CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM
ORDER NO. R5-2023-0043

FOR
PREMIER RESOURCE MANAGEMENT, LLC

OPAQUE FACILITY
NORTH ANTELOPE HILLS
KERN COUNTY

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

Premier Resource Management, LLC (hereafter referred to as Discharger) shall not implement any changes to this MRP unless and until the Central Valley Water Board adopts, or the Executive Officer issues, a revised MRP. Changes to a sample location shall be established with concurrence of Central Valley Water Board staff, and a description of the revised stations shall be submitted for approval by the Executive Officer.

This MRP includes monitoring, record-keeping, and reporting requirements. Monitoring requirements include oil field produced wastewater (produced water or discharge) samples and identification of chemicals associated with petroleum exploration and production in order to determine if the Discharger is in compliance with applicable laws, regulations, policies, and Waste Discharge Requirements Order No. R5-2023-0043 (WDRs).

MONITORING

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. All analyses shall be performed in accordance with applicable provisions of the ***Standard Provisions and Reporting Requirements for Waste Discharge Requirements***, dated 1 March 1991 (Standard Provisions).

Field test instruments (such as a pH meter) may be used provided that the operator is trained in the proper use of the instrument and each instrument is serviced and/or calibrated at the recommended frequency by the manufacturer or in accordance with manufacturer instructions.

Analytical procedures shall comply with the methods and holding times specified in the following: *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 approved for use by the United States Environmental Protection Agency or the State Water Board's Environmental Laboratory Accreditation Program (ELAP). The Discharger may propose alternative methods for approval by the Executive Officer.

This MRP can be modified if the Discharger provides sufficient data to support the proposed changes. If monitoring consistently shows no significant variation in magnitude of a constituent concentration or parameter after a statistically significant number of sampling events, the Discharger may request this MRP be revised by the Executive Officer to reduce the number of monitoring locations, monitoring frequency, or to change the list of constituents. The proposal must include adequate technical justification for any revision.

This MRP requires the Discharger to keep and maintain records for five years from the date the monitoring activities occurred and to prepare and submit reports containing the results of monitoring specified below. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge, or when requested by the Central Valley Water Board.

A complete list of substances that are tested for and reported on by the testing laboratory shall be provided to the Central Valley Water Board. All peaks must be reported. In addition, both the method detection limit (MDL) and the practical quantitation limit (PQL) shall be reported. Detection limits shall be equal to or more precise than USEPA methodologies. Analysis with an MDL greater than the most stringent drinking water standard that results in non-detect needs to be reanalyzed with the MDL set lower than the drinking water standard, if possible, or at the lowest detection limit achievable by the laboratory. If the regulatory limit for a given constituent is less than the reporting limit (RL) or PQL, then any analytical results for that constituent below the RL (or PQL), but above the method detection limit (MDL), shall be reported and flagged as estimated. All quality assurance/quality control (QA/QC) samples must be run on the same dates as when samples are actually analyzed. Proper chain of custody procedures must be followed and a copy of the completed chain of custody form shall be submitted with the report. All analyses must be performed by an ELAP certified laboratory.

PRODUCED WATER MONITORING

Produced water samples shall be representative of the volume and nature of the discharge. The Discharger shall maintain all sampling and analytical results: date, exact place, and time of sampling; dates analyses were performed; analytical techniques used; and results of all analyses.

The Discharger shall label all pipelines discharging produced water to the ponds. Identifying labels shall be located within five feet of the pipeline and shall include at least the following: type of water (e.g., produced water), and source of the water (e.g., Well ID, canal, or lease/facility).

If the discharge is intermittent rather than continuous, then on the first day of each such intermittent discharge, the Discharger shall monitor and record data for all of the constituents listed below, after which the frequencies of analysis given in the schedule shall apply for the duration of each such intermittent discharge.

Discharge 001
(Opaque Facility)

The Discharger shall monitor the volume and quality of produced water treated at the Opaque Facility. A representative sample of produced water shall be collected from the Opaque Facility prior to being discharged to Pond No. 1. Produced water monitoring for Discharge 001 shall include at least the following:

Constituent/Parameter	Units	Sample Type	Frequency
Flow to Pond No. 1	bbls/day [1]	Metered [2]	Continuous
Table I – Water Quality Monitoring	Varies	Grab	Quarterly

[1] Barrels per day.
[2] Flow may be measured with an appropriate engineered alternative if approved in writing by the Executive Officer.

Discharge 002
(Pond Samples)

A produced water sample shall be collected from Pond Nos. 2 or 3 at the distal end of the system (Discharge 002). Selection of which pond to be sampled shall be done based on which pond has contained produced water for the longest period of time (i.e., longest retention time) (Discharge 002). Produced water monitoring for Discharge 002 shall include at least the following:

Constituent/Parameter	Units	Sample Type	Frequency
Table I – Water Quality Monitoring	Varies	Grab	Quarterly

SOLID WASTE MONITORING

Solid waste generated at the Facility from production related activities, such as tank or pond maintenance, shall be characterized for disposal. Non-hazardous solid wastes may be disposed on-site, as road or berm construction material, for instance, if such disposal does not pose a threat to water quality or human health and has been authorized by the Executive Officer, in writing, in accordance with the Solid Disposal Specifications (Section D of the WDRs).

Hazardous waste (as defined in California Code of Regulations (CCR), title 22, section 66261.1) and designated wastes (as defined in California Water Code (CWC) section 13173) shall be properly disposed at a Facility permitted to accept the waste.

Solid wastes disposed off-site shall be transported to an appropriately permitted facility.

Solid waste volumes, disposal methods, disposal facilities, and analytical results from waste characterization shall be reported in the subsequent quarterly and annual monitoring reports.

CHEMICAL AND ADDITIVE MONITORING

The Discharger shall monitor all chemicals and additives used during petroleum exploration, production, and/or treatment that have the potential to be in the produced water used for irrigation. Chemical and additive monitoring shall include at least the following:

Requirement	Frequency
A list of all chemicals and additives used.	Quarterly
Volume and mass of each chemical and additive used in gallons and kilograms.	Quarterly
The mass of each solid chemical and additive used in grams or kilograms (if dissolved into a solution, provide resulting solution concentration or ratio).	Quarterly
A list of the leases and/or facilities where the chemicals and additives are being used.	Quarterly
Safety data sheets for each chemical and additive.	Annually

Monitoring and reporting of chemical additives may be reduced at the discretion of the Assistant Executive Officer.

FACILITY MONITORING

Permanent markers in ponds shall be in place with calibrations indicating the water level at design capacity and available operational freeboard (two feet minimum required). The freeboard shall be monitored **monthly** on all ponds to the nearest tenth of a foot.

Annually, prior to the anticipated rainy season, **but no later than 30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess repair and maintenance needed for: drainage control systems; slope failure; groundwater monitoring wells, or any change in site conditions that could impair the integrity of the waste management unit or precipitation and drainage control structures; and shall assess preparedness for winter conditions including, but not limited to, erosion and sedimentation control. The Discharger shall take photos of any problems areas before and after repairs. Any necessary construction, maintenance, or repairs **shall be completed by 31 October**. Annual facility inspection reporting **shall be submitted by 30 November**.

The Discharger shall inspect all precipitation diversion and drainage facilities for damage **within 7 days following major storm events** (e.g., a storm that causes continual runoff for at least one hour) capable of causing flooding, damage, or significant erosion. The Discharger shall take photos of any problem areas before and after repairs. Necessary repairs **shall be commenced within 30 days of the inspection**. Notification and reporting requirements for major storm events shall be conducted as required in Reporting Requirements of this MRP.

The Discharger shall monitor and record on-site rainfall data using an automated rainfall gauge, or subject to Executive Officer approval other acceptable gauge/monitoring arrangement, or a weather monitoring station within three miles of the facility. Data shall be used in establishing the severity of storm events and wet seasons for comparison with design parameters used for waste management unit design and conveyance and drainage design. Daily data and on-site observation shall be used for establishing the need for inspection and repairs after major storm events. Rainfall data **shall be reported in the quarterly monitoring reports**, as required by this MRP.

REPORTING REQUIREMENTS

All monitoring results shall be submitted to the Central Valley Water Board, which are due as follows:

Monitoring Report	**Due Date**
First Quarter Monitoring Report: January – March	**1 May**
Second Quarter Monitoring Report: April – June	**1 August**
Third Quarter Monitoring Report July - September	**1 November**
Fourth Quarter Monitoring Report October – December	**1 February**
Annual Monitoring Report:	**1 February**
Facility Inspection Report:	**30 November**

A transmittal letter shall accompany each monitoring report. The transmittal letter shall discuss any violations that occurred during the reporting period and all actions taken or planned for correcting violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions or a time schedule for implementing the corrective actions, reference to the previous correspondence is satisfactory. **Reports shall be submitted whether or not there is a discharge.**

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible for all historical and current data. The data shall be summarized in such a manner that illustrates clearly, whether the Discharger complies with the WDRs.

If the Discharger monitors any constituent at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the monitoring reports. Such increased frequency shall be indicated on the monitoring reports.

A. All monitoring reports shall comply with the signatory requirements in Standard Provision B.3. All monitoring reports that involve planning, investigation, evaluation, 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.

B. Reports submitted to the Central Valley Water Board

The Discharger shall submit copies of all monitoring reports, work plans, and technical reports to the following:

1. Electronic mail to CentralValleyFresno@waterboards.ca.gov.

2. Over the Internet to the State Water Board Geographic Environmental Information Management System database (GeoTracker) (http://www.waterboards.ca.gov/ust/electronic_submittal/index.shtml)

   A frequently asked question document for GeoTracker can be found at: (http://www.waterboards.ca.gov/ust/electronic_submittal/docs/faq.pdf)

   Electronic submittals to GeoTracker shall comply with GeoTracker standards and procedures, as specified on the State Water Board's web site. When appropriate, data shall be submitted in EDF format directly to GeoTracker.

   The following information is to be included on all monitoring reports and report transmittal letters:

   Premier Resource Management, LLC
   Opaque Facility
   North Antelope Hills Oil Field
   Waste Discharge Requirements Order No. R5-2023-0043
   GeoTracker Site Global ID: WDR100052453
   CIWQS Place ID: 868115

B. All Quarterly Monitoring Reports shall include, at a minimum, the following:

Produced Water Reporting:

1. Tabular summary of current and historical analytical results for Discharges 001 and 002.
2. Tabular summary of current and historical flow data for Discharges 001 and 002.
3. For each month of the quarter, calculation monthly effluent flow and the historical monthly effluent flow for the last 12-months.
4. For each quarter, include a current and historical table for each effluent sample point for EC, boron, chloride, and sodium.

Solid Waste Reporting:

1. The results of solid waste monitoring, including the nature, volume, and weight in dry tons of solid waste produced during the quarter.
2. Analytical results characterizing the solid waste, and particularly, whether the waste is hazardous as defined in CCR, title 22, section 66261.1).
3. The method of disposal and disposal locations of the solid wastes.

4. If wastes are hauled to a disposal facility, evidence that the disposal facility is properly permitted.

Chemical and Additive Reporting:

1. List of all chemicals and additives that were used during the quarter.
2. Tabular summary of current and historical monthly volume and mass for all chemicals and additives.
3. List of all leases and facilities where chemicals and additives are being used.

Facility Reporting:

1. Monthly freeboard results.
2. The results of Facility inspections conducted during the quarter.
3. Rainfall data.

Laboratory Reports:

1. Laboratory reports submitted in compliance with this MRP shall be accompanied by an **Excel file** that includes the analytical data found in the laboratory report. Excel files need to be generated by the laboratory, or compiled by the Discharger. At a minimum, the Excel file shall include the constituent name, sample location, sample name, sample date, analysis date, analytical method, result, unit, MDL, RL, CASRN, and dilution factor. Excel files shall either be mailed to the Central Valley Water Board Office on an electronic storage device, or sent via electronic mail to CentralValleyFresno@waterboards.ca.gov. Either method of delivery needs to include, at a minimum, a copy of the transmittal letter.

C. Annual Monitoring Reports, in addition to the above, by 1 February of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

Facility Information:

1. The names and general responsibilities of all persons employed to operate the produced water treatment systems.
2. The names and telephone numbers of persons to contact regarding the Facility for emergency and routine situations.
3. A statement certifying when the flow meters and other monitoring instruments and devices were last calibrated, including identification of the person who performed the calibration (Standard Provision C.4).
4. A summary of all spills/releases, if any, that occurred during the year, tasks undertaken in response to the spills, and the results of the tasks undertaken.
5. A summary of all leases, wells, and facilities that generated produced water that was discharged to the Opaque Facility and ponds.
6. A summary (i.e., flow diagram, or description) that clearly illustrates all processes and locations for produced wastewater during extraction, treatment, storage, and disposal.
7. A map of the following:
    - Facility(s) within the oil field,
    - Facility(s)/lease(s) boundaries, and

- Produced wastewater distribution network.

Requesting Administrative Review by the State Water Board. Any person aggrieved by an action of the Central Valley Water Board that is subject to review as set forth in Water Code section 13320(a), may petition the State Water Board to review the action. Any petition must be made in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 and following. The State Water Board must receive the petition within thirty (30) days of the date the action was taken, except that if the thirtieth day following the date the action was taken falls on a Saturday, Sunday, or state holiday, then the State Water Board must receive the petition by 5:00 p.m. on the next business day.
Copies of the laws and regulations applicable to filing petitions may be found on the internet or will be provided upon request.

(http://www.waterboards.ca.gov/public_notices/petitions/water_quality/index.shtml)

Modifications. Any modification to this Monitoring and Reporting Program shall be in writing and approved by the Assistant Executive Officer, including any extensions. Any written extension request by the Discharger shall include justification for the delay. ·

This monitoring and reporting program shall be effective on the effective date of the WDRs.

Ordered by: Patrick Pulupa Date: 2023.10.25 21:35:55 -07'00'

PATRICK PULUPA, Executive Officer

Table I – Water Quality Monitoring

Parameters	Units	US EPA or other Method	Reporting Frequency
Field Parameters			
Temperature	^oF[1]	Meter	Quarterly
Electrical Conductivity	µmhos/cm[2]	Meter	Quarterly
pH	pH units	Meter	Quarterly
Monitoring Parameters			
Total Dissolved Solids (TDS)	mg/L[3]	160.1	Quarterly
Total Suspended Solids (TSS) [4]	mg/L	160.2	Quarterly
Total Organic Carbon (TOC)	mg/L	415.3	Quarterly
Electrical Conductivity	µmhos/cm	2510B	Quarterly
Boron, dissolved	mg/L	6010B	Quarterly
Standard Minerals			
Alkalinity as CaCO3	mg/L	310.1	Quarterly
Bicarbonate Alkalinity as CaCO3	mg/L	310.1	Quarterly
Carbonate Alkalinity as CaCO3	mg/L	310.1	Quarterly
Hydroxide Alkalinity as CaCO3	mg/L	310.1	Quarterly
Sulfate, dissolved	mg/L	300.0	Quarterly
Total Kjeldahl Nitrogen	mg/L	351.3	Quarterly
Nitrogen, Total	mg/L	440.0	Quarterly
Nitrate-N, dissolved	mg/L	300.0	Quarterly
Nitrite as N	mg/L	353.2	Quarterly
Ammonia as N	mg/L	350.1	Quarterly
Ammonium as N	mg/L	350.2	Quarterly
Calcium, dissolved	mg/L	6010B	Quarterly
Magnesium, dissolved	mg/L	6010B	Quarterly
Sodium, dissolved	mg/L	6010B	Quarterly
Potassium	mg/L	6010B	Quarterly
Chloride	mg/L	300.0	Quarterly
Semi-Volatile Organic Compounds[5]	µg/L [5]	8270-SIM	Quarterly
Total Petroleum Hydrocarbons (TPH)	µg/L	418.1	Quarterly
Volatile Organic Compounds			
Full Scan (See Table II)	µg/L	8260B	Quarterly
Stable Isotopes			
Oxygen (^{18}O)	o/oo [6]	900.0	Quarterly
Deuterium (Hydrogen 2, ^2H, or D)	o/oo	900.0	Quarterly
Radionuclides			

Table I – Water Quality Monitoring

Parameters	Units	US EPA or other Method	Reporting Frequency
Radium-226	pCi/L [7]	SM[8] 7500-Ra	Quarterly
Radium-228	pCi/L	SM 7500-Ra	Quarterly
Gross Alpha particle (excluding radon and uranium)	pCi/L	SM 7110	Quarterly
Uranium	pCi/L	200.8	Quarterly
Oil and Grease	mg/L	1664A	Quarterly
Constituents of Concern			
Lithium	mg/L	200.7	Quarterly
Strontium	mg/L	200.7	Quarterly
Iron	mg/L	200.8	Quarterly
Manganese	mg/L	200.8	Quarterly
Antimony	mg/L	200.8	Quarterly
Arsenic	mg/L	200.8	Quarterly
Barium	mg/L	200.8	Quarterly
Beryllium	mg/L	200.8	Quarterly
Cadmium	mg/L	200.8	Quarterly
Chromium (total)	mg/L	200.8	Quarterly
Chromium (hexavalent)	mg/L	7196A	Quarterly
Cobalt	mg/L	200.8	Quarterly
Copper	mg/L	200.8	Quarterly
Lead	mg/L	200.8	Quarterly
Mercury	mg/L	7470A	Quarterly
Molybdenum	mg/L	200.8	Quarterly
Nickel	mg/L	200.8	Quarterly
Selenium	mg/L	200.8	Quarterly
Silver	mg/L	200.8	Quarterly
Thallium	mg/L	200.8	Quarterly
Vanadium	mg/L	200.8	Quarterly
Zinc	mg/L	200.8	Quarterly
Oil Production and Process Chemicals and Additives	mg/L	As Appropriate [9]	Quarterly

[1] Degrees Fahrenheit.
[2] Micromhos per centimeter.
[3] Milligrams per liter .
[4] TSS is not required for groundwater monitoring.
[5] Micrograms per liter.
[6] Parts per thousand.
[7] Picocuries per liter
[8] Standard Methods

[9] Appropriate analytical methods may be proposed by the Discharger but are subject to the approval of the Assistant Executive Officer.

Table II – Full Scan for Volatile Organic Compounds (Method 8260B)

Constituent	CASRN	Constituent	CASRN	Constituent	CASRN
Acetone	67-64-1	1,3-Dichlorobenzene	541-73-1	Methylene chloride	75-09-2
Acetonitrile	75-05-8	1,4-Dichlorobenzene	106-46-7	Methyl methacrylate	80-62-6
Acrolein (Propenal)	107-02-8	1,4-Dichlorobenzene-d (IS)		4-Methyl-2-pentanone (MIBK)	108-10-1
Acrylonitrile	107-13-1	cis-1,4-Dichloro-2-butene	1476-11-5	Naphthalene	91-20-3
Allyl alcohol	107-18-6	trans-1,4-Dichloro-2-butene	110-57-6	Nitrobenzene	98-95-3
Allyl chloride	107-05-1	Dichlorodifluoromethane	75-71-8	2-Nitropropane	79-46-9
Benzene	71-43-2	1,1-Dichloroethane	75-34-3	N-Nitroso-di-n-butylamine	924-16-3
Benzyl chloride	100-44-7	1,2-Dichloroethane	107-06-2	Paraldehyde	123-63-7
Bis(2-chloroethyl)sulfide	505-60-2	1,2-Dichloroethane-d (surr)		Pentachloroethane	76-01-7
Bromoacetone	598-31-2	1,1-Dichloroethene	75-35-4	2-Pentanone	107-87-9
Bromochloromethane	74-97-5	trans-1,2-Dichloroethene	156-60-5	2-Picoline	109-06-8
Bromodichloromethane	75-27-4	1,2-Dichloropropane	78-87-5	1-Propanol	71-23-8
4-Bromofluorobenzene (surr)	460-00-4	1,3-Dichloro-2-propanol	96-23-1	2-Propanol	67-63-0
Bromoform	75-25-2	cis-1,3-Dichloropropene	10061-01-5	Propargyl alcohol	107-19-7
Bromomethane	74-83-9	trans-1,3-Dichloropropene	10061-02-6	$-Propiolactone	57-57-8
n-Butanol	71-36-3	1,2,3,4-Diepoxybutane	1464-53-5	Propionitrile (ethyl cyanide)	107-12-0
2-Butanone (MEK)	78-93-3	Diethyl ether	60-29-7	n-Propylamine	107-10-8
t-Butyl alcohol	75-65-0	1,4-Difluorobenzene	540-36-3	Pyridine	110-86-1
Carbon disulfide	75-15-0	1,4-Dioxane	123-91-1	Styrene	100-42-5
Carbon tetrachloride	56-23-5	Epichlorohydrin	106-89-8	1,1,1,2-Tetrachloroethane	630-20-6
Chloral hydrate	302-17-0	Ethanol	64-17-5	1,1,2,2-Tetrachloroethane	79-34-5
Chlorobenzene	108-90-7	Ethyl acetate	141-78-6	Tetrachloroethene	127-18-4
Chlorobenzene-d (IS)		Ethylbenzene	100-41-4	Toluene	108-88-3

Constituent	CASRN	Constituent	CASRN	Constituent	CASRN
Chlorodibromomethane	124-48-1	Ethylene oxide	75-21-8	Toluene-d (surr)	2037-26-5
Chloroethane	75-00-3	Ethyl methacrylate	97-63-2	o-Toluidine	95-53-4
2-Chloroethanol	107-07-3	Fluorobenzene	462-06-6	1,2,4-Trichlorobenzene	120-82-1
2-Chloroethyl vinyl ether	110-75-8	Hexachlorobutadiene	87-68-3	1,1,1-Trichloroethane	71-55-6
Chloroform	67-66-3	Hexachloroethane	67-72-1	1,1,2-Trichloroethane	79-00-5
Chloromethane	74-87-3	2-Hexanone	591-78-6	Trichloroethene	79-01-6
Chloroprene	126-99-8	2-Hydroxypropionitrile	78-97-7	Trichlorofluoromethane	75-69-4
3-Chloro propionitrile	542-76-7	Iodomethane	74-88-4	1,2,3-Trichloropropane	96-18-4
Crotonaldehyde	4170-30-3	Isobutyl alcohol	78-83-1	Vinyl acetate	108-05-4
1,2-Dibromo-3-chloropropane	96-12-8	Isopropylbenzene	98-82-8	Vinyl chloride	75-01-4
1,2-Dibromoethane	106-93-4	Malononitrile	109-77-3	o-Xylene	95-47-6
Dibromomethane	74-95-3	Methacrylonitrile	126-98-7	m-Xylene	108-38-3
1,2-Dichlorobenzene	95-50-1	Methanol	67-56-1	p-Xylene	106-42-3