

[TENTATIVE] INFORMATION SHEET

Background

Premier Resource Management, LLC ([Premier or Discharger](#)) is a petroleum production company that owns and operates the Opaque Facility in the North Antelope Hills Oil Field (Opaque Facility or Facility). The Facility is in Section 25, Township 27 South, Range 20 East, Mount Diablo Base and Meridian (MDB&M); Assessor's Parcel Number (APN) 068-230-13, as shown on [Attachment A](#).

Oil field produced wastewater (produced water or discharge) treated at the Opaque Facility originates from the Hankins and Opaque Leases (collectively "Leases") in the North Antelope Hills Oil Field. The Hankins Lease is in Section 30, Township 27 South, Range 20 East, MDB&M and the Opaque Lease is in Sections 25 and 30, Township 27 South, Range 20 East, MDB&M.

Petroleum production activities at the Leases began in the 1920's. From 2006 to 2017, Pacific Coast Exploration, LLC controlled the Leases and drilled a total of 10 wells. In August 2017, Premier took control of the Leases.

The Hankins Lease has three active petroleum production wells (wells) and the Opaque Lease has one active well and four idle wells. Upon adoption of the Order and with the increase of oil prices, Premier intends to bring an additional three wells into production. These three new wells will be located in Section 31, Township 27 South, Range 20 East, MDB&M.

The Opaque Facility will consist of the following treatment system (Attachment B) listed below:

Gas Separator – Removes potential gases from the production fluid that originates from the petroleum wells.

Production Wash Tank – Tank designed for the primary separation of oil and produced water based on the difference in specific gravity of each material.

Holding Tank – Two intermediate storage units for produced water that originates from the Production Wash Tank.

Secondary Filtration – A sand and/or walnut shell filter used to remove additional solids and oil from the produced water prior to being discharged to the ponds.

Holding Tank – Two intermediate storage units for produced water that originates from the Secondary Filtration system.

Oil in Water Probe – A probe in the final pipeline to the ponds that will detect oil in the produced water. Upon detecting oil and grease above 1 parts per million (ppm), the discharge to the ponds will be temporarily terminated until the issue causing the exceedance of 1 ppm can be addressed.

Due to the associated costs and uncertainty regarding the adoption of this Order, Premier does not currently have a Secondary Filtration system installed at the Opaque Facility.

TENTATIVE INFORMATION SHEET
 WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2023-XXXX
 PREMIER RESOURCE MANAGEMENT, LLC
 OPAQUE FACILITY
 NORTH ANTELOPE HILLS OIL FIELD
 KERN COUNTY

Upon adoption of the Order, Premier intends to purchase and install the Secondary Filtration component.

As of 31 December 2020, Premier disposes of the produced water at one of the following facilities: Central Valley Waste Water’s South Belridge facility or California Resource Corporation’s North Antelope Hills facility.

Premier will only discharge produced water from active wells, not fluid from stimulation treatments such as hydraulic fracturing, acid fracturing, and acid matrix stimulation. To the best knowledge of Premier and their consultant (EnviroTech Consultants, Inc.), none of the existing wells identified in the Report of Waste Discharge (RWD) have undergone well stimulation. Also, Premier does not intend to use stimulation techniques on wells at the Leases. Currently, the only chemical used by Premier includes an emulsion breaker at the shipping oil tank. No other chemicals are used during treatment and are anticipated to be in the produced water discharged to the ponds.

Proposed Discharge

Premier will discharge up to 1,000 barrels per day (bpd) of produced water to the ponds (Attachment C). Produced water from the Opaque Facility will be discharged to Pond No. 1. Pond No. 1 has been designated as a “Safety Pond” and will be netted to preclude the entry of wildlife. From Pond No. 1, produced water will flow, via gravity, to Pond Nos. 2 or 3 through separate valves.

Produced water samples were collected from the produced water production tank at the Opaque Facility on 30 May 2019 and 7 June 2019 and submitted to BC Laboratories, Inc., for analysis. The sample on 30 May 2019 was analyzed for volatile organic compounds (VOCs), general chemistry, and metals. The sample collected on 7 June 2019 was analyzed for VOCs, polynuclear aromatic hydrocarbons (PAHs), oil and grease, total petroleum hydrocarbons, stable isotopes, and radionuclides. The table below provides a summary of some of the produced water analytes that had detectable concentrations.

Table 2 – Summary of Produced Water Quality

Parameter	Units	Produced Water	Produced Water
		5/30/2019	6/7/2019
General Minerals			
Total Dissolved Solids (TDS)	mg/L ¹	9,200	_ ²
Electrical Conductivity (EC)	umhos/cm ³	14,400	-
Chloride	mg/L	3,700	-
Boron	mg/L	220	-
Metals			

TENTATIVE INFORMATION SHEET
WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2023-XXXX
PREMIER RESOURCE MANAGEMENT, LLC
OPAQUE FACILITY
NORTH ANTELOPE HILLS OIL FIELD
KERN COUNTY

Parameter	Units	Produced Water	Produced Water
		5/30/2019	6/7/2019
Arsenic	ug/L ⁴	7.4	-
Barium	mg/L	2.5	-
Strontium	mg/L	4.5	-
Lithium	mg/L	0.86	-
Total Petroleum Hydrocarbons			
Gasoline Range Hydrocarbons	mg/L	3.7	3.7
Oil and Grease	mg/L	31	31
Polynuclear Hydrocarbons (PAHs)			
Acenaphthylene	ug/L	0.031	-
Naphthalene	ug/L	3.4	-
Volatile Organic Compounds (VOCs)			
Benzene	ug/L	380	380
sec-Butylbenzene	ug/L	ND ⁵	-
Ethylbenzene	ug/L	29	50
Isopropylbenzene	ug/L	1.4	5.8
p-Isopropyltoluene	ug/L	ND	0.89
Naphthalene	ug/L	2.3	11
Toluene	ug/L	120	150
1,2,4-Trimethylbenzene	ug/L	ND	9.8
1,3,5-Trimethylbenzene	ug/L	ND	2.9
Total Xylenes	ug/L	34	62
Radionuclides			
Radium-226	pCi/L ⁶	-	13.7
Radium-228	pCi/L	-	9.53
Gross Alpha	pCi/L	-	65.3
Uranium	pCi/L	-	0.33

- 1 Milligrams per liter.
- 2 No samples results available.
- 3 Micromhos per centimeter
- 4 Micrograms per liter.
- 5 Non-detect.
- 6 Picocuries per liter.

The majority of produced water quality results for PAHs and VOCs were non-detect. The detectable concentrations for PAHs and VOCs are listed in the table above.

REGULATORY CONSIDERATIONS

Geology

The Opaque Facility is located on the west side of the San Joaquin Valley. As shown on Figure 11 of the RWD, the stratigraphy within North Antelope Hills Oil Field, from oldest to youngest, is the Kreyenhagen Formation, the Temblor Formation, the Monterey Formation, the Tulare Formation, and Quaternary Alluvium. The Quaternary Alluvium is comprised of sequences of interbedded and unconsolidated gravels, sands, silts, and muds. According to the RWD, the basal Tulare Formation sand is the uppermost hydrocarbon bearing zone and is hydrocarbon bearing throughout the project area. Oil sands are encountered at variable depths from less than 500 feet to over 1,000 feet below ground surface (bgs). According to the RWD, the basal sand unit is overlain by a 400-ft thick clay layer which provides confinement from the upper Tulare Formation and Quaternary Alluvium.

The RWD states that geophysical log data and field observations suggest that the Quaternary Alluvium above the Tulare Formation is absent of groundwater. The unsaturated Quaternary Alluvium and upper portion of the Tulare Formation are typically composed of "air sands" due to extensive air-filled pore space, which is observed on geophysical logs. Geophysical logs within one mile of the Opaque Facility indicate that the base of the vadose zone is at a depth of approximately 250 ft bgs. Also, the RWD includes an additional 13 geophysical logs as part of a larger study which shows the hydrogeology throughout the entire North Antelope Hills Oil Field. This study also found that there is generally no known groundwater present in the Quaternary Alluvium near the Facility, and that groundwater that is potentially present is likely of poor quality.

Figure 12 of the RWD includes a geologic map of California. The map highlights the Antelope Plain and geologic structural features underlying the Opaque Facility and surrounding area. These geologic structural features include folded Tulare Formation sediments (including the Belridge Anticline), which can be observed at the surface. According to the RWD, these structures form a geologic barrier that prevent any potential migration of groundwater to areas of good quality groundwater on the valley floor. Since the Opaque Facility is located on the west side of these geologic structural features, any potential migration of produced water from the Facility would not reach the valley floor where it could degrade beneficial uses of underlying groundwater.

Basin Plan, Beneficial Uses, and Water Quality Objectives

The *Water Quality Control Plan for the Tulare Lake Basin, Third Edition (Revised May 2018)* Basin Plan designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by

reference plans and policies adopted by the State Water Resources Control Board (State Water Board).

Due to the quality of the discharge, there are no intended uses of the produced water discharged to the ponds, except for dust control. Analytical data of the discharge shows that it exceeds the Effluent Limitations established in the Basin Plan. According to the RWD, the only potential use of groundwater from the Antelope Hills Oil Field is industrial use. The nearest municipal well is approximately 20 miles east of the Facility on the valley floor and it appears, based on information provided in the RWD, that discharges at the Facility will not be able to migrate to groundwater that supplies this well. Geologic structural folds to the east are expected to restrict lateral migration of the discharge, and there does not appear to be any evidence of usable groundwater underlying the Facility, therefore the proposed discharge is being considered for regulatory coverage.

DISCHARGE PROHIBITIONS, EFFLUENT LIMITATIONS, DISCHARGE SPECIFICATIONS, AND PROVISIONS

The WDRs regulate the discharge of produced water to the three ponds.

Discharge Prohibitions

The WDRs include Discharge Prohibitions A.1 through A.10 that identify specific prohibitions for the facilities regarding the discharge of produced water to the ponds. This includes prohibiting the discharge of well stimulation fluids and produced water from wells that have undergone well stimulation, as defined by California Code of Regulations (CCR), title 14, section 1761.

Discharge Specifications

The WDRs regulate the discharge and establish a maximum daily volume limit of 1,000 barrels. Also, the WDRs regulate the objectionable odors leaving the Facility property, maintenance and optimization of the treatment system, preclude the entry of wildlife to ponds that may contain oil on the surface, erosion, and mosquito control measures.

The RWD also states that there may be future interest to reuse tank bottom solids for road mix and produced water for dust control activities. The WDRs include specific requirements for the discharger to satisfy prior to receiving authorization from Central Valley Water Board staff.

Monitoring Requirements

California Water Code (Water Code) section 13267 authorizes the Central Valley Water Board to require monitoring and technical reports to investigate the impacts of a waste discharge on waters of the State. Water Code section 13268 authorizes assessment of civil administrative liability when these reports are deficient, when appropriate. In recent years there has been an increased emphasis on obtaining all necessary information to complete these reports, as well as assuring the information is timely, representative, and accurate. This process improves the accountability of dischargers, and helps dischargers meet the conditions of WDRs. The monitoring reports submitted to satisfy monitoring and reporting program (MRP) requirements, aid Staff and the dischargers in ensuring that the discharge and Facility remain in compliance.

The WDRs provide regulatory oversight for produced water, oil field chemicals, facility monitoring requirements (via MRPs), and solid waste and dust control monitoring requirements (if approved by Central Valley Water Board staff). Produced water monitoring includes the analysis of produced water for specific constituents at specific frequencies. Analysis of produced water will include the analysis of chemicals and additives used during petroleum exploration and production that may be in produced water. Facility monitoring includes recording the depths of the ponds and conducting visual inspections of the Facility. Results of monitoring events are reviewed and reported to Central Valley Water Board staff.

Reopener Considerations

The conditions of the discharge in the WDRs were developed based on currently available technical information and applicable water quality laws, regulations, policies, and plans, and are intended to assure conformance with them. The WDRs set limitations based on the information provided thus far. If applicable laws and regulations change, or if new information is obtained that will change the overall discharge and/or its potential to impact groundwater, it may be appropriate to reopen the WDRs or consider changes to the conditions of the WDRs.

ANTIDEGRADATION

State Water Board Resolution 68-16, the Statement of Policy with Respect to Maintaining High Quality of Waters in California (hereafter, the State Antidegradation Policy), requires that disposal of waste into high-quality waters of the state be regulated to achieve the highest water quality consistent with the maximum benefit to the people of the State. Resolution 68-16 does not apply to waters that are not high-quality.

TENTATIVE INFORMATION SHEET
WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2023-XXXX
PREMIER RESOURCE MANAGEMENT, LLC
OPAQUE FACILITY
NORTH ANTELOPE HILLS OIL FIELD
KERN COUNTY

- 7 -

Where the water body is not high-quality (i.e., “poor quality”), the “best efforts” approach is considered. The “best efforts” approach involves implementation of reasonable control measures to treat produced water prior to discharge to land. The factors that should be analyzed under the “best efforts” approach include the water quality achieved by other similarly situated Dischargers, the good faith efforts of the Discharger to limit the discharge of constituents of concern (COCs), and the measures necessary to achieve compliance.

For the purposes of determining whether the discharge regulated under this Order has the potential to degrade groundwater, the discharge has been initially assessed on the ability of produced water to migrate through the Quaternary Alluvium and impact high-quality water on the valley floor. As described in Findings 32 and 33 of the WDRs, the Quaternary Alluvium underlying the Opaque Facility does not appear to contain groundwater. In addition, the geologic structural feature to the east is anticipated to restrict the migration of produced water from the Facility to areas of high-quality groundwater on the valley floor. Although the Discharger has investigated the Quaternary Alluvium in areas surrounding the Opaque Facility and demonstrated that migration is unlikely due to a geologic structure to the east, an additional investigation is needed to identify the first encountered groundwater beneath the Facility.

This Order will regulate these discharges to confirm the results of the hydrogeological investigation, protect surface waters and surface water drainages, and to prevent the creation of nuisance conditions. If the Discharger can demonstrate through an appropriate hydrogeological investigation that groundwater does not exist and discharges of produced water and other wastes to land will not migrate into areas where groundwater does exist, Basin Plan amendments are not required. However, if the Discharger is unable to demonstrate that groundwater is not present, the WDRs include a compliance schedule to obtain the amendments to the Basin Plan necessary to continue the discharge. If by the end of the compliance schedule a basin plan amendment has not been obtained, the discharge must cease.

Premier implemented the following treatment and control measures to minimize the potential for the discharge to degrade groundwater:

- a. Treatment of produced water to minimize oil and grease before it is discharged to land for disposal.
- b. Installation of an oil probe that will cease the discharge to the ponds upon detecting oil and grease above 1 ppm.
- c. Construction and installation of a “Safety Pond” (Pond No. 1) that will be the first pond in the series and will be netted to preclude the entry of wildlife.

- d. Design and construction of ponds that implement minimum water depths and large surface areas to maximize evapotranspiration.
- e. Constructed the Opaque Facility on the west side of the geologic structural containment feature.

Central Valley Water Board staff finds that these treatment and control practices represent BPTC of the wastes that may threaten to degrade waters of the state.

The discharge, as regulated by the WDRs, will provide the benefit of reducing truck traffic, which will subsequently reduce greenhouse gas emissions, since the Discharger will not be reliant on trucking the produced water to alternate sites for disposal.

CV-SALTS Reopener

As part of the Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) initiative, the Central Valley Water Board adopted Basin Plan amendments (Resolution R5-2018-0034) incorporating new Salt and Nitrate Control Programs to address ongoing salt and nitrate accumulation in the Central Valley at its 31 May 2018 Board Meeting. On 16 October 2019, the State Water Board adopted Resolution No. 2019-0057 conditionally approving the Basin Plan amendments and directing the Central Valley Water Board to make targeted revisions to the amendments within one year after obtaining approval from the Office of Administrative Law. The Office of Administrative Law approved the Basin Plan amendments on 15 January 2020 (OAL Matter No. 2019-1203-03), which became effective on 17 January 2020.

For the Salt Control Program, the Discharger may be issued a Notice to Comply with instructions and obligations for the Salt Control Program. Upon receiving a Notice to Comply, the Discharger must submit a Notice of Intent within the specified time period informing the Central Valley Water Board of their choice between Option 1 (Conservative Option for Salt Permitting) or Option 2 (Alternative Option for Salt Permitting). The Discharger must comply with the requirements of the chosen option for the Salt Control Program.

The Nitrate Control Program was also developed to address widespread nitrate pollution in the Central Valley. Upon receipt of a Notice to Comply, dischargers must submit a Notice of Intent within the specified time frame informing the Central Valley Water Board of their choice for complying with the Nitrate Control Program. Dischargers may comply with the Nitrate Control Program either individually (Pathway A) or collectively as part of a Management Zone Group (Pathway B). The Discharger must comply with the requirements of the chosen option for the Nitrate Control Program.

TITLE 27

Title 27 of the California Code of Regulations, section 20005 et seq (Title 27) contains regulations to address certain discharges to land. Title 27 establishes a waste classification system, specifies siting and construction standards for full containment of classified waste, requires extensive monitoring of groundwater and the unsaturated zone for any indication of failure of containment, and specifies closure and post-closure maintenance requirements. Generally, no degradation of groundwater quality by any waste constituent in a classified waste is acceptable under Title 27 regulations.

Unless exempt, the treatment, storage, processing, and disposal of solid waste is subject to full containment pursuant to Title 27 requirements. However, Title 27 exempts certain activities from its provisions. Title 27, section 20090 states, in relevant part:

- (b) Wastewater - Discharges of wastewater to land, including but not limited to evaporation ponds, percolation ponds, or subsurface leach fields if the following conditions are met:
 - (1) the applicable RWQCB has issued WDRs, reclamation requirements, or waived such issuance;
 - (2) the discharge is in compliance with the applicable water quality control plan; and
 - (3) the wastewater does not need to be managed according to Chapter 11, Division 4.5, Title 22 of this code as a hazardous waste.

The discharge of produced water from the Opaque Facility meets the above requirements and is, therefore, exempt from Title 27.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

Kern County is the lead agency for purposes of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000, et seq.) and the CEQA Guidelines (Title 14, Division 6, California Code of Regulations, as amended). On November 9, 2015, Kern County certified the Environmental Impact Report (EIR) for the Kern County Amended Zoning Ordinance for Oil and Gas Activities (Kern County EIR). In March 2021, Kern County approved a Supplemental Recirculated Environmental Impact Report (Kern County SREIR) for the 2021 Kern County Zoning Ordinance for Oil and Gas Activities to address insufficiencies in the Kern County EIR and then adopted amendments to the Kern County SREIR, an Addendum to the Kern County SREIR, and an amended Statement of Overriding Considerations in August 2022 (together the Revised Kern County SREIR).

TENTATIVE INFORMATION SHEET
WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2023-XXXX
PREMIER RESOURCE MANAGEMENT, LLC
OPAQUE FACILITY
NORTH ANTELOPE HILLS OIL FIELD
KERN COUNTY

- 10 -

On 26 January 2023, an Fifth District Court of Appeal Court issued an order staying a Superior Court decision that the Revised Kern County SREIR complied with CEQA and reinstating a suspension of the oil and gas ordinance. Under Public Resources Code section 21167.3, because the Kern County EIR is being challenged as insufficient, the Central Valley Water Board must assume that the Kern County EIR (and the Revised Kern County SREIR) complies with CEQA. However, as a result of the stay issued in January 2023, the Central Valley Water Board may only issue a conditional approval or disapproval of the project. (Public Resources Code, section 21167.3(a).) A conditional approval shall constitute permission to proceed with a project only when the CEQA litigation results in a final determination that the EIR does comply with CEQA.