
Central Valley Regional Water Quality Control Board

29 February 2024

Mr. Greg Soukup
Crimson Resource Management
5001 California Ave., Suite 206
Bakersfield, CA 93309

NOTICE OF APPLICABILITY, ORDER NO. R5-2017-0036, WASTE DISCHARGE REQUIREMENTS FOR OIL FIELD DISCHARGES TO LAND, GENERAL ORDER NUMBER THREE, CRIMSON RESOURCE MANAGEMENT, STANDARD LEASE, ASPHALTO OIL FIELD, KERN COUNTY

On 13 June 2023, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) received a document titled, *Revised [Notice of Intent (NOI)] for [General Order Three] With Corrected Discharge Volumes*. Previous versions of the document, titled, *Report of Waste Discharge, Response to Review of Report of Waste Discharge for Individual Waste Discharge Requirements for Oil Field Discharges to Land, Crimson Resource Management, Asphalt Oil Field, Asphalt Standard Lease, Kern County, and Crimson Resource Management, General Order Three Notice of Intent Letter, Asphalt Oil Field, Asphalt Standard Lease, Kern County*, were submitted to the Central Valley Water Board on 24 November 2020, 9 March 2023, and 8 May 2023, respectively (herein these documents collectively referred to as the “NOI”).

The NOI describes Crimson Resource Management’s (Crimson or Discharger) rationale for obtaining regulatory coverage under Order R5-2017-0036, Waste Discharge Requirements for Oil Field Discharges to Land, General Order Three (General Order Three). The NOI was prepared by EnviroTech Consultants, Inc. on behalf of Crimson.

Crimson operates the Standard Lease in the Asphalt Oil Field in Sections 22 & 23, Township 30 South, Range 22 East, Mount Diablo Base and Meridian in Kern County (Lease or Facility). Crimson owns the surface and mineral rights of the Lease. The Lease has sixteen unlined surface impoundments (ponds) which receive discharges of oil field produced wastewater (produced wastewater or discharge). The ponds are used for the disposal of produced wastewater through evaporation and percolation.

Based on information submitted with the NOI, General Order Three appears appropriate for the discharge. This letter serves as a formal notice that General Order Three is applicable to Crimson’s discharges at the Lease. General Order Number **R5-2017-0036-027** is hereby assigned to all produced wastewater discharges into the

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ponds. Crimson should become familiar with all the requirements, time schedules, prohibitions, and provisions of General Order Three and the associated Monitoring and Reporting Program R5-2017-0036 (MRP).

General Order Three will now regulate the discharge of produced wastewater into ponds. As stated in California Water Code (Water Code) section 13263, all discharges of waste into waters of the state are privileges, not rights. This letter serves as formal notice that Waste Discharge Requirements (WDR) Order No. R5-2004-0058 will be rescinded at a later date.

General Order Three does not create a vested right for Crimson to continue the discharges to the ponds. Failure to prevent conditions that create or threaten to create pollution or nuisance or cause degradation of groundwater will be sufficient reason to modify, revoke, or enforce the provisions of General Order Three, as well as prohibit further discharge.

In 2006, The Central Valley Water Board, the State Water Resources Control Board (State Water Board) and regional stakeholders began a joint effort to address salinity and nitrate problems and adopt long-term solutions that will lead to enhanced water quality and economic sustainability. Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) is a collaborative basin planning effort aimed at developing and implementing a comprehensive salinity and nitrate management program. Dischargers in the Central Valley region began to receive Notice to Comply letters in 2020. Crimson will need to comply with requirements associated with CV-SALTS. The CV-SALTS effort might affect changes to the Basin Plan that would necessitate the re-opening of General Order Three.

FACILITY SPECIFIC REQUIREMENTS

1. Crimson shall maintain exclusive control of the discharge and shall comply with all of the requirements and timelines of General Order Three and the MRP.
2. The required annual fee specified in the annual billing from the State Water Resources Control Board shall be paid until coverage for the Lease under General Order Three is officially terminated. Crimson must notify the Central Valley Water Board in writing to request termination.
3. Under Discharge Specifications, Item B.2, General Order Three states: "*The discharge flow shall not exceed actual maximum monthly average produced wastewater flow to the pond between 26 November 2004 and 26 November 2014. The discharge flow also shall not exceed the maximum design flow of the*

Facility's limiting unit as described by the technical data in the NOI." The "design capacity" of the ponds is identified in the NOI as being approximately 3,272,050 cubic feet (582,777 barrels) including two feet of freeboard in all ponds. The NOI states that the greatest flow into the ponds is anticipated to be approximately 60,000 barrels per month. The "maximum monthly produced wastewater flow to the pond[s] between 26 November 2004 and 26 November 2014" is identified in the NOI as having been 76,953 barrels. The maximum monthly flow volume of 76,953 barrels, as described in the NOI, shall not be exceeded. Any increase in discharge volume that would exceed this maximum monthly average flow constitutes an expansion requiring an evaluation under the California Environmental Quality Act (CEQA).

4. Crimson shall not discharge produced wastewater outside of the pond except for permitted dust control use. Regarding the use of produced wastewater for dust control, the NOI states, "*Crimson does not plan to use wastewater as dust control.*" If Crimson intends to apply produced wastewater for dust control, a proposed management plan as described in Provision E.6 of General Order Three must be submitted at least **90 days prior** to the anticipated discharges.
5. Provision E.3 of General Order Three states that **within 90 days of receipt of this Notice of Applicability (NOA)**, Crimson shall submit written certification that it has installed acceptable flow metering at a location or locations to ensure the accurate measurement of all discharge flows. An engineering alternative may be used if approved in writing by the Executive Officer.
6. **Within 90 days of receipt of this NOA**, Crimson shall, pursuant to Provision E.4. of General Order Three, submit either:
 - a. The results of a hydrogeological investigation demonstrating that there is no groundwater beneath the pond and that produced wastewater and constituents associated with other approved wastes discharged at the Lease will not migrate into areas where there is groundwater with designated beneficial uses. A report describing the results of the demonstration must be signed and stamped by an appropriately licensed professional, licensed to practice in the State of California. Upon the written concurrence of the results by the Executive Officer, this provision shall be considered satisfied; or,
 - b. Crimson must provide a written statement, describing its intent to obtain a Basin Plan amendment. If there is first encountered groundwater underlying the

Lease or the Executive Officer does not concur with the results of the investigation in Provision E.4.a., above, the Discharger shall demonstrate that the natural background groundwater quality for the Lease meets the Sources of Drinking Water Policy exception criteria and/or parallel exception criteria outlined in General Order Three (Findings 22 through 24) and thus the current Basin Plan groundwater beneficial uses are eligible for de-designation in accordance with the compliance schedule provided in Tasks 1 through 10 of Provision E.4.b. If Crimson cannot obtain a Basin Plan amendment by the end of the timeline described in General Order Three, then the discharge must cease.

7. Crimson shall operate and maintain the Facility's ponds sufficiently to protect the integrity of containment and berms and prevent overtopping and/or structural failure. Discharges not authorized by the General Order and not described in the NOI must be reported to the Central Valley Water Board. The discharge of wastes other than those described in the NOI is prohibited. If the method of waste disposal changes, Crimson must submit a Report of Waste Discharge (Form 200).
8. Crimson shall maintain at least two feet of freeboard in each pond at all times.
9. Regarding solids reuse on the Lease, the NOI states, "*The solid waste generated at the Crimson Facility includes tank sludge from periodic tank cleanings. Oil is recovered from tank sludge, water is recycled and solid waste is dewatered to minimize overall waste volumes*" and "*Crimson plans to reuse solids on the Lease as road mix.*" Dischargers proposing to reuse solids for road mix shall submit a solids management plan. Crimson shall, pursuant to Provision E.7 of General Order Three, submit a solids management plan for approval by the Executive Officer at least **180 days prior** to solids reuse. This plan shall include the information required by Provision E.7. If solids are transported off-site, then they must be sent to an appropriately permitted facility. Crimson shall note that the construction of berms on the Lease qualifies as solids reuse.
10. Order Number 2014-0057-DWQ (NPDES General Permit CAS000001) specifies requirements for discharges of storm water associated with industrial activities. According to information provided within the NOI, the discharge is contained within the Facility's ponds. The NOI reports that berms surround the tank farm and provide secondary containment for runoff. The NOI states, "*The*

containment plan includes one 6-inch diameter spillway pipeline between the ponds. Pond 1 will overflow into Pond 2, Pond 2 will spill over into Pond 3, etc. While the ponds are in use, water flow into the ponds will be manually controlled by valves and Crimson will conduct visual monitoring.” Based on the information submitted in the NOI, coverage under NPDES General Permit CAS000001 is not needed at this time. If the conditions or regulatory policies change, the Lease may need to obtain coverage under NPDES General Permit CAS000001.

11. If produced wastewater enters any waters of the State, or in the event of a spill at the facility, the Discharger is required to contact the California Governor's Office of Emergency Services (916) 657-9210.

MONITORING REQUIREMENTS

The MRP associated with General Order Three includes extensive monitoring requirements. Failure to comply with the requirements in General Order Three and the MRP could result in an enforcement action as authorized by provisions of the California Water Code. A [copy of General Order Three and the MRP](#) is included with the enclosures to this notice. A copy can also be found online at:

(https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/general_orders/r5-2017-0036.pdf)

The MRP includes monitoring and reporting of chemicals and additives. Crimson should become familiar with those requirements. The Central Valley Water Board will review the MRP periodically and revise requirements when necessary. The MRP can be modified if Crimson provides enough data to support the proposed changes. If monitoring consistently shows no significant variation in the magnitude of a constituent concentration or parameter after a statistically significant number of sampling events, Crimson may request the MRP be revised by the Executive Officer to reduce monitoring frequency or minimize the list of constituents. The proposal must include adequate technical justification for a reduction in monitoring frequency.

Crimson must comply with the Central Valley Water Board's Standard Provisions and Reporting Requirements for Waste Discharge Requirements, dated 1 March 1991 (Standard Provisions). A [copy of the Standard Provisions](#) is included with the enclosures to this notice. A copy can be found online at:

(https://www.waterboards.ca.gov/centralvalley/board_decisions/adopted_orders/std_provisions/wdr-mar1991.pdf)

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Control Board to review this action in accordance with Water Code section 13320 and CCR, title 23, division 3, chapter 6, section 2050 and those that follow. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this NOA, except that if the thirtieth day following the date 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.

SUBMISSIONS

Documents submitted that are less than 50 MB must be sent via electronic mail to: centralvalleyfresno@waterboards.ca.gov. Documents that are 50 MB or larger can be mailed to the Central Valley Water Board Office at: 1685 E Street, Fresno, CA 93706.

Crimson shall submit electronic PDF copies of all monitoring reports, work plans, other reports, analytical results, and groundwater elevation data over the internet to the [State Water Board Geographic Environmental Information Management System database \(GeoTracker\)](#) at:

(https://www.waterboards.ca.gov/ust/electronic_submittal/)

Crimson shall note that GeoTracker only accepts PDF files.

A [frequently asked questions document for GeoTracker](#) can be found at:

(https://www.waterboards.ca.gov/ust/electronic_submittal/docs/faq.pdf)

Electronic submittals shall comply with GeoTracker standards and procedures, as specified on the State Water Board's website. Uploads to GeoTracker shall be completed on or prior to the due date. The GeoTracker site Global I.D. number that is associated with this NOA is **WDR100029743**.

Please review the attached memorandum. If you have any questions regarding this matter, please contact Cameron Alfving of this office at (559) 445-6083 or by email at: cameron.alfving@waterboards.ca.gov.

Original Signed by Alex Olsen
For Patrick Pulupa
Executive Officer

Enclosures and Ccs on next page

Notice of Applicability
General Order Three
Crimson Resources Management
Asphalto Oil Field, Standard Lease

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29 February 2024

Enclosures: 29 February 2024 Memorandum
General Order Three
1 March 1991 Standard Provisions


Cc via email:

Chris Jones, District Deputy, California Geologic Energy Management
Division, Bakersfield (CalGEMCentral@conservation.ca.gov)

Carly Miser, PE, Vice President, EnviroTech, Bakersfield
(cmiser@envirotechteam.com)

Central Valley Regional Water Quality Control Board

TO: Alex Olsen
Supervising Engineering Geologist

FROM: Rebecca T. Asami 
Senior Engineering Geologist
PG No. 9741



Cameron Alfving 
Engineering Geologist

DATE: 28 February 2024

SUBJECT: NOTICE OF INTENT REVIEW, ORDER NO. R5-2017-0036, WASTE DISCHARGE REQUIREMENTS GENERAL ORDER FOR OIL FIELD DISCHARGES TO LAND, GENERAL ORDER THREE, CRIMSON RESOURCE MANAGEMENT, STANDARD LEASE, ASPHALTO OIL FIELD, KERN COUNTY

On 13 June 2023, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) received a document titled, *Revised [Notice of Intent (NOI)] For [General Order Three] With Corrected Discharge Volumes*. Previous versions of the document, titled, *Report of Waste Discharge, Response to Review of Report of Waste Discharge for Individual Waste Discharge Requirements for Oil Field Discharges to Land, Crimson Resource Management, Asphaltto Oil Field, Asphaltto Standard Lease, Kern County, and Crimson Resource Management, General Order Three Notice of Intent Letter, Asphaltto Oil Field, Asphaltto Standard Lease, Kern County*, were submitted to the Central Valley Water Board on 24 November 2020, 9 March 2023, and 8 May 2023, respectively (herein collectively referred to as the NOI).

The NOI describes Crimson Resource Management's (Crimson) rationale for obtaining regulatory coverage under Order No. R5-2017-0036, Waste Discharge Requirements for Oil Field Discharges to Land, General Order Three (General Order Three). This memorandum provides a summary of the NOI and Central Valley Water Board staff (Staff) conclusions.

Lease Description

Crimson operates the Standard Lease in the Asphaltto Oil Field in Sections 22 & 23, township 30 south, range 22 east, Mount Diablo Base & Meridian in Kern County (Lease or Facility). The Lease utilizes sixteen unlined surface impoundments (ponds) for disposal of oil field produced wastewater (produced wastewater or discharge) by

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evaporation and percolation. Oil field produced fluids from petroleum production wells are processed at a tank facility on the Lease, which includes two stock tanks, a wash tank, and a separator. The tank facility is surrounded by berms which provide secondary containment.

The surface area, depths and volumes of the ponds are shown below (depths and volumes include two feet of freeboard in each pond):

Pond Number	Surface Area (square feet)	Depth (feet)	Volume (cubic feet)
1	5,850	8	46,800
2	11,875	10	118,750
3	19,000	8	152,000
4	17,100	10	171,000
5	17,100	10	171,000
6	19,000	13	247,000
7	17,100	13	222,300
8	18,000	8	144,000
9	18,000	10	180,000
10	18,000	10	180,000
11	53,000	18	954,000
12	8,050	8	64,400
13	8,400	8	67,200
14	8,400	13	109,200
15	28,800	13	374,400
16	7,000	10	70,000

Discharge Characteristics

As per Discharge Specifications, Item B.2., of General Order Three, the discharge volume shall not exceed the maximum monthly average of produced wastewater flow to the ponds between 26 November 2004 and 26 November 2014. According to information submitted in the NOI, with two feet of freeboard, the ponds have a combined capacity of approximately 3,272,050 cubic feet. The NOI states that between November 2004 and November 2014, the average monthly volume of produced wastewater discharged to the ponds was approximately 47,568 barrels (bbls) and maximum monthly flow to the ponds was approximately 76,953 bbls. The NOI states that up to 60,000 bbls of produced wastewater per month may be discharged to the ponds. This volume is less than the recorded maximum monthly flow to the ponds between November 2004 and November 2014. The maximum monthly flow volume shall not be exceeded.

The discharge was sampled on 31 August 2020. Analytical results for select constituents are provided in the following table:

Constituent	Concentration	Units
Total Dissolved Solids (TDS)	35,000	Milligrams per Liter (mg/L)
Conductivity (EC)	55,300	Micromohs per Centimeter (μ mohs/cm)
Chloride	16,000	mg/L
Boron	160	mg/L
Sodium	12,000	mg/L

Regional Characteristics

The Lease is in the McKittrick Valley in the northern portion of the Asphalt Oil Field. The average monthly precipitation in the region is 0.41 inches per month, with monthly totals ranging from zero inches during the summer months to a high of 3.15 inches in January 2006. In McKittrick Valley, monthly precipitation totals during the rainy season are typically less than 2 inches. The average annual precipitation is approximately 5.64 inches. Pan evaporation in the region occurs at an average rate of approximately 5.28 inches per month, with rates varying from as low as 1.01 inches during the winter to as high as 10.91 inches in the summer. According to the NOI, there are no designated waterways within a quarter mile of the Lease, although aerial images show that there are ephemeral drainages that occasionally run.

The McKittrick Valley is a northwest-southeast structural trough formed by tectonic compressional forces associated with movement along the San Andreas Fault. It is bound by Plio-Pleistocene outcrops within the Elk Hills along the northeast/southeast flank, and the Buena Vista Hills along the northwest/southwest flank. The McKittrick Valley is also bound by outcrops of Plio-Pleistocene Tulare Formation at its northwest terminus. Several faults and an anticlinal fold lie approximately 1.5 to 2 miles north northeast of the Lease.

The Lease overlies Quaternary Alluvium that is approximately 350 feet (ft.) thick. Mud logs indicate that the alluvium terminates in a basal clay that is approximately 62 ft. thick. The alluvium overlies the Tulare Formation which extends to approximately 1,800 feet below ground surface (bgs) beneath the Lease.

POTENTIAL THREAT TO WATER QUALITY

General Order Three regulates oil field discharges where first encountered groundwater is of poor quality or there is no first encountered groundwater. General Order Three applies to discharges that began prior to 26 November 2014, are primarily discharges

from oil operations to land, and exceed the maximum oil field salinity limits for electrical conductivity, chloride, and boron contained in the Basin Plan. Based on Staff review of the NOI, the threat to water quality for the discharge appears to be classified as Category 3-C. California Code of Regulations, title 23, section 2200, defines these categories to include any of the following:

- a. Category 3 threat to water quality: “Those discharges of waste that could degrade water quality without violating water quality objectives or could cause a minor impairment of designated beneficial uses as compared with Category 1 and Category 2.”
- b. Category C complexity: “Any discharger for which waste discharge requirements have been prescribed pursuant to Section 13263 of the Water Code not included in Category A or Category B as described above. Included are a discharger having no waste treatment systems or that must comply with best management practices, dischargers having passive treatment and disposal systems, or discharger having waste storage systems with land disposal.”

A geotechnical study referenced in the NOI states the alluvium is devoid of groundwater throughout McKittrick Valley. This is further corroborated by a geophysical log from Well WD-3 (American Petroleum Institute Number [API] number 03039186, approximately 2,400 ft. south of the Lease. A mud log from the same well shows the presence of a basal alluvial clay that is known to exist between the alluvium and the Upper Tulare Formation throughout the Asphalto Oil Field. The top of the clay is located at approximately 380 ft. bgs near the ponds.

Geophysical logs for the wells nearest the ponds (e.g., API numbers 0402937561, 0402937560, 0402937558, 0402937559, 0402937556, and 0403028600) indicate that first encountered fluids appear to be groundwater located within the Upper Tulare Formation. The groundwater is perched above the Amnicola Clay, which separates the Upper Tulare Formation from the Lower Tulare Formation. First encountered groundwater appears to occur at approximately 1,000 ft. bgs near the ponds. The top of the Amnicola Clay ranges from approximately 1,140 ft. bgs east of the ponds to approximately 1,240 ft. bgs west of the ponds, indicating that it dips roughly westward toward the McKittrick Oil Field and, therefore, toward the center of McKittrick Valley. The Amnicola Clay acts as a barrier to vertical groundwater flow. In addition, as noted above, the McKittrick Valley is a structural trough.

STAFF CONCLUSIONS

General Order Three is appropriate for areas where first encountered groundwater is of poor quality. Based on the information submitted in the NOI, the discharge at the Facility is appropriate for General Order Three. The discharge is not expected to impact beneficial uses of groundwater due to the overall poor quality of groundwater in the area

and the containment provided by the structural trough that forms the McKittrick Valley. However, as shown by the wells described above, the first encountered fluid underlying the Lease appears to be water. Therefore, Provision E.4 of General Order Three still must be satisfied. Crimson must demonstrate that 1) the first encountered fluids contain hydrocarbons or groundwater without beneficial uses as designated by the Basin Plan and 2) the discharge will not migrate to waters of beneficial use or pursue a Basin Plan amendment following the time schedule outlined in General Order Three.

If Crimson chooses to pursue a Basin Plan Amendment, then Crimson must adhere to the time schedule described in Tasks 1-10 of Provision E.4 of General Order Three. Crimson should note that the time schedule requires certain tasks to be completed by certain dates. If Crimson cannot obtain a Basin Plan Amendment within the time frame described in General Order Three, then the discharge must cease.

If Crimson chooses to demonstrate that the first encountered fluids are hydrocarbon bearing and that the discharge will not migrate to waters of beneficial uses, then a demonstration of that must be provided. A technical report with hydrogeological information must be provided in support of the demonstration. The technical report describing the demonstration must be stamped and signed by an appropriately licensed professional with a license to work in the state of California.