CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2023-0015

AMENDING
ORDER R5-2022-0006
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT
CAG995002

WASTE DISCHARGE REQUIREMENTS
LIMITED THREAT DISCHARGES TO SURFACE WATER

FINDINGS
The California Regional Water Quality Control Board, Central Valley Region, (hereafter Central Valley Water Board) finds that:

1. On 17 February 2022, the Central Valley Water Board adopted Waste Discharge Requirements Order R5-2022-0006 (NPDES CAG995002) for Limited Threat Discharges To Surface Water (Limited Threat General Order).

2. The Limited Threat General Order includes screening levels for all priority pollutants, but only includes technology based-based effluent limitations for Volatile Organic Compounds determined at the time the Limited Threat General Order was adopted. This Order amends the Limited Threat General Order to include facility specific technology-based effluent limitations for chloroform and cis-1,2-dichloroethene. Also, a technology-based effluent limitation for remediation of perchlorate with proven technology has been included in this General Order. The amendment also proposes minor corrections to language related to the Conservative Pathway of the Salt Control Program.

3. Issuance of this Order is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) (“CEQA”) pursuant to Water Code section 13389, since the adoption or modification of a NPDES permit for an existing source is statutorily exempt.

4. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to amend Waste Discharge Requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations.

5. Consistent with Water Code section 189.7, the Central Valley Water Board conducted outreach in disadvantaged and tribal communities that may be affected by the updates to this General Order. No interested persons presented information or raised concerns about potential environmental justice, tribal impact, or racial equity considerations related to this amendment. The Board has also considered information readily available to Central Valley Water Board staff. The Board does not anticipate that this amendment will result in adverse water quality impacts or environmental justice concerns within the scope of the Board’s authority.

BOARD ACTION
IT IS HEREBY ORDERED THAT:

Effective immediately, Waste Discharge Requirements Order R5-2022-0006 (NPDES CAG995002) is amended solely as shown in items 1 through 14, below.

1. The Order number is changed from R5-2022-0006 to R5-2022-0006-01 throughout the Limited Threat General Order.

2. **Cover Page.** Modify the last paragraph to the text shown below:

   I, PATRICK PULUPA, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on **17 February 2022** and amended by Order R5-2023-0015 on **27 April 2023**.

3. Effluent Limitations, Section V.A.1.d. Modify the language as shown below:

   d. **Salinity.** The salinity of all discharges within the Sacramento and San Joaquin River Basins and within the Tulare Lake Basin shall not exceed any applicable TMDLs, Delta standards, or Basin Plan water quality objectives or numeric limits. Effluent limitations shall be established on a water-body-specific basis, as applicable and shall be as electrical conductivity (EC), total dissolved solids (TDS), chloride, and/or boron. **Dischargers under the Salt Control Program's Conservative Permitting Approach shall not exceed the following effluent limitations, as specified in the Notice of Applicability:**

      i. **Discharges to Receiving Waters with the Agricultural Supply (AGR) Beneficial Use, Electrical Conductivity.** The monthly average effluent electrical conductivity shall not exceed 700 µmhos/cm.

4. Effluent Limitations, Section V.B.2.a. Modify the following V.B.2.a to include Perchlorate as applicable to remediation sites.

   a. The discharge of treated wastewater from site investigations and/or cleanup of sites contaminated with volatile organic compounds and perchlorate shall not exceed the effluent limitations in Table 10, below, as identified in the NOA from the Executive Officer. Table 10 contains a partial list of VOCs and is not intended to limit the Executive Officer from identifying additional VOCs for Water Quality Based Effluent Limitations; all VOCs not listed in Table 10 will have Maximum Daily Effluent Limitations of 0.5 µg/L.

5. Effluent Limitations, Section V.B.2. Modify Table 10 as shown below.

Table 10. VOC and Perchlorate Effluent Limitations for Remediation Projects

Parameter	Units	Maximum Daily Effluent Limitations
Perchlorate	µg/L	4.0

6. Effluent Limitations, Section V.B.2.b. Modify the following section V.B.2.b as shown below.

   b. For the Boeing Company's groundwater extraction and treatment (GET) systems, Mather GET H-B and Southern Groundwater Study Area (SGSA) GET, the effluent limitations for chloroform and cis-1,2-dichloroethene in Table 11 apply.

7. Effluent Limitations, Section V.B.2. Add Table 11 as shown below.

Table 11. Chloroform and cis-1,2-dichloroethene for SGSA GET and Mather GET H-B

Parameter	Units	Maximum Daily Effluent Limitations	Location
chloroform	µg/L	3.0	Mather GET H-B
cis-1,2-Dichloroethene	µg/L	1.0	SGSA GET

8. Provisions, Section IX.C.3.c. Modify the following section IX.C.3.c as shown below.

   Furthermore, **for enrollees under the Salt Control Program's Alternative Salinity Permitting Approach**, if the effluent annual average calendar year electrical conductivity concentration exceeds the respective performance-based electrical conductivity trigger in Table 15 below, the salinity evaluation and minimization plan shall be reviewed and updated. The updated salinity evaluation and minimization plan shall be submitted by 1 April following the calendar year in which the electrical conductivity concentration exceeds the performance-based electrical conductivity trigger.

9. Monitoring and Reporting Program, Section IV.A. Modify Table C-3 to include perchlorate, as shown below.

Table C-3. Effluent Monitoring

CTR Number	Parameter	Units	Sample Type
--	Perchlorate	µg/L	Grab

10. Fact Sheet, Section VI.B.2b. Modify the following section VI.B.2b as shown below.

b. Technology-Based Effluent Limitations for Remediation Sites

Since this General Order regulates the discharge of wastewater that may be impacted by toxic organic constituents, VOCs, pesticides, inorganic constituents, perchlorate and other regulated chemical constituents, various types of treatment systems could be employed to remove these pollutants in wastewater to meet applicable permit limits. For example, air stripping, carbon absorption, or chemical oxidation treatment systems could be used to remove VOCs in groundwater. Reverse osmosis, ion exchange, or pH adjustment could be used as treatment technologies to remove perchlorate or metals. Biological systems could be used to degrade or remove conventional pollutants and semi-volatile organic compounds.

i. VOCs

Technology-based effluent limitations for remediation of VOCs with proven technology have been included in this General Order, as shown in Table D-2. These effluent limitations reflect the expected performance of existing treatment technologies. However, with the potential diversity of limited threat discharges and the uncertainty regarding the specific constituents of concern to be regulated, this General Order does not establish technology-based effluent limitations based on the performance of non-proven treatment technologies that may be used at specific remediation projects. According to 40 C.F.R. section 122.44(k), BMPs, can be required in lieu of technology-based effluent limitations when numeric effluent limitations are infeasible. Therefore, based on BPJ, BMPs will serve as the equivalent of technology-based effluent limitations, in order to carry out the purposes and intent of the CWA. Each Discharger of limited threat discharges is required to develop and implement BMPs that establish site-specific plans and procedures that will ensure proper operation and maintenance, prevent the addition of chemicals or other substances from being introduced into the wastewater, and prevent the addition of pollutants from other non-permitted process waters, spills, or other sources of pollutants at the facilities.

ii. Perchlorate

Perchlorate and its salts are used in, but not limited to, solid propellant for rockets, missiles, and fireworks. The defense and aerospace industries purchase more than 90 percent of all the perchlorate manufactured. Perchlorate has been determined to have a potential adverse impact on the thyroid gland. Ion exchange is an ex situ technology used to remove perchlorate from drinking water, groundwater, surface water, and environmental media at full scale. Ion exchange is the most frequently used ex situ treatment technology for

perchlorate. The most commonly used ion exchange media are synthetic, strongly basic, anion exchange resins. Section 64431 of Title 22 of the California Code of Regulations was amended in 2007 to include a primary MCL for perchlorate of 6 µg/L. However, ion exchange technology has been used to reduce perchlorate concentrations to less than 4 µg/L. Therefore, a technology-based effluent limitation for remediation of perchlorate with proven technology has been included in this General Order, as shown in Table D-2.

11. Fact Sheet, Section VI.B.2b. Modify Table D-2 to include perchlorate.

Table D-2. Technology-based Effluent Limitations for Remediation Sites

Parameter	Units	Maximum Daily Effluent Limitations
Perchlorate	µg/L	4.0

12. Fact Sheet, Section VI.B.2.c. Add section VI.B.2.c as shown below.

c. For the Boeing Company's groundwater extraction and treatment (GET) systems, Mather GET H-B and Southern Groundwater Study Area (SGSA) GET, the effluent limitations for chloroform and cis-1,2-dichloroethene in Table D-3 apply.

Table D-3. Chloroform and cis-1,2-dichloroethene for SGSA GET and Mather GET H-B

Parameter	Units	Maximum Daily Effluent Limitations	Location
cis-1,2-Dichloroethene	µg/L	1.0	SGSA GET
chloroform	µg/L	3.0	Mather GET H-B

i. cis-1,2-Dichloroethene (cis-1,2-DCE)

Although granular activated carbon (GAC) is the best available technology for removal of cis-1,2-DCE from groundwater, SGSA GET historical analytical data indicate nearly instantaneous breakthrough of cis-1,2-DCE at the midpoint between GAC vessels following GAC changeout. Operational records demonstrate that cis-1,2-DCE breakthrough challenges were observed shortly after the SGSA GET system was placed in operation since at least 2009. Accelerated breakthrough may be caused by adverse impacts on GAC performance from the occurrence of natural organic matter in the system. The natural organic matter, whether from on-going biofouling challenges in the system or from naturally-occurring dissolved or colloidal carbon in the groundwater, competes with the target contaminants and reduces the overall effective GAC adsorption capacity available for removing VOCs (including cis-1,2- DCE). Intensive maintenance is conducted at the SGSA GET treatment system to address the occurrence of natural

organic matter. Also, various biofouling mitigation efforts have been tested and applied since 2009. The cis-1,2- DCE effluent limitation of 1.0 µg/L applies to the discharge based on best available technology given site-specific challenges while remaining protective of human health and the environment.

ii. Chloroform

The source of chloroform at Mather GET H-B is unclear and only impacts select extraction wells. Currently, the influent chloroform concentration is mainly from one well (EX-7); the maximum EX-7 historical chloroform concentration since 2017 is 3.9 µg/L. Although the combined influent chloroform concentration at Mather GET H-B is typically approximately 0.5 µg/L, this is due to dilution from the non-chloroform producing wells. If shutdowns of non-chloroform producing wells occur, for either unplanned or planned maintenance needs, dilution is minimized and may result in elevated influent chloroform concentrations.

Historical influent and effluent analytical data from Mather GET H-B demonstrate that chloroform breakthrough occurs within a matter of days, after which chloroform is at equilibrium within the GAC treatment system and the chloroform effluent concentration is equal to its influent concentration. Model-simulated breakthrough evaluation suggests that the rapid breakthrough of chloroform at the Mather GET H-B system is due to decreased GAC treatment caused by natural organic matter in the influent, which decreases the GAC adsorption capacity for chloroform due to competitive adsorption. Elevated concentrations of chloroform in the influent, caused by minimized dilution and/or elevated chloroform concentrations from yet-to-operate extraction well EX-14, may cause an increase in effluent concentrations.

The chloroform effluent limitation of 3.0 µg/L applies to the discharge and maintains the Discharger's prior permit effluent limitation, which is consistent with protection of human health and the environment.

13. Fact Sheet, Section VI.D.4.c. Edit paragraph 3 of section VI.D.4.c. as shown below.

Discharges with an average monthly electrical conductivity concentration less than 700 µmhos/cm or an average annual electrical conductivity concentration less than 900 µmhos/cm for receiving waters with the AGR or MUN beneficial use, respectively, may enroll under the Conservative Pathway of the Salt Control Program. The Central Valley Water Board finds that discharges below the respective water quality objective and enrolling in the Conservative Pathway may produce minor effects which will not result in significant reduction of water quality since permitted discharges are considered relatively pollutant-free and pose a low or limited threat to water quality. Specific findings from the antidegradation analysis shall be summarized in the NOA.

14. Screening Levels For Limited Threat Discharges, Section II.D. Modify Table I-5 to include perchlorate, as shown below.

Table I-5. Screening Levels for VOC Remediation Projects

Parameter	Units	Screening Level
Perchlorate	µg/L	4.0

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with CWC section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date that this Order becomes final, except that if the thirtieth day following the date that this Order becomes final falls on a Saturday, Sunday, or state holiday (including mandatory furlough days), the petition must be received by the State Water Board by 5:00 p.m. on the next business day.
Links to the laws and regulations applicable to filing petitions
(http://www.waterboards.ca.gov/public_notices/petitions/water_quality) may be found on the Internet or will be provided upon request.

I, PATRICK PULUPA, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 27 April 2023.

PATRICK PULUPA, Executive Officer