitoring results indicates a concern, such as finding a health-based CEC above the thresholds described in Table 2 of this attachment or a decline in removal of a performance indicator CEC from the performance levels established during the initial and baseline monitoring phases, the Los Angeles Water Board may require more frequent monitoring to further evaluate the effectiveness of the treatment process. Additional actions may also be warranted, which may include, but are not limited to, resampling to confirm a result, additional monitoring, implementation of a source identification program, toxicological studies, engineering removal studies, and/or modification of facility operation.

3.2. Monitoring for Bioanalytical Screening Tools

3.2.1. The Los Angeles Water Board may remove a bioanalytical screening tool from the required monitoring list if monitoring results meet the conditions of the minimum threshold level presented in Table H-5 of this attachment.

3.2.2. Following each sampling event where bioassay monitoring is required, the Permittees shall evaluate monitoring results for bioanalytical screening tools using the direction in section 4.2. of this attachment and implement appropriate response actions.

3.2.3. Semiannual monitoring for bioanalytical screening tools shall be conducted, unless the project demonstrates consistency in treatment effectiveness in removal of CECs, treatment operational performance, and appropriate recycled water quality. These projects may be monitored for CECs and with bioanalytical screening tools on an annual basis. Monitoring frequencies for CECs and surrogates for standard operation monitoring are specified in Table 1 of this attachment.

4. Evaluation of CECs, Surrogates, and Bioanalytical Screening Tool Monitoring Results

This section describes the approaches for evaluating treatment process performance and health-based CEC and bioanalytical screening tool monitoring results. Monitoring results for performance indicator CECs and surrogates shall be used to evaluate the operational performance of a treatment process and the effectiveness of a treatment process in removing CECs. For evaluation of health-based CEC and bioanalytical screening tool monitoring results, a multi-tiered approach of thresholds and corresponding response actions is specified in section 4.2. and 4.3. of this attachment, respectively. The evaluation of monitoring results shall be included in monitoring reports submitted to the Los Angeles Water Board.

4.1. Evaluation of Performance Indicator CEC and Surrogate Results

4.1.1. The effectiveness of a treatment process to remove CECs shall be evaluated by determining the removal percentages for performance indicator CECs and surrogates. The removal percentage is the difference in the concentration of a compound in recycled water prior to and after a treatment process (e.g., soil aquifer treatment or RO followed by AOPs), divided by the concentration prior to the treatment process and multiplied by 100.

Removal Percentage = ([Xin – Xout]/Xin) (100)

Xin - Concentration in recycled water prior to a treatment process

Xout - Concentration in recycled water after a treatment process

During the initial assessment, the recycled water producer shall monitor performance to determine removal percentages for performance indicator CECs and surrogates. The removal percentages shall be confirmed during the baseline monitoring phase. One example of removal percentages for each application scenario and their associated processes (i.e., soil aquifer treatment or RO/AOPs) is presented in Table 2 of this attachment. The established removal percentages for each project shall be used to evaluate treatment effectiveness and operational performance.

4.1.2. For groundwater recharge using subsurface application, the removal percentage shall be determined by comparing the CEC monitoring parameters before treatment by RO/AOP and after treatment prior to release into the aquifer.

4.2. Evaluation of Health-based CEC Results

The Permittees shall evaluate the health-based CEC monitoring results. To determine the appropriate response actions, the Permittees shall compare measured environmental concentrations (MECs) to their respective monitoring trigger levels (MTLs) listed in Table H-2 of this attachment to determine MEC/MTL ratios. The Permittees shall compare the calculated MEC/MTL ratios to the thresholds specified in Table H-3 and implement the response actions corresponding to the threshold.

Table H-2. Monitoring Trigger Levels and Example Removal Percentages

Constituent/ Parameter	Relevance/ Indicator Type/ Surrogate	Monitoring Trigger Level (µg/L)	Example Removal Percentages	Table Notes
1,4-dioxane	Health	1	---	---
NDMA	Health & Performance	0.010	25-50, >80	a
NMOR	Health	0.012	---	---
PFOS	Health	0.013	---	---
PFOA	Health	0.014	---	---
Sucralose	Performance	---	>90	---
Sulfamethoxazole	Performance	---	>90	---
Electrical Conductivity	Surrogate	---	>90	---
DOC	Surrogate	---	>90	---
UV Absorbance	Surrogate	---	>50	---

Footnotes for Table H-2

a. Treatment using RO, removal percentage is between 25 and 50 percent. For treatment using RO/AOP, removal is greater than 80 percent.

End of Footnotes for Table H-2

Table H-3. MEC/MTL Thresholds and Response Actions for Health-Based CECs

MEC/MTL Threshold	Response Action
If greater than 75 percent of the MEC/MTL ratio results for a CEC are less than or equal to 0.1 during the baseline monitoring phase and/or subsequent monitoring	A) After completion of the baseline monitoring phase, consider requesting removal of the CEC from the monitoring program.
If MEC/MTL ratio is greater than 0.1 and less than or equal to 1	B) Continue to monitor.
If MEC/MTL ratio is greater than 1 and less than or equal to 10	C) Check the data and continue to monitor.
If MEC/MTL ratio is greater than 10 and less than or equal to 100	D) Check the data, resample within 72 hours of notification of the result and analyze to confirm CEC result. Continue to monitor.
If MEC/MTL ratio is greater than 100	E) Check the data, resample within 72 hours of notification of the result and analyze to confirm CEC result. Continue to monitor. Contact the Los Angeles Water Board and DDW discuss additional actions. (Additional actions may include, but are not limited to, additional monitoring, toxicological studies, engineering removal studies, modification of facility operation, implementation of a source identification program, and monitoring at additional locations.)

Footnotes for Table H-3

a. If a CEC also has a notification level. Additional follow-up monitoring may be required by the State Water Board per requirements in Title 22 of the California Code of Regulations

End of Footnotes for Table H-3

4.3. Evaluation of Bioanalytical Screening Tool Results

The Permittees shall evaluate bioanalytical assay monitoring results. During the baseline monitoring phase and standard operation monitoring phase, the Permittees shall determine the appropriate response actions. The Permittees shall compare bioanalytical equivalent concentrations (BEQs) to their respective MTLs listed in Table 4 of this attachment to determine BEQ/MTL ratios. The Permittees shall compare the calculated BEQ/MTL ratios to the thresholds presented in Table 5 of this attachment and implement the response actions corresponding to the threshold.

Table H-4. Required Equivalency Agonists and Monitoring Trigger Levels for Bioanalytical Screening Tools

Constituent/ Parameter	Equivalency Agonist	Monitoring Trigger Level (ng/L)
Estrogen Receptor-α	17-beta-estradiol	3.5
Aryl Hydrocarbon receptor (AhR)	2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD)	0.5

Table H-5. BEQ/MTL Thresholds and Response Actions for Bioanalytical Screening Tools

BEQ/MTL Threshold	Response Action
If BEQ/MTL ratio is consistently less than or equal to 0.15 for ER-α or 1.0 for AhR	A) After completion of the baseline monitoring phase, consider decreasing monitoring frequency or requesting removal of the endpoint from the monitoring program.
If BEQ/MTL ratio is greater than 0.15 and less than or equal to 10 for ER-α or greater than 1.0 and less than or equal to 10 for AhR	B) Continue to monitor.
If BEQ/MTL ratio is greater than 10 and less than or equal to 1,000	C) Check the data, resample within 72 hours of notification of the result and analyze to confirm bioassay result. Continue to monitor.

BEQ/MTL Threshold	Response Action
	Contact the Los Angeles Water Board and DDW to discuss additional actions, which may include, but are not limited to, targeted analytical chemistry monitoring, increased frequency of bioassay monitoring, and implementation of a source identification program.
If BEQ/MTL ratio is greater than 1,000	D) Check the data, resample within 72 hours of notification of the result and analyze to confirm bioassay result. Continue to monitor. Contact the Los Angeles Water Board and DDW to discuss additional actions, which may include, but are not limited to, targeted and/or non-targeted analytical chemistry monitoring, increased frequency of bioassay monitoring, toxicological studies, engineering removal studies, modification of facility operation, implementation of a source identification program, and monitoring at additional locations.