CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2024-0821
FOR
CALIFORNIA WATER SERVICE
REVERSE OSMOSIS BRINE DISCHARGE
KERN RIVER VALLEY DISTRICT LAKELAND STATION 8
KERN COUNTY

This Monitoring and Reporting Program (MRP) is issued pursuant to California Water Code section 13267. The California Water Service (or Discharger) owns and operates a reverse osmosis (RO) water treatment system for the Kern River Valley District Lakeland Station 8 on Warren Way west of Canal Street and just south of Lake Isabella in Kern County. According to the Discharger, the RO water treatment system generates about 13,000 to 21,000 gallons per day (gpd) of brine waste from backwashing, which is discharged to an onsite subsurface leach field for disposal. This MRP describes requirements for monitoring the discharge of RO brine waste to the onsite subsurface leach field. The Discharger shall not implement any changes to this MRP unless and until the Central Valley Regional Water Quality Control Board (Central Valley Water Board) adopts, or the Executive Officer issues, a revised MRP.

Section 13267, subsection (b)(1) of the California Water Code states:

> *"In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."*

Section 13268 of the California Water Code states, in part:

> *"(a)(1) Any person failing or refusing to furnish technical or monitoring program reports as required by subdivision (b) of Section 13267, failing or refusing to furnish a statement of compliance as required by subdivision (b) of Section 13399.2, or falsifying and information provided therein, is guilty of a misdemeanor and may be liable civilly in accordance with subdivision (b).*
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> *(b)(1) Civil liability may be administratively imposed by a regional board in accordance with Article 2.5 (commencing with section 13323) of Chapter 5 for a violation of subdivision (a) in an amount which shall not exceed one thousand dollars ($1,000) for each day in which the violation occurs."*

Pursuant to Section 13267 of the California Water Code, the Discharger shall implement this MRP and shall submit the monitoring reports described herein.

A glossary of terms used in this MRP is included on the last page (Section IV).

I. GENERAL MONITORING REQUIREMENTS

A. FLOW MONITORING

Hydraulic flow rates shall be measured at the monitoring points specified in this MRP. All flow monitoring systems shall be appropriate for the conveyance system (i.e., open channel flow or pressure pipeline) and liquid type. The measurements may be based on flow meter readings or pump run time estimates. The method of measurement must be specified. Flow meters shall be calibrated at the frequency recommended by the manufacturer; typically, at least once per year, and records of calibration shall be maintained for review upon request.

B. MONITORING AND SAMPLING LOCATIONS

Samples shall be obtained at the monitoring points specified in this MRP. The Central Valley Water Board Executive Officer shall approve any proposed changes to sampling locations prior to implementation of the change.

The Discharger shall monitor the following locations to demonstrate compliance with the requirements of this Order:

Table 1 Monitoring Locations

Monitoring Location	Monitoring Location Description
RAW-001	Sample of the raw source water prior to any treatment.
RO-001	Sample of the RO brine waste prior to discharge to the subsurface leach field.
LF-001	Onsite subsurface leach field disposal area.
SB-001	Soil monitoring location within the leach field.

C. SAMPLING AND SAMPLE ANALYSIS

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. Except as specified otherwise in this MRP, grab samples will be considered representative of water, wastewater, soil, solids/sludges and groundwater. The time, date, and location of each sample shall be recorded on the sample chain of custody form. Field test instruments (such as those used to measure pH, temperature, electrical conductivity [EC], dissolved oxygen [DO], wind speed, and precipitation) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;

2. The instruments are field calibrated at the frequency recommended by the manufacturer;
3. The instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are submitted as described in the “Reporting” section of this MRP.

Laboratory analytical procedures shall comply with the methods and holding times specified in the following (as applicable to the medium to be analyzed):

- *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA);
- *Test Methods for Evaluating Solid Waste* (EPA);
- *Methods for Chemical Analysis of Water and Wastes* (EPA);
- *Methods for Determination of Inorganic Substances in Environmental Samples* (EPA);
- *Standard Methods for the Examination of Water and Wastewater* (APHA/AWWA/WEF); and
- *Soil, Plant and Water Reference Methods for the Western Region* (WREP 125).

Approved editions shall be those that are most recently approved for use by the United States Environmental Protection Agency (EPA) or the State Water Resources Control Board (State Water Board), Division of Drinking Water’s Laboratory Accreditation Program (ELAP). The Discharger may propose alternative methods for approval by the Executive Officer. Where technically feasible, laboratory reporting limits shall be lower than the applicable water quality objectives for the constituents to be analyzed.

If monitoring consistently shows no significant variation in a constituent concentration or parameter after at least two years of monitoring, the Discharger may request this MRP be revised to reduce monitoring frequency. The proposal must include adequate technical justification for reduction in monitoring frequency. This monitoring program shall remain in effect unless and until a revised MRP is issued.

II. SPECIFIC MONITORING REQUIREMENTS

A. RAW SOURCE WATER MONITORING (RAW-001)

A sample of the raw source water shall be collected prior to treatment for analysis. At a minimum the samples shall be analyzed for the following:

Table 2 - Raw Water Monitoring

Constituent/Parameter	Units	Sample Type	Monitoring Frequency
pH	std. units	Grab	Annually
Electrical Conductivity	µmhos/cm	Grab	Annually
Total Dissolved Solids	mg/L	Grab	Annually
Nitrate (as N)	mg/L	Grab	Annually
General Minerals (see 1 below)	mg/L	Grab	Once (see 2 below)
Metals (see 3 below)	mg/L	Grab	Once (see 2 below)
Polyfluoroalkyl Substances (PFAS) (see 4 below)	mg/L	Grab	Once (see 2 below)
Radium, Uranium, and Lead Isotopes (see 5 below)	mg/L	Grab	Once (see 2 below)

1. General Mineral analysis shall include: Alkalinity (as CaCo3), bicarbonate (as CaCO3), carbonate (as CaCO3), calcium, chloride, iron, magnesium, manganese, nitrate (as N), phosphorus, sodium, and sulfate.
2. Sample shall be collected once in the year following adoption of this MRP.
3. Metals analysis shall include: arsenic, barium, boron, chromium, molybdenum, strontium, thallium, and vanadium.
4. PFAS analysis shall be by USEPA Method 537 and shall include HFPO-DA (GenX), Perfluorobutanesulfonic acid (PFBAS), Perfluorohexanoic acid (PFHxA), Perfluorononanoic acid (PFNA), Perfluoroctanesulfonic acid (PFOS), and Perfluoroctanoic acid (PFOA).
5. Analysis for Radium-226, Radium-228, Uranium-234, Uranium-235, Uranium-238, Lead-210, Lead-212, and Lead-214.

B. REVERSE OSMOSIS (RO) BRINE WASTE MONITORING (RO-001)

A sample of the RO brine waste shall be collected prior to discharge to the onsite subsurface leach field and analyzed for the following:

Table 3 - RO Brine Waste Monitoring

Constituent/Parameter	Units	Sample Type	Monitoring Frequency
Flow	gpd	Meter (see 1 below)	Daily
pH	std. units	Grab	Quarterly

Constituent/Parameter	Units	Sample Type	Monitoring Frequency
Electrical Conductivity	µmhos/cm	Grab	Quarterly
Total Dissolved Solids	mg/L	Grab	Quarterly
General Minerals (see 2 below)	mg/L	Grab	Semi-Annually (see 3 below)
Metals (see 4 below)	mg/L	Grab	Semi-Annually (see 3 below)
Polyfluoroalkyl Substances (PFAS) (see 5 below)	ng/L	Grab	Semi-Annually (see 3 below)
Radium, Uranium, and Lead Isotopes (see 6 below)	pCi/L	Grab	Semi-Annually (see 3 below)

1. Flow measurement may be metered or estimated based on pump run time or other similar approved method. The method of monitoring shall be reported.
2. General Mineral analysis shall include: Alkalinity (as $CaCO_3$), bicarbonate (as $CaCO_3$), carbonate (as $CaCO_3$), calcium, chloride, iron, magnesium, manganese, nitrate (as N), phosphorus, sodium, and sulfate.
3. Semi-Annual samples shall be collected once in February and once in August.
4. Metals analysis shall include: arsenic, barium, boron, chromium, molybdenum, strontium, thallium, and vanadium.
5. PFAS analysis shall be done by USEPA Method 537 and shall include HFPO-DA (GenX), Perfluorobutanesulfonic acid (PFBAS), Perfluorohexanoic acid (PFHxA), Perfluorononanoic acid (PFNA), Perfluoroctanesulfonic acid (PFOS), and Perfluoroctanoic acid (PFOA).
6. Analysis for Radium-226, Radium-228, Uranium-234, Uranium-235, Uranium-238, Lead-210, Lead-212, and Lead-214.

C. LEACH FIELD MONITORING (LF-001)

The Discharger shall monitor the subsurface leach field on a regular basis and maintain detailed records on general conditions and operating parameters. In general, the monitoring shall be sufficient to ensure even distribution and application of the RO brine waste, and that the disposal area is not saturated and/or damaged by burrowing animals or deep-rooted plants. Inspection of pump controls, and automatic distribution valves, etc. is required to maintain optimum treatment in the disposal area. Monitoring of the subsurface leach field shall include the following:

Table 4 Leach Field Monitoring

Constituent/Parameter	Sample Type	Reporting Frequency
Pump Controls, Automatic Valves, etc. (see 1 below)	Observation	Quarterly
Nuisance Odor Conditions	Observation	Quarterly
Saturated Soils	Observation	Quarterly
Plant Growth	Observation	Quarterly
Burrowing Animals	Observation	Quarterly

1. All pump controls and automatic distribution valves shall be inspected and calibrated for proper operation as recommended by the manufacturer.

D. SOIL MONITORING (SB-001)

The Discharger shall collect soil samples from a boring near the center of the subsurface leach field below the leach field trenches at three feet and five feet below grade for analysis. Soil monitoring within the subsurface leach field shall include the following:

Table 5. Soil Monitoring

Constituent/Parameter	Units	Sample Type	Monitoring Frequency
pH	std. units	Grab (see 1 below)	Annually (see 2 below)
Electrical Conductivity	µmhos/cm	Grab (see 1 below)	Annually (see 2 below)
Chloride	mg/kg	Grab (see 1 below)	Annually (see 2 below)
Nitrate as N	mg/kg	Grab (see 1 below)	Annually (see 2 below)
Cation Exchange Capacity (CEC)	meq/100 grams	Grab (see 1 below)	Annually (see 2 below)
Volatile Organic Compounds (VOCs)	µg/kg	Grab (see 1 below)	Annually (see 2 below)
Total Petroleum Hydrocarbons (TPH)	mg/kg	Grab (see 1 below)	Annually (see 2 below)
Metals (see 3 below)	mg/kg	Grab (see 1 below)	Annually (see 2 below)
Polyfluoroalkyl Substances (PFAS) (see 4 below)	µg/kg	Grab (see 1 below)	Annually (see 2 below)
Radium, Uranium, and Lead Isotopes (see 5 below)	pCi/g	Grab (see 1 below)	Annually (see 2 below)

1. Samples to be collected for analysis at three and five feet below site grade.
2. If no significant impacts are identified after two annual sampling events the Discharger may submit a technical evaluation requesting the Central Valley Water Board to remove this requirement.
3. Metals analysis shall include: arsenic, barium, boron, chromium, molybdenum, strontium, thallium, and vanadium.
4. PFAS analysis shall be done by USEPA Method 537 and shall include HFPO-DA (GenX), Perfluorobutanesulfonic acid (PFBAS), Perfluorohexanoic acid (PFHxA), Perfluorononanoic acid (PFNA), Perfluoroctanesulfonic acid (PFOS), and Perfluoroctanoic acid (PFOA).
5. Analysis for Radium-226, Radium-228, Uranium-234, Uranium-235, Uranium-238, Lead-210, Lead-212, and Lead-214.

III. REPORTING REQUIREMENTS

All monitoring reports should be converted to a searchable Portable Document Format (PDF) and submitted electronically. Documents that are less than 50MB should be emailed to*:* centralvalleyfresno@waterboards.ca.gov. Documents that are 50 MB or larger should be transferred to a CD, DVD, or flash drive and mailed to the following address:

Central Valley Regional Water Quality Control Board
Region 5 – Fresno Office
1685 “E” St.
Fresno, California 93706

To ensure that your submittal is routed to the appropriate staff person, the following information should be included in the body of the email or transmittal sheet:

Program: Non-15
Place ID: 895461
Facility: Cal Water – Lakeland Station 8 RO Discharge
Order: MRP R5-2024-0821
County: Kern

A transmittal letter shall accompany each monitoring report. The letter shall include a discussion of all violations of this MRP during the reporting period and actions taken or planned for correcting each violation. If the Discharger has previously submitted a report describing corrective actions taken and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain a statement by the Discharger or the Discharger’s authorized agent certifying under penalty of perjury that the report is true, accurate and complete to the best of the signer’s knowledge.

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type (e.g., effluent, groundwater, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal

trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the MRP shall be reported in the next scheduled monitoring report.

Laboratory analysis reports shall be included in the monitoring reports. All laboratory reports must also be retained for a minimum of three years. For a discharger conducting any of its own analyses, reports must also be signed and certified by the chief of the laboratory.

Monitoring information shall include the method detection limit (MDL) and the Reporting limit (RL) or practical quantitation limit (PQL). If the regulatory limit for a given constituent is less than the RL (or PQL), then any analytical results for that constituent that are below the RL (or PQL) but above the MDL shall be reported and flagged as estimated.

All monitoring reports that involve planning, investigation, evaluation or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1.

A. ANNUAL MONITORING REPORTS

An Annual Report shall be prepared and submitted to the Central Valley Water Board by **1 February** each year. The Annual Report shall include the following:

1. Names, general responsibilities, and contact information for persons to contact regarding the RO treatment system and subsurface leach field for emergency and routine situations.

2. Tabular summaries of all data collected during the reporting period. If no discharge occurs during the reporting period a letter confirming that no discharge has occurred shall be provided.

3. Copies of all laboratory analytical report(s) and chain of custody form(s) for in-house and contracted laboratory analyses.

4. Scaled site map depicting the RO treatment system, discharge location, boring location, and prominent site features.

5. Calibration log verifying calibration of all handheld monitoring instruments and devices used to comply with the prescribed monitoring program.

6. An evaluation of the performance of the RO treatment system and subsurface leach field, including discussion of capacity issues, nuisance conditions, system problems, and a forecast of flows anticipated in the next year.

7. A summary of any changes in treatment or operation that might affect waste characterization and/or discharge flow rates.

B. CONNECTION CONFIRMATION REPORT

A report shall be submitted within **three years** that details successful connection to the neighboring water system. This report shall include confirmation that the connection is complete and describe the future intended use of the RO treatment system (e.g., emergency backup, decommissioning, etc.). If the RO treatment system is intended for use on a temporary fashion in the future, the report shall describe the conditions that will trigger the system to go online, as well as estimated durations and volumes of discharge. Should the RO treatment system be decommissioned, the report shall include a leach field closure workplan.

Should the continued use of the RO treatment system extend beyond 1 January 2028, the Discharger shall submit a report that evaluates the need for groundwater monitoring for the continued discharge of RO brine to the leach field. If the Executive Officer determines that groundwater monitoring is appropriate, the Discharger shall submit a groundwater monitoring well installation workplan within 60 days of the determination.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order may result in the assessment of Administrative Civil Liability of up to $10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this Central Valley Water Board action may petition the State Water Board for administrative review in accordance with Water Code section 13320, and California Code of Regulations, title 23, section 2050 et seq. The State Water Board must receive the petition by 5:00 p.m. on the 30th day after the date of this Order, except that if the 30th day falls on a Saturday, Sunday or state holiday, the petition must be received by 5:00 p.m. on the next business day. Laws and regulations applicable to filing petitions are published on the Internet (at the address below) and will be provided upon request.

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

The Discharger shall begin implementation of the above monitoring program as of 1 January 2025.

Ordered by: *Digitally signed by Alex S. Mushegan*

For PATRICK PULUPA, Executive Officer

20 December 2024

(Date)

IV. GLOSSARY

EC	Electrical conductivity at 25° C
TDS	Total dissolved solids
NO_3-N	Nitrate as nitrogen
Continuous	The specified parameter shall be measured by a meter continuously.
Daily	Every day except weekends or holidays.
Weekly	Once per week.
Monthly	Once per calendar month.
Quarterly	Once per calendar quarter (Jan-Mar, Apr-Jun, Jul-Sep, and Oct-Dec).
Semiannually	Once every six calendar months (i.e., two times per year) during non-consecutive quarters.
Annually	Once per year.
meq/100 grams	Milliequivalents per 100 grams
mg/L	Milligrams per liter
mg/kg	Milligrams per kilogram
ng/L	Nanograms per liter
pCi/g	Picocurie per gram
pCi/L	Picocurie per liter
µg/kg	Micrograms per kilogram
µg/L	Micrograms per liter
µmhos/cm	Micromhos per centimeter
gpd	Gallons per day
mgd	Million gallons per day
General Minerals	Analysis shall include; alkalinity (as $CaCO_3$), bicarbonate (as$CaCO_3$), calcium, carbonate (as $CaCO_3$), chloride, iron, magnesium, manganese, nitrate as N, phosphate, potassium, sodium, and sulfate.
Metals	Analysis shall include; arsenic, barium, boron, chromium, molybdenum, strontium, thallium, and vanadium.
PFAS	Polyfluoroalkly Substances. Analysis shall include; HFPO-DA (GenX), Perfluorobutanesulfonic acid (PFBAS), Perfluorohexanoic acid (PFHxA), Perfluorononanoic acid (PFNA), Perfluoroctanesulfonic acid (PFOS), and Perfluoroctanoic acid (PFOA).