Item No. 4
Supporting Document No. 1
June 9, 2021

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

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San Diego, CA 92108
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San Diego Water Board Website (https://www.waterboards.ca.gov/sandiego)

ORDER R9-2021-0056
NPDES NUMBER CAG999003

GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FOR THE DISCHARGE OF LANTHANUM-MODIFIED CLAY TO SURFACE WATERS OF THE UNITED STATES IN THE SAN DIEGO REGION

The following Dischargers may apply for coverage under this Order in compliance with the waste discharge requirements as set forth in this Order:

Discharger: Any person or entity that discharges lanthanum-modified clay to canals, ditches, lakes, ponds, reservoirs or other storage or constructed conveyance facilities that are surface waters of the United States (U.S.) for the purpose of inactivating soluble reactive phosphorus.

Administrative Information:

This Order was adopted on:	**June 9, 2021**
This Order shall become effective on:	**October 1, 2021**
This Order shall expire on:	**September 30, 2026**

The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) have classified this discharge as follows: **Minor**

I, David W. Gibson, 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, San Diego Region, on June 9, 2021.

_____
David W. Gibson, Executive Officer

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ATTACHMENTS

1. DISCHARGE INFORMATION

This Order regulates the discharge of lanthanum-modified clay to freshwater inland receiving surface waters of the United States (U.S.) consisting of canals, ditches, lakes, ponds, reservoirs or other storage or constructed conveyance facilities within the jurisdiction of the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board). The San Diego Region covers a large portion of San Diego County, portions of South Orange County, and the southwestern portion of Riverside County based on hydrologic drainage areas.

Lanthanum-modified clay may be applied to surface waters to bind excess free phosphorus in the water column. This application of lanthanum-modified clay may pose a threat to existing and potential beneficial uses of waters of the U.S. if not properly controlled and regulated. The Clean Water Act (CWA), at section 301(a), broadly prohibits the discharge of any pollutant to waters of the U.S., except in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. Lanthanum-modified clay discharged into surface waters constitutes pollutants within the meaning of the CWA even if the discharge is for the purpose of restoring water quality. Therefore, coverage under an NPDES permit is required.

2. PERMIT COVERAGE AND APPLICATION REQUIREMENTS

2.1. Discharger Eligibility Criteria. Any person who proposes to discharge lanthanum-modified clay to freshwater inland surface waters within the San Diego Region may submit a Notice of Intent (NOI) for coverage under this Order. The NOI may address multiple applications of lanthanum-modified clay to multiple waterbodies throughout the San Diego Region. When the application of lanthanum-modified clay is to a waterbody owned or managed by one person/party but the application is conducted by another person/party, it's the owner's or manager's duty to submit an NOI to obtain coverage under this Order. On a case-by-case basis, the San Diego Water Board may require the joint submission of an NOI from both the owner or manager of the waterbody and the person/party conducting the application.

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and State of California (State) laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

2.2. Application. To obtain coverage under this Order, Dischargers must submit a complete application containing the following items to the San Diego Water Board:

- A completed NOI form shown as Attachment B of this Order, signed in accordance with the signatory requirements of the Standard Provisions in Attachment D of this Order, section 5.2.1, Signatory and Certification Requirements, no later than 60 days prior to the proposed application of lanthanum-modified clay. The NOI may address multiple applications by the Discharger of lanthanum-modified clay at different surface waterbodies throughout the San Diego Region;
- Payment of the annual application fee, equal to the first annual fee, made payable to "California State Water Resources Control Board" or "SWRCB";

- A Water Quality Management Plan (WQMP) as specified by section 5.4 of this Order for each waterbody; and
- A Technical Report that identifies the sources for the elevated phosphorus in the waterbody and the measures being implemented to control these sources and that demonstrates other source control measures, by themselves, would be insufficient to address problems in the waterbody caused by excessive phosphorus concentrations.

The NOI, including, the application fee, and other attachments shall be submitted to the following address:

San Diego Water Board
2375 Northside Drive, Suite 100
San Diego, CA 92108

Attn: General Order for Lanthanum-Modified Clay
Source Control Regulation Unit
NOTICE OF INTENT

The San Diego Water Board has implemented an Electronic Content Management system to reduce our paper use. Please convert all submissions with attachments to a searchable Portable Document Format (PDF) and submit the documents on a digital data storage device, such as a compact disc or a USB flash drive. Alternatively, the Discharger may submit the NOI and associated attachments by email to SanDiego@waterboards.ca.gov.

2.3. Notice of Applicability. Upon receipt of the NOI, the San Diego Water Board will post the WQMP to its website for a 30-day public comment period. Following review of the WQMP and public comments, the San Diego Water Board will issue to the Discharger, a Notice of Applicability (NOA) under this Order. The NOA will include the discharge application rate, any additions or changes to monitoring requirements specified in Attachment E that are due to special circumstances, and any other reporting requirements. Order coverage will be effective when all of the following have occurred:

- The Discharger has submitted a complete permit application;
- The WQMP has been accepted by the San Diego Water Board; and
- The San Diego Water Board has issued an NOA.

The San Diego Water Board or the Director of the U.S. EPA may require any person requesting enrollment under this Order or subject to waste discharge requirements (WDRs) under this Order to apply for and obtain an individual NPDES permit. Cases where an individual NPDES permit may be required include but are not limited to those described in Title 40 of the Code of Federal Regulations (CFR) section 122.28 (b)(3).

2.4. Fees. Discharger enrollment under this Order is conditioned upon total payment of any fee required under California Code of Regulations (CCR) title 23, division 3, chapter 9 (commencing with section 2200) and owed by the Discharger. Under this

Order, lanthanum-modified clay discharges require no treatment systems to meet the terms and conditions of this Order and pose no significant threat to water quality if properly controlled and regulated. As such, these discharges are eligible for Category 3 pursuant to the fee schedule. This category is appropriate because this Order requires that lanthanum-modified clay discharges incorporate best management practices (BMPs) to control potential impacts to beneficial uses, and this Order prohibits residual pollutant waste from causing excursions of water quality objectives. The annual fee associated with this rating can be found on the California State Water Resources Control Board's (State Water Board's) Fees Home Page (https://www.waterboards.ca.gov/resources/fees/).

2.5. Dischargers Enrolled Under Order No. R9-2012-0063. Dischargers enrolled under Order No. R9-2012-0063 (referred to in this Order as existing Dischargers) will continue coverage for one year following the date of adoption for this Order. After June 9, 2022, all Notices of Enrollment issued under Order No. R9-2012-0063 will be administratively terminated by the San Diego Water Board. Existing Dischargers shall submit a complete permit application to enroll in this Order by March 9, 2022.

2.6. Terminating Coverage. To terminate permit coverage, a Discharger must submit a complete and accurate Notice of Termination (NOT). The Discharger's coverage under this Order terminates on the day that the San Diego Water Board approves the NOT. Prior to the termination effective date, the Discharger is subject to the terms and conditions of this Order and is responsible for submitting the annual fee and all reports associated with this Order. Approval of the NOT does not relieve the Discharger from enforcement of violations that occurred prior to the termination date. Discharger must submit an NOT when one of the following conditions occurs:

- A new owner or operator has taken over responsibility of the Discharger's application of lanthanum-modified clay covered under an existing NOA;
- The Discharger has ceased all discharges from the application of lanthanum-modified clay for which it obtained Order coverage and does not expect to discharge during the remainder of this Order term; or
- The Discharger has obtained coverage under an individual permit for all discharges required to be covered by an NPDES permit.

2.7. Transfer of Ownership. Enrollment under this Order is not transferable. A new owner or operator must submit an application to enroll under this Order and obtain authorization from the San Diego Water Board before commencing application of lanthanum-modified clay.

2.8. Notifications. This Order serves as a general NPDES Permit for the discharge of lanthanum-modified clay to surface waters to bind phosphorus to improve water quality.

2.8.1. Dischargers who submit a complete NOI under this Order are not required to submit an individual permit application. The San Diego Water Board may request additional information or determine that a Discharger is not eligible for coverage

under this Order and would be better regulated under an individual permit or other general NPDES permit. If the discharge becomes covered by an individual or another general NPDES permit, the applicability of this Order to the specified discharge will be immediately terminated on the effective date of the individual permit or coverage under the other general NPDES permit.

2.8.2. No discharge of waste into waters of the State, whether or not the discharge is made pursuant to WDRs, shall create a vested right to continue the discharge. All discharges of waste into waters of the State are privileges, not rights.

3. FINDINGS

The San Diego Water Board finds:

3.1. Legal Authorities. This Order serves as WDRs pursuant to article 4, chapter 4, division 7 of the California Water Code (Water Code) (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal CWA and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as a NPDES permit authorizing the Discharger to discharge into waters of the U.S. at a discharge location as described in an NOA issued pursuant to section 2.3 of this Order.

3.2. Background and Rationale for Requirements. The San Diego Water Board developed the requirements in this Order based on information described in the Fact Sheet (Attachment F), through monitoring and reporting programs, and other available information. The Fact Sheet, which contains background information and rationale for the requirements in this Order, is hereby incorporated into and constitutes Findings for this Order. Attachments A through E are also incorporated into this Order.

3.3. Provisions and Requirements Implementing State Law. The provisions/requirements in subsection 4.1 and some of the requirements of subsection 4.4 are included to implement State law only. These provisions/requirements are not required under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

3.4. Notification of Interested Parties. The San Diego Water Board has notified existing Dischargers and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.

3.5. Consideration of Public Comment. The San Diego Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet.

THEREFORE, IT IS HEREBY ORDERED that this Order supersedes Order R9-2012-0063 except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations

adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the San Diego Water Board from taking enforcement action for violations of the previous Order.

4. DISCHARGE PROHIBITIONS

4.1. The discharge of lanthanum-modified clay to waters of the State in a manner causing, or threatening to cause a condition of pollution, contamination or nuisance as defined in section 13050 of the Water Code is prohibited.

4.2. The discharge of lanthanum-modified clay at a location or in a manner different from that described in this Order and the NOA is prohibited.

4.3. The discharge of lanthanum-modified clay shall not cause, have a reasonable potential to cause, or contribute to exceedances of any applicable water quality standard or criterion promulgated by U.S. EPA pursuant to section 303 of the CWA, or water quality objectives adopted by the State Water Board or San Diego Water Board.

4.4. The Discharger shall comply with Waste Discharge Prohibitions contained in Chapter 4 of the *Water Quality Control Plan for the San Diego Basin* (Basin Plan), incorporated into this Order as if fully set forth herein and summarized in Attachment G, as a condition of this Order.

5. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

5.1. Effluent Limitations

Dischargers shall implement BMPs when applying lanthanum-modified clay to surface waters. The BMPs must be provided in the WQMP, which is described in section 5.4.1 of this Order. Failure to implement the WQMP is a violation of this Order.

5.2. Land Discharge Specifications – Not Applicable

5.3. Recycling Specifications – Not Applicable

5.4. Best Management Practices

5.4.1. Water Quality Management Plan

Dischargers shall prepare and implement a WQMP to prevent or reduce the discharge of pollutants from the application of lanthanum-modified clay in compliance with the provisions of this Order. A separate WQMP must be prepared for each waterbody that will be treated with lanthanum-modified clay. The WQMP shall describe, at a minimum the following:

- The name and description of the waterbody to which lanthanum-modified clay will be applied, including but not limited to surface area, volume, beneficial uses, impairments, historic monitoring, inflowing streams, outflowing streams, upstream and downstream ecology, and any unique features.

- The time period for application of lanthanum-modified clay with particular attention paid to seasonal storm variations, seasonal water chemistry fluctuations, seasonal water volume fluctuations, and recreational uses.
- The application rate for lanthanum-modified clay to the waterbody, which must be demonstrated to be no more than what is stoichiometrically necessary to bind the free phosphorus in the waterbody. Any proposal to add additional lanthanum-modified clay than necessary must be explicitly approved by the San Diego Water Board in the NOA or an amended NOA.
- The BMPs that will be implemented to prevent the lanthanum-modified clay from discharging to downstream waterbodies. These BMPs may include and are not limited to silt curtains, berms, temporary diversions, and following product label instructions.
- The “good housekeeping” measures that will be implemented to prevent spills, leaks, and unintended discharges of lanthanum-modified clay during transport, staging, and storage.
- A certification that personnel are properly trained for the application of lanthanum-modified clay.
- The measures to take in the event of an exceedance of receiving water limitations caused by the application of lanthanum-modified clay. Such measures shall include, but are not limited, to ceasing the discharge, notifying the San Diego Water Board, and remedying the exceedance. The Discharger shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this Order and the NOA, including accelerated or additional monitoring as may be necessary to determine the nature and effect of the non-complying discharge.
- The source control measures to prevent the future inputs of phosphorus to the treated waterbody.
- Any other measures necessary to ensure that the discharge complies with this Order.
- A monitoring and reporting program, at minimum, addressing the requirements in section 8.1 of Attachment E. The monitoring and reporting program must include specific monitoring locations and analyses used to ensure compliance with this Order.

5.4.2. Major changes to the WQMP shall be submitted to the San Diego Water Board for approval. Examples of major changes include using a different product than what is specified in the WQMP, changing an application method, changing the amount of lanthanum-modified clay being applied, or adding or removing BMPs.

6. RECEIVING WATER LIMITATIONS

6.1. Surface Water Limitations

The surface water limitations set forth below are based on water quality objectives contained in State water quality control plans and policies and criteria specified in federal regulations and are a required part of this Order. The discharge of waste shall not cause or contribute to violations of these limitations:

6.1.1. **Bacterial Characteristics**

6.1.1.1. *Escherichia coli (E. coli)*

The bacteria water quality objective for all waters where the salinity is equal to or less than 1 part per thousand (ppth) 95 percent or more of the time during the calendar year is:

6.1.1.1.1. A six-week rolling geometric mean of *E. coli* not to exceed 100 colony forming units (CFU) per 100 milliliters (mL), calculated weekly; and

6.1.1.1.2. A statistical threshold value (STV) of 320 CFU/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.

6.1.1.2. Enterococci

The bacteria water quality objective for all waters where the salinity is greater than 1 ppth more than 5 percent of the time during the calendar year is:

6.1.1.2.1. A six-week rolling geometric mean of enterococci not to exceed 30 CFU/100 mL, calculated weekly; and

6.1.1.2.2. A STV of 110 CFU/100 mL not to be exceeded by more than 10 percent of the samples collected in a calendar month, calculated in a static manner.

6.1.2. **Chemical Characteristics**

6.1.2.1. Changes in normal ambient pH levels shall not exceed 0.5 units. The pH shall not be depressed below 6.5 nor raised above 8.5.

6.1.2.2. Concentrations of nitrogen and phosphorus, by themselves or in combination with other nutrients, shall be maintained at levels below those which stimulate algae and emergent plant growth.

6.1.2.3. The discharge of wastes shall not cause concentrations of un-ionized ammonia (NH3) to exceed 0.025 mg/L as nitrogen.

6.1.3. **Color**

Water shall be free of coloration that causes nuisance or adversely affects beneficial uses. The natural color of fish, shellfish, or other resources shall not be impaired.

6.1.4. **Floating Material**

Waters shall not contain floating material, including solids, liquids, foams, and scum in concentrations which cause nuisance or adversely affect beneficial uses.

6.1.5. **Oil and Grease**

Waters shall not contain oils, greases, waxes, or other materials in concentrations which result in a visible film or coating on the surface of the water or on objects in the water, or which cause nuisance or otherwise adversely affect beneficial uses.

6.1.6. **Radioactivity**

Radionuclides shall not be present in concentrations that are harmful/deleterious to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life

6.1.7. **Suspended Sediments**

The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

6.1.8. **Suspended and Settleable Solids**

Waters shall not contain suspended and settleable solids in concentrations of solids that cause nuisance or adversely affect beneficial uses.

6.1.9. **Taste and Odors**

Waters shall not contain taste or odor producing substances at concentrations which cause a nuisance or adversely affect beneficial uses.

6.1.10. **Temperature**

The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the San Diego Water Board that such alteration in temperature does not adversely affect beneficial uses. At no time or place shall the temperature of any waters with designated cold freshwater habitat be increased more than 5°F above the natural receiving water temperature.

6.1.11. **Toxic Substances**

All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance will be determined by use of indicator organisms, analysis of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods, as specified by the San Diego Water Board.

6.1.12. **Turbidity**

Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses.

6.1.13. **Dissolved Oxygen**

Dissolved oxygen levels shall not be less than 5.0 mg/L in inland surface waters with designated warm freshwater habitat beneficial uses. The annual mean

dissolved oxygen concentration shall not be less than 7 mg/L more than 10 percent of the time.

6.1.14. **Aquatic Communities**

Aquatic communities and populations, including vertebrates, invertebrates, and non-target plant species are not to be degraded.

6.2. Groundwater Limitations – Not Applicable

7. PROVISIONS

7.1. Standard Provisions

7.1.1. The Discharger shall comply with all Standard Provisions included in Attachment D.

7.1.2. The Discharger shall comply with the following San Diego Water Board provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply:

7.1.2.1. The Discharger shall comply with all requirements and conditions of this Order. Any permit non-compliance constitutes a violation of the CWA or the Water Code and is grounds for enforcement action, permit termination, revocation and reissuance, or modification, or for denial of an application for permit renewal, modification, or reissuance.

7.1.2.2. This Order expires on September 30, 2026, after which, the terms and conditions of this Order are automatically continued pending issuance of a new WDR, provided that all requirements of U.S. EPA's NPDES regulations at 40 CFR section 122.6 and the State's regulations at CCR title 23, section 2235.4 regarding the continuation of expired Orders and WDRs are met.

7.1.2.3. A copy of this Order shall be made available to all personnel/staff (including field staff) involved with the compliance of this Order.

7.1.2.4. For the purposes of this Order, the term permit, general permit, and WDR, shall have the same meaning as the term Order used elsewhere in this Order.

7.1.2.5. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges of lanthanum-modified clay, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, State, or federal law enforcement entities.

7.2. Monitoring and Reporting Program (MRP) Requirements

The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E.

7.3. Special Provisions

7.3.1. **Reopener Provisions.**

7.3.1.1. This Order or the NOA from the San Diego Water Board may be modified, revoked and reissued, or terminated for reasons including, but not limited to, the following:

- Violation of any terms or conditions of this Order or the NOA from the San Diego Water Board;
- Obtaining enrollment under this Order, or an NOA from the San Diego Water Board, by misrepresentation or failure to disclose fully all relevant facts;
- A change in any condition that requires either a temporary or permanent reduction or elimination of the discharge subject to WDRs;
- Promulgation of new or amended regulations by the State Water Board, San Diego Water Board or U.S. EPA, including revisions to the Basin Plan;
- Modification is warranted to address toxicity in discharges or receiving waters through new effluent limitations or other permit toxicity requirements or to implement new, revised, or newly interpreted water quality standards applicable to toxicity;
- Receipt of U.S. EPA guidance concerning regulated activities, judicial decision, or in accordance with the provisions of 40 CFR parts 122, 123, 124, and 125;
- The San Diego Water Board determines that continued discharges may cause unreasonable degradation of the aquatic environment; or
- Additional phosphorus mitigation active ingredients. This Order may be re-opened to add additional or new active ingredients for phosphorus mitigation.

7.3.1.2. The filing of a request by the Discharger for modification, revocation and reissuance, or termination of this Order or an associated discharge NOA from the San Diego Water Board, or a notification of planned change in or anticipated noncompliance with this Order or discharge NOA does not stay any condition of this Order or the NOA from the San Diego Water Board.

7.3.2. **Special Studies, Technical Papers and Additional Monitoring Requirements – Not Applicable**

7.3.3. **Construction, Operation and Maintenance Specifications – Not Applicable**

7.3.4. **Special Provisions for Publicly-Owned Treatment Works (POTWs) – Not Applicable**

7.3.5. **Other Special Provisions – Not Applicable**

7.3.6. **Compliance Schedules – Not Applicable**

8. COMPLIANCE DETERMINATION

8.1. Compliance with the receiving water limitations prescribed in section 6 of this Order will be determined by assessment of the results of the monitoring conducted in accordance with Attachment E of this Order, which is designed to answer the following key questions:

8.1.1. Does the discharge of lanthanum-modified clay cause or contribute to an exceedance of receiving water limitations?

8.1.2. Does the discharge of lanthanum-modified clay cause or contribute to an exceedance of the “no toxics in toxic amounts” narrative toxicity water quality objective?

ATTACHMENT A – DEFINITIONS

Application Area
Is the area of the treated waterbody to which lanthanum-modified clay is directly applied.

Arithmetic Mean (μ)
Also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

$$\text{Arithmetic mean } (\mu) = \frac{\Sigma x}{n}$$

where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL)
The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)
The highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Bioaccumulative
Those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic
Pollutants are substances that are known to cause cancer in living organisms.

Coefficient of Variation (CV)
CV is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Daily Discharge
Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a

day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ)
DNQ are those sample results less than the reporting limit (RL), but greater than or equal to the laboratory's method detection limit (MDL). Sample results reported as DNQ are estimated concentrations.

Effluent Concentration Allowance (ECA)
ECA is a value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as wasteload allocation (WLA) as used in U.S. EPA guidance (*Technical Support Document for Water Quality-based Toxics Control*, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bays
Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration
The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the minimum level (ML) value.

Estuaries
Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inland Surface Waters
All surface waters of the State of California (State) that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation
The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation
The lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL)
The highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median
The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order)

If the number of measurements (n) is odd, then:

$$\text{median} = \frac{X_{(n+1)}}{2}$$

If n is even, then:

$$\text{median} = \frac{X_{\frac{n}{2}} + X_{\frac{n}{2}+1}}{2}$$

(i.e., the midpoint between the (n/2 and ((n/2)+1))).

Method Detection Limit (MDL)
MDL is the minimum concentration of a substance that can be reported with 99 percent confidence that the measured concentration is distinguishable from method blank results, as defined in 40 Code of Federal Regulations (CFR). part 136, Attachment B.

Minimum Level (ML)
ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Mixing Zone
Mixing Zone is a limited volume of receiving water that is allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall waterbody.

Not Detected (ND)
Sample results which are less than the laboratory's MDL.

Persistent Pollutants
Persistent pollutants are substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program (PMP)
PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The San Diego Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention
Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the California State Water Resources Control Board (State Water Board) or San Diego Water Board.

Reporting Level (RL)
The RL is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order, including an additional factor if applicable as discussed herein. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the San Diego Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps

employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Source of Drinking Water
Any water designated as municipal or domestic supply (MUN) in the San Diego Basin Plan.

Standard Deviation (σ)
Standard Deviation is a measure of variability that is calculated as follows:

$$\text{Standard Deviation } (\sigma) = \frac{\Sigma(X-\mu)^2}{(n-1)^{0.5}}$$

where: x is the observed value; μ is the arithmetic mean of the observed values; and n is the number of samples.

Statistical Threshold Value (STV)
The STV for the bacteria water quality objectives is a set value that approximates the 90th percentile of the water quality distribution of a bacterial population. For the bacteria water quality objectives, the STV for E-coli is 320 CFU/100 mL.

Toxicity Reduction Evaluation (TRE)
TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

ATTACHMENT B – NOTICE OF INTENT

ORDER NO. R9-2021-0056
NPDES NO. CAG999003

GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FOR THE DISCHARGE OF LANTHANUM-MODIFIED CLAY TO SURFACE WATERS OF THE UNITED STATES IN THE SAN DIEGO REGION

1. NOTICE OF INTENT STATUS (see Instructions)

Mark only one item ☐ New Applicator ☐ Change of Information: WDID# _____ ☐ Change of Responsibility: WDID# _____

2. DISCHARGER INFORMATION

Name			
Mailing Address			
City	County	State	Zip Code
Contact Person	Title	Email Address	Phone

3. BILLING ADDRESS (Enter information only if different from Section 2 above)

Name			
Mailing Address			
City	County	State	Zip Code
Contact Person	Title	Email Address	Phone

4. TREATED WATERBODY INFORMATION

1. Lanthanum-modified clay will be discharged to (check all that apply):

   A. ☐ Canals, ditches, lakes, ponds, reservoirs or other storage or constructed conveyance facilities owned and controlled by Discharger.

   Name of the waterbody(ies):
   _____

   B. ☐ Canals, ditches, lakes, ponds, reservoirs or other storage or constructed conveyance facilities owned and controlled by someone other than the Discharger.

   Name of the waterbody(ies):
   _____

   Name of the entity(ies) who owns and controls the waterbody(ies):
   _____

2. Name(s) of adjacent and/or downstream creeks, streams, drainages, or other surface waters that may receive water from the treated waterbody.

   Name of the waterbody(ies): _____

3. Number of surface acres to be treated with Lanthanum-modified clay: _____

4. Attach a map of the proposed treatment area(s) and all adjacent creeks, streams, drainages, or other surface waters.

5. APPLICATION INFORMATION

1. Proposed Period of Application: Start Date:_____

   End Date:_____

2. Has a Water Quality Management Plan (WQMP) been prepared and included with this NOI as a part of the permit submittal? Yes ☐ No ☐

   If not, when will it be submitted?_____

   (Note: An NOA will not be issued without an approved WQMP.)

6. NOTIFICATION

Have potentially affected public and governmental agencies been notified?
Yes ☐ No ☐
List of public and governmental agencies notified:
_____

7. FEE

Has the filing fee (for first-time enrollees only) been included with this submittal?
Yes ☐ No ☐ N/A ☐

8. CERTIFICATION – (Must be signed by the legally responsible official described in section 5.2 of Attachment D of this Order)

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment. Additionally, I certify that the provisions of the Order, including developing and implementing a monitoring program, will be complied with".

Printed Name: _____

Signature: _____ Date: _____

Title: _____

INSTRUCTIONS FOR COMPLETING NOI

ORDER NO. R9-2021-0056
NPDES NO. CAG999003

GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FOR THE DISCHARGE OF LANTHANUM-MODIFIED CLAY TO SURFACE WATERS OF THE UNITED STATES IN THE SAN DIEGO REGION

These instructions are intended to help the Discharger to complete the Notice of Intent (NOI) form for this Order. Please type or print clearly when completing the NOI form. For any field, if more space is needed, submit a supplemental letter with the NOI.

Send the completed and signed form along with the filing fee and supporting documentation to the San Diego Water Board.

Section 1 – Notice of Intent Status

Indicate whether this request is for the first-time coverage under this Order or a change of information for the discharge already covered under this Order. For a change of information or responsibility, please supply the Waste Discharge Identification (WDID) number for the discharge.

Section 2 – Discharger Information

- Enter the name of the Discharger.
- Enter the street number and street name where correspondence should be sent (P.O. Box is acceptable).
- Enter the city that applies to the mailing address given.
- Enter the county that applies to the mailing address given.
- Enter the state that applies to the mailing address given.
- Enter the zip code that applies to the mailing address given.
- Enter the name (first and last) of the contact person.
- Enter the contact person’s title.
- Enter the email address of the contact person.
- Enter the daytime telephone number of the contact person.

Section 3 – Billing Address

- Enter the information only if it is different from Section 2 above.
- Enter the name of the Discharger.
- Enter the street number and street name where the billing should be sent (P.O. Box is acceptable).
- Enter the city that applies to the billing address.

- Enter the county that applies to the billing address.
- Enter the state that applies to the billing address.
- Enter the zip code that applies to the billing address.
- Enter the name (first and last) of the person who will be responsible for the billing.
- Enter the title of the person responsible for billing.
- Enter the email address of the person responsible for billing.
- Enter the daytime telephone number of the person responsible for billing.

Section 4 – Receiving Water Information

This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 et. seq.) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 et. seq.). This Order requires compliance with effluent limitations, receiving water limitations, and other requirements to protect the beneficial uses of waters of the State of California. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

Additional information on federally-listed threatened or endangered species and federally-designated critical habitat is available from National Marine Fisheries Service (www.nmfs.noaa.gov) for anadromous or marine species or United States Fish and Wildlife Service (www.fws.gov) for terrestrial or freshwater species.

1. Check all boxes that apply.
   A. Check this box if the treatment area is a canal, ditch, lake, pond, reservoir or other storage or constructed conveyance facility that is owned and operated by the Discharger. Print the name of the waterbody or waterbodies.
   B. Check this box if the treatment area is a canal, ditch, lake, pond, reservoir or other storage or constructed conveyance facility that is owned and operated by someone other than the Discharger. Print the name of the waterbody or waterbodies and the name or names of the entities that own and operate the waterbody.
2. Print the name(s) of adjacent creeks, streams, drainages, etc. that may receive water from the treated waterbody.
3. Identify the number of surface acres that will be treated with Lanthanum-modified clay.
4. Attach a map of the proposed treatment area(s) and all adjacent and/or downstream creeks, streams, drainages, or other surfaces waters

Section 5 –Application Information

1. List the time frame of the proposed application.

2. Identify whether or not a Water Quality Management Plan (WQMP) has been prepared and is included with the NOI in the permit submittal.

The Discharger must submit a new NOI if any information stated in this section will be changed.

Section 6 – Notification

Have the potentially affected governmental agencies been notified, as required under section 6 of the NOI? Attach a list of notified public and government agencies with their contact information to the NOI.

Section 7 – Fee

The amount of Annual fee shall be based on Category 3 discharge specified in section 2200(b)(9) of Title 23, California Code of Regulations. Fee information can be found on the California State Water Resources Control Board's Fees Home Page (https://www.waterboards.ca.gov/resources/fees/).

Check the YES box if you have included payment of the annual fee. Check the NO box if you have not included this payment. NOTE: You will be billed annually and payment is required to continue coverage.

Section 8 – Certification

Print the name of the appropriate official. The person who signs the NOI must meet the signatory and certification requirements stated in Attachment D - Standard Provisions section 5.2. The person whose name is printed above must sign and date the NOI. Enter the title of the person signing the NOI.

ATTACHMENT C – NOTICE OF TERMINATION

ORDER NO. R9-2021-0056
NPDES NO. CAG999003

GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT FOR THE DISCHARGE OF LANTHANUM-MODIFIED CLAY TO SURFACE WATERS OF THE UNITED STATES IN THE SAN DIEGO REGION

1. WDID

WDID# _____

2. DISCHARGER INFORMATION

Name			
Mailing Address			
City	County	State	Zip Code
Contact Person	Title	Email Address	Phone

3. BASIS FOR TERMINATION

4. CERTIFICATION

"I certify under penalty of law that 1) I am not required to be permitted under this Order, NPDES Permit No.CAG999003, and 2) this document and all attachments were prepared under my direction and supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment. Additionally, I understand that the submittal of this Notice of Termination does not release the discharger from liability for any violations of the Clean Water Act".

Printed Name: _____

Signature:_____ Date: _____

Title: _____

ATTACHMENT D – STANDARD PROVISIONS

1. STANDARD PROVISIONS – PERMIT COMPLIANCE

1.1. Duty to Comply

1.1.1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; permit termination, revocation and reissuance, or modification; denial of a permit renewal application; or a combination thereof. (40 Code of Federal Regulations (CFR) § 122.41(a); Wat. Code, §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)

1.1.2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 CFR § 122.41(a)(1).)

1.2. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 CFR § 122.41(c).)

1.3. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 CFR § 122.41(d).)

1.4. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 CFR § 122.41(e).)

1.5. Property Rights

1.5.1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 CFR § 122.41(g).)

1.5.2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations. (40 CFR § 122.5(c).)

1.6. Inspection and Entry

The Discharger shall allow the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board), California State Water Resources Control Board (State Water Board), United States Environmental Protection Agency (U.S. EPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (33 U.S.C. § 1318(a)(4)(B); 40 CFR § 122.41(i); Wat. Code, §§ 13267, 13383):

1.6.1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(i); 40 CFR § 122.41(i)(1); Wat. Code, §§ 13267, 13383);

1.6.2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 CFR § 122.41(i)(2); Wat. Code, §§ 13267, 13383);

1.6.3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 CFR § 122.41(i)(3); Wat. Code, §§ 13267, 13383); and

1.6.4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C. § 1318(a)(4)(B); 40 CFR § 122.41(i)(4); Wat. Code, §§ 13267, 13383.)

1.7. Bypass

1.7.1. Definitions

1.7.1.1. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR § 122.41(m)(1)(i).)

1.7.1.2. “Severe property damage” means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR § 122.41(m)(1)(ii).)

1.7.2. **Bypass not exceeding limitations.** The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance 1.7.3, 1.7.4, and 1.7.5 below. (40 CFR § 122.41(m)(2).)

1.7.3. **Prohibition of bypass.** Bypass is prohibited, and the San Diego Water Board may take enforcement action against a Discharger for bypass, unless (40 CFR § 122.41(m)(4)(i)):

1.7.3.1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 CFR § 122.41(m)(4)(i)(A));

1.7.3.2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 CFR § 122.41(m)(4)(i)(B)); and

1.7.3.3. The Discharger submitted notice to the San Diego Water Board as required under Standard Provisions – Permit Compliance 1.7.5 below. (40 CFR § 122.41(m)(4)(i)(C).)

1.7.4. The San Diego Water Board may approve an anticipated bypass, after considering its adverse effects, if the San Diego Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance 1.7.3 above. (40 CFR § 122.41(m)(4)(ii).)

1.7.5. **Notice**

1.7.5.1. **Anticipated bypass.** If the Discharger knows in advance of the need for a bypass, it shall submit prior notice, if possible, at least 10 days before the date of the bypass. Notices shall comply with 40 CFR part 3, 40 CFR section 122.22, and 40 CFR part 127. (40 CFR § 122.41(m)(3)(i).)

1.7.5.2. **Unanticipated bypass.** The Discharger shall submit a notice of an unanticipated bypass as required in Standard Provisions - Reporting 5.5 below (24-hour notice). Notices shall comply with 40 CFR part 3, 40 CFR section 122.22, and 40 CFR part 127. (40 CFR § 122.41(m)(3)(ii).)

1.8. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 CFR § 122.41(n)(1).)

1.8.1. **Effect of an upset.** An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance 1.8.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 CFR § 122.41(n)(2).)

1.8.2 **Conditions necessary for a demonstration of upset.** A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 CFR § 122.41(n)(3)):

1.8.2.1. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 CFR § 122.41(n)(3)(i));

1.8.2.2. The permitted facility was, at the time, being properly operated (40 CFR § 122.41(n)(3)(ii));

1.8.2.3. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting 5.5.2.2 below (24-hour notice) (40 CFR § 122.41(n)(3)(iii)); and

1.8.2.4. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance 1.3 above. (40 CFR § 122.41(n)(3)(iv).)

1.8.3**. Burden of proof.** In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 CFR § 122.41(n)(4).)

2. STANDARD PROVISIONS – PERMIT ACTION

2.1. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 CFR § 122.41(f).)

2.2. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 CFR § 122.41(b).)

2.3. Transfers

This Order is not transferable to any person except after notice to the San Diego Water Board. The San Diego Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 CFR §§ 122.41(l)(3), 122.61.)

3. STANDARD PROVISIONS – MONITORING

3.1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 CFR § 122.41(j)(1).)

3.2. Monitoring must be conducted according to test procedures approved under 40 CFR part 136 for the analyses of pollutants unless another method is required under 40 CFR chapter 1, subchapter N. Monitoring must be conducted according to sufficiently sensitive test methods approved under 40 CFR part 136 for the analysis of pollutants or pollutant parameters or as required under 40 CFR chapter 1, subchapter N. For the purposes of this paragraph, a method is sufficiently sensitive when:

3.2.1. The method minimum level (ML) is at or below the level of the most stringent effluent limitation established in the permit for the measured pollutant or pollutant

parameter, and either the method ML is at or below the level of the most stringent applicable water quality criterion for the measured pollutant or pollutant parameter or the method ML is above the applicable water quality criterion but the amount of the pollutant or pollutant parameter in the facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or

3.2.2. The method has the lowest ML of the analytical methods approved under 40 CFR part 136 or required under 40 CFR chapter 1, subchapter N for the measured pollutant or pollutant parameter. In the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR part 136, or otherwise required under 40 CFR chapter 1, subchapter N, monitoring must be conducted according to a test procedure specified in this Order for such pollutants or pollutant parameters. (40 CFR §§ 122.21(e)(3), 122.41(j)(4), 122.44(i)(1)(iv).)

4. STANDARD PROVISIONS – RECORDS

4.1. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the San Diego Water Board Executive Officer at any time. (40 CFR § 122.41(j)(2).)

4.2. Records of monitoring information shall include:

4.2.1. The date, exact place, and time of sampling or measurements (40 CFR § 122.41(j)(3)(i));

4.2.2. The individual(s) who performed the sampling or measurements (40 CFR § 122.41(j)(3)(ii));

4.2.3. The date(s) analyses were performed (40 CFR § 122.41(j)(3)(iii));

4.2.4. The individual(s) who performed the analyses (40 CFR § 122.41(j)(3)(iv));

4.2.5. The analytical techniques or methods used (40 CFR § 122.41(j)(3)(v)); and

4.2.6. The results of such analyses. (40 CFR § 122.41(j)(3)(vi).)

4.3. Claims of confidentiality for the following information will be denied (40 CFR § 122.7(b)):

4.3.1. The name and address of any permit applicant or Discharger (40 CFR § 122.7(b)(1)); and

4.3.2. Permit applications and attachments, permits and effluent data. (40 CFR § 122.7(b)(2).)

5. STANDARD PROVISIONS – REPORTING

5.1. Duty to Provide Information

The Discharger shall furnish to the San Diego Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the San Diego Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the San Diego Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 CFR § 122.41(h); Wat. Code, §§ 13267, 13383.)

5.2. Signatory and Certification Requirements

5.2.1. All applications, reports, or information submitted to the San Diego Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions – Reporting 5.2.2, 5.2.3, 5.2.4, 5.2.5, and 5.2.6 below. (40 CFR § 122.41(k).)

5.2.2. For a corporation, all permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 CFR § 122.22(a)(1).)

5.2.2. For a partnership or sole proprietorship, all permit applications shall be signed by a general partner or the proprietor, respectively. (40 CFR § 122.22(a)(2).)

5.2.2. For a municipality, State, federal, or other public agency, all permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 CFR § 122.22(a)(3).).

5.2.3. All reports required by this Order and other information requested by the San Diego Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting 5.2.2 above, or by a duly

authorized representative of that person. A person is a duly authorized representative only if:

5.2.3.1. The authorization is made in writing by a person described in Standard Provisions – Reporting 5.2.2 above (40 CFR § 122.22(b)(1));

5.2.3.2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 CFR § 122.22(b)(2)); and

5.2.3.3. The written authorization is submitted to the San Diego Water Board and State Water Board. (40 CFR § 122.22(b)(3).)

5.2.4. If an authorization under Standard Provisions – Reporting 5.2.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting 5.2.3 above must be submitted to the San Diego Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 CFR § 122.22(c).)

5.2.5. Any person signing a document under Standard Provisions – Reporting 5.2.2 or 5.2.3 above shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 CFR § 122.22(d).)

5.2.6. Any person providing the electronic signature for documents described in Standard Provisions – 5.2.1, 5.2.2, or 5.2.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions – Reporting 5.2, and shall ensure that all relevant requirements of 40 CFR part 3 (Cross-Media Electronic Reporting) and 40 CFR part 127 (NPDES Electronic Reporting Requirements) are met for that submission. (40 C.F.R § 122.22(e).)

5.3. Monitoring Reports

5.3.1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 CFR § 122.41(l)(4).)

5.3.2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the San Diego Water Board or State Water

Board. As of December 21, 2016, all reports and forms must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting 5.10 and comply with 40 CFR part 3, 40 CFR section 122.22, and 40 CFR part 127. (40 CFR § 122.41(l)(4)(i).)

5.3.3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR part 136, or another method required for an industry-specific waste stream under 40 CFR chapter 1, subchapter N, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or reporting form specified by the San Diego Water Board or State Water Board.
(40 CFR § 122.41(l)(4)(ii).)

5.3.4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order.
(40 CFR § 122.41(l)(4)(iii).)

5.4. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date.
(40 CFR § 122.41(l)(5).)

5.5. Twenty-Four Hour Reporting

5.5.1. The Discharger shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A report shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (i.e., combined sewer overflow, sanitary sewer overflow, or bypass event), type of overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volume untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the event, and whether the noncompliance was related to wet weather. (40 CFR § 122.41(l)(6)(i).)

5.5.2. The following shall be included as information that must be reported within 24 hours:

5.5.2.1. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 CFR § 122.41(l)(6)(ii)(A).)

5.5.2.2. Any upset that exceeds any effluent limitation in this Order. (40 CFR § 122.41(l)(6)(ii)(B).)

5.5.3. The San Diego Water Board may waive the above required written report on a case-by-case basis if an oral report has been received within 24 hours. (40 CFR § 122.41(l)(6)(ii)(B).)

5.6. Planned Changes

The Discharger shall give notice to the San Diego Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 CFR § 122.41(l)(1)):

5.6.1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 CFR § 122.41(l)(1)(i)); or

5.6.2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 CFR § 122.41(l)(1)(ii).) **OR**

5.6.2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels 7.1.1). (40 CFR § 122.41(l)(1)(ii).)

5.7. Anticipated Noncompliance

The Discharger shall give advance notice to the San Diego Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 CFR § 122.41(l)(2).)

5.8. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting 5.3, 5.4, and 5.5 above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting 5.5 above. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting 5.5 and the applicable required data in appendix A to 40 CFR part 127. The San Diego Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 CFR § 122.41(l)(7).)

5.9 Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the San Diego Water Board, State Water Board, or U.S. EPA, the Discharger shall promptly submit such facts or information. (40 CFR § 122.41(l)(8).)

5.10. Initial Recipient for Electronic Reporting Data

The owner, operator, or the duly authorized representative is required to electronically submit NPDES information specified in appendix A to 40 CFR part 127 to the initial recipient defined in 40 CFR section 127.2(b). U.S. EPA will identify and publish the list of initial recipients on its website and in the Federal Register, by state and by NPDES data group [see 40 CFR section 127.2(c)]. U.S. EPA will update and maintain this listing. (40 CFR § 122.41(l)(9).)

6. STANDARD PROVISIONS – ENFORCEMENT

6.1. The San Diego Water Board is authorized to enforce the terms of this permit under several provisions of the Water Code, including, but not limited to, sections 13268, 13385, 13386, and 13387.

7. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

7.1. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the San Diego Water Board as soon as they know or have reason to believe (40 CFR § 122.42(a)):

7.1.1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 CFR § 122.42(a)(1)):

7.1.1.1. 100 micrograms per liter (µg/L) (40 CFR § 122.42(a)(1)(i));

7.1.1.2. 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4 dinitrophenol and 2-methyl 4,6 dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 CFR § 122.42(a)(1)(ii));

7.1.1.3. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 CFR § 122.42(a)(1)(iii)); or

7.1.1.4. The level established by the San Diego Water Board in accordance with section 122.44(f). (40 CFR § 122.42(a)(1)(iv).)

7.1.2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following “notification levels" (40 CFR § 122.42(a)(2)):

7.1.2.1. 500 micrograms per liter (µg/L) (40 CFR § 122.42(a)(2)(i));

7.1.2.2. 1 milligram per liter (mg/L) for antimony (40 CFR § 122.42(a)(2)(ii));

7.1.2.3. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 CFR § 122.42(a)(2)(iii)); or

7.1.2.4. The level established by the San Diego Water Board in accordance with section 122.44(f). (40 CFR § 122.42(a)(2)(iv).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Section 308 of the federal Clean Water Act (CWA) and sections 122.41(h), (j)-(l), 122.44(i), and 122.48 of title 40 of the Code of Federal Regulations (40 CFR) require that all National Pollutant Discharge Elimination System (NPDES) permits specify monitoring and reporting requirements. California Water Code (Water Code) section 13383 also authorizes the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. This Monitoring and Reporting Program (MRP) establishes monitoring, reporting, and recordkeeping requirements that implement federal and State of California (State) laws and/or regulations.

1. GENERAL MONITORING PROVISIONS

1.1. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. Another waste stream, body of water, or substance shall not dilute the monitored discharge. All samples shall be taken at the anticipated monitoring locations specified in the Discharger's Water Quality Management Plan (WQMP).

1.2. All laboratory analyses shall be conducted at a laboratory certified for such analyses by the California State Water Resources Control Board (State Water Board) Division of Drinking Water (DDW). The laboratory must be accredited under the DDW Environmental Laboratory Accreditation Program (ELAP) to ensure the quality of analytical data used for regulatory purposes to meet the requirements of this Order. Sample analyses must include quality assurance/quality control (QA/QC) data in the reports. Laboratories that perform sample analyses shall be identified in all monitoring reports. The Discharger shall institute a QA/QC Program for any onsite field measurements such as electric conductivity, pH, turbidity, and temperature. The QA/QC Program must be specified in the Discharger's WQMP and must conform to United States Environmental Protection Agency (U.S. EPA) guidelines or to procedures approved by the State Water Board or the San Diego Water Board.

1.3. Water monitoring must be conducted according to U.S. EPA test procedures approved under 40 CFR section 136, *Guidelines Establishing Test procedures for the Analysis of Pollutants Under the Clean Water Act*, as amended, or an alternative test procedure (ATP) approved by U.S. EPA, or by the San Diego Water Board when there are no methods specified for a pollutant at 40 CFR part 136.

1.4. Records of monitoring information shall include the following:

- The date, exact place, and time of sampling or measurements;
- The individuals who performed the sampling or measurements;
- The dates analysis were performed;
- The individuals who performed the analyses;
- The analytical techniques or methods used; and

- Results of analyses.

1.5. All monitoring instruments and devices used to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their accuracy.

1.6. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this MRP.

1.7. When requested by U.S. EPA or the San Diego Water Board, the Discharger shall participate in the NPDES Discharge Monitoring Report QA (DMR-QA) performance study or submit the most recent Water Pollution Performance Evaluation Study. If required, the Discharger shall ensure that the results of the DMR-QA Study or the most recent Water Pollution Performance Evaluation Study are submitted annually by December 31 to the State Water Board at the following address:

State Water Resources Control Board
Quality Assurance Program Officer
Office of Information Management and Analysis
1001 I Street, Sacramento, CA 95814

2. MONITORING LOCATIONS

The Discharger shall establish a sufficient number of monitoring locations to obtain samples that represent: (a) the quality of surface water prior to application; (b) the quality of surface water within the treatment area; and (c) the quality of surface water outside the treatment area that potentially could be affected by the application.

As part of the WQMP, the Discharger shall propose the specific monitoring locations and demonstrate that the proposed locations are sufficient to assess compliance with the receiving water limitations, discharge specifications, and other requirements in this Order. Monitoring location information shall include a description of the treatment area, GPS coordinates, and total proposed amount and rate of lanthanum-modified clay being applied. The specific monitoring locations initially identified in the WQMP may be changed upon approval by the San Diego Water Board.

3. INFLUENT MONITORING REQUIREMENTS – NOT APPLICABLE

4. EFFLUENT MONITORING REQUIREMENTS – NOT APPLICABLE

5. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS – NOT APPLICABLE

6. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

7. RECYCLING MONITORING REQUIREMENTS – NOT APPLICABLE

8. RECEIVING WATER MONITORING REQUIREMENTS

8.1. Water Quality Management Plan Monitoring Program

8.1.1. The monitoring program described in the WQMP shall be designed to answer these two key questions:

1) Does the discharge of lanthanum-modified clay cause or contribute to an exceedance of receiving water limitations?

2) Does the discharge of lanthanum-modified clay cause or contribute to an exceedance of the “no toxics in toxic amounts” narrative toxicity water quality objective?

The monitoring program in the WQMP shall describe the tasks and time schedules in which these two key questions will be addressed.

8.1.2. The monitoring program described in the WQMP shall consider watershed-specific attributes and waste constituents, based on the characteristics of waterbodies upstream and downstream of the application area, as well as the receiving water quality conditions. Developing the details of a monitoring design requires clearly defining several inputs to the design and then organizing these in a logical framework that supports effective decision making about indicators, monitoring locations, and monitoring frequency. The logical framework should describe:

- The basic geographic and hydrographic features of the area, particularly application points and the pathways(s) of residue flows;
- Lanthanum-modified clay application practices and how they are distributed in space and time;
- Relevant knowledge about the transport, fates, and effects of lanthanum-modified clay, including best and worst case scenarios;
- Description of the designated beneficial uses in each waterbody;
- Relevant knowledge about the action of cumulative and indirect effects of lanthanum-modified clay;
- Mechanisms through which lanthanum-modified clay applications could lead to designated use impacts, given the basic features of the area;
- Known and potential impacts of lanthanum-modified clay applications on water quality, ranked in terms of relative risk, based on factors such as magnitude, frequency and duration;
- A QA/QC Program for any onsite field measurements such as electric conductivity, pH, turbidity, and temperature. The QA/QC Control Program shall be in conformance with U.S. EPA guidelines or to procedures approved by the State Water Board or the San Diego Water Board;
- Sufficient number of monitoring locations to assess the entire area of influence from the application, including the map of the monitoring locations with GPS coordinates listed; and
- A description of sampling methods and a sampling schedule.

8.1.3. **Monitoring Phases**

The following monitoring phases shall be described in the WQMP:

8.1.3.1. Pre-Application Monitoring. Background monitoring samples shall be collected prior to the time of the application event, at the specified monitoring locations no sooner than 24 hours before the application area.

8.1.3.2. Event Monitoring. Event monitoring samples shall be collected during application and immediately after sufficient time has elapsed such that treated water will have exited the treatment area.

8.1.3.2.1. Static Water. (such as ponds, lakes, reservoirs, and slow moving or quiescent bodies of water) Samples shall be collected within the treatment area. A minimum of one sample location per 10 surface acres (or fraction thereof) is required.

8.1.3.2.2. Flowing Water. (such as canals, streams, creeks, and ditches) Samples shall be collected within the treatment area and outside the treatment area after sufficient time has elapsed such that treated water will have exited the treatment area. A minimum of one sample location per 10 acres of treatment area (or fraction thereof) and one location immediately downstream of the treated waterbody.

8.1.3.3. Post-Event Monitoring. Post-event monitoring samples shall be collected within the application area in static water and within and outside the treatment area in flowing water within one week after application.

8.1.4. **Receiving Water Conditions Log**

In conducting the receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by the treatment area. Attention shall be given to the presence or absence of:

- Floating or suspended matter;
- Discoloration;
- Bottom deposits;
- Aquatic life;
- Visible films, sheens, or coatings;
- Fungi, slimes, or objectionable growths;
- Potential harmful algal blooms (HABs); and
- Potential nuisance conditions.

Notes on receiving water conditions shall be summarized in the monitoring reports.

8.2. Visual, Physical, and Chemical Monitoring Requirements

Pre-application, event, and post-application samples of the sediment and water column shall be collected at each designated monitoring station(s), times, and frequencies as specified in the WQMP and analyzed for the constituents as specified below. No less than one sediment and one surface water sample shall be

collected for every 10 surface acres (or fraction thereof) being treated. Any proposed changes or alternatives to these requirements shall be justified with logical reasoning and approved by the San Diego Water Board.

8.2.1. **Visual Monitoring.** Visual monitoring shall describe the monitoring area, appearance of the waterbody, and note the weather conditions. Visual observations shall record the presence, if any, of floatable materials, watercolor, discoloration, oil and grease sheens, turbidity, and odor. The Discharger shall also conduct visual observations for HABs using the latest version of the Surface Water Ambient Monitoring Program's (SWAMP's) *Visual Guide to Observing Blooms* (https://drive.google.com/file/d/0B40pxPC5g-D0R2QtUVZhYzNIaXc/view). If a potential HAB is observed, the Discharger shall to report the HAB to the State Water Board within 24 hours using the *California Freshwater and Estuarine Harmful Algal Bloom Report Form* (https://mywaterquality.ca.gov/habs/do/bloomreport.html).

8.2.2. **Physical Monitoring.** Physical monitoring shall take a profile sample of the water column that measures and records the temperature, depth, dissolved oxygen, and pH at one-foot intervals.

8.2.3. **Chemical Monitoring.** A grab sample at the surface and a separate grab sample of the bottom of the waterbody shall be taken and separately analyzed for the following parameters:

- Free Lanthanum – water, micrograms per liter (µg/L);
- Total Lanthanum – sediment (two bottom samples shall be taken), µg/kg;
- Dissolved Oxygen – water, milligrams per liter (mg/L);
- Alkalinity – water, mg/L $CaCO_3$;
- Total Suspended Solids – water, mg/L;
- Free Reactive Phosphorus – water, mg/L;
- Total Phosphorus – water, mg/L; and
- Total Phosphorus – sediment (two bottom samples shall be taken), mg/kg.

8.3. Biological Monitoring Requirements

The following monitoring requirements may apply to the application of lanthanum-modified clay to freshwater inland surface waters within the San Diego Region that have wadeable stream habitats upstream and downstream of the treatment area. The San Diego Water Board may require this or similar monitoring through the Notice of Applicability letter.

8.3.1. **Bioassessment Monitoring.** The Discharger shall conduct pre- and post-treatment bioassessment monitoring in wadeable stream habitats upstream and downstream of the treatment area. Specific details on location, frequency, and timing shall be described in the WQMP. The sampling of benthic macroinvertebrates, algae and physical habitat shall be conducted in accordance with the latest SWAMP standard operating procedures (SOPs) for wadeable

streams (Ode et al. 2016).[1] Benthic macroinvertebrates and algae analyses shall be conducted within seven days prior to commencement of the application and within 30 days of post-application. Post-application benthic monitoring is not required if no discharge from the treated waterbody occurs during application or within 30 days after the completion of the application.

Field sampling for bioassessment shall be conducted by properly trained personnel and in adherence to the latest State SOPs in an unbiased manner representative of stream reach condition. Field sampling shall be consistent with the SWAMP Quality Assurance Program Plan (https://www.waterboards.ca.gov/water_issues/programs/swamp/qapp/swamp_QAPrP_2017_Final.pdf) guidelines and requirements or shall have a project-specific Quality Assurance Project Plan that meets these minimum guidelines and requirements, such as the *Southern California Regional Watershed Monitoring Program Bioassessment Quality Assurance Project Plan*, 2009.

Laboratory analysis of benthic macroinvertebrates for taxonomic identifications shall be conducted at a Southwest Association of Freshwater Invertebrate Taxonomists (SAFIT) level of II or IIa level (midges to subfamily) in accordance with the most recent State SOPs for Laboratory Processing and Identification of Benthic Macroinvertebrates in California (Woodward et al. 2012).[2] Laboratory identification and quantification of specimens in the benthic stream algal communities shall follow the latest *SWAMP Standard Operating Procedures for Laboratory Processing, Identification, and Enumeration of Stream Algae* (Stancheva et al. 2015)[3], which prescribes methods for separate analysis of 1) diatoms and 2) soft algae (including cyanobacteria). Though not developed at this time, future laboratory identification using genetic methods may be used if consistent with laboratory results and conducted using methods approved by the SWAMP and the San Diego Water Board.

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[1] Ode, P.R., A.E., Fetscher, and L.B. Busse. 2016. *Standard Operating Procedures (SOP) for the Collection of Field Data for Bioassessments of California Wadeable Streams: Benthic Macroinvertebrates, Algae, and Physical Habitat.* California State Water Resources Control Board Surface Water Ambient Monitoring Program (SWAMP) SOP-2015-0003. Program (SWAMP) SOP-SB-2016-0001.

[2] Woodard, M.E., J. Slusark, and P.R. Ode. 2012. *Standard Operating Procedures for Laboratory Processing and Identification of Benthic Macroinvertebrates in California*. California State Water Resources Control Board Surface Water Ambient Monitoring Program (SWAMP) Bioassessment SOP 003.

[3] Stancheva, R., Busse, L., Kociolek, J. P., and Sheath, R. G., 2015. *Standard Operating Procedures for Laboratory Processing, Identification, and Enumeration of Stream Algae*. California State Water Resources Control Board Surface Water Ambient Monitoring Program (SWAMP) SOP-2015-0003.

Benthic macroinvertebrate data collected and identified to SAFIT Level II or IIa shall be used for calculating California Stream Condition Index scores on a per sample basis (one reach, one sampling event). Scores are calculated using the most recent version of *The California Stream Condition Index (CSCI): Guidance for Calculating Scores Using GIS and R* (current version: Mazor et al. 2017)[4].

Benthic algal Indices of Biotic Integrity scores shall be calculated using (Fetscher et al. 2014)[5]: 1) the diatom index, D18, 2) the soft-algae index, S2, and 3) the "hybrid" index, H20, which incorporates metrics from both the diatom and soft-algae assemblages.

8.3.2. **Other Potential Monitoring.** Through the Notice of Applicability, the San Diego Water Board may require monitoring for chlorophyll a and algae ID with cell count at the monitoring locations for the pre-event, event, and post-event monitoring as specified in the Discharger's WQMP.

8.4. California Environmental Data Exchange Network

The Discharger shall ensure that all the receiving water monitoring results are submitted to the California Environmental Data Exchange Network (CEDEN) no later than 90 days after the completion of sample analyses. The Discharger shall submit in the Annual Report (see section 10.2.4 of this MRP) a certification statement that all receiving water monitoring data has been submitted to CEDEN within 90 days after the completion of sample analyses.

9. OTHER MONITORING REQUIREMENTS.

9.1. Water Quality Management Log

The Discharger shall maintain a log for each lanthanum-modified clay application. This log shall contain, at a minimum, the following information:

- Date of application;
- Location of application;
- Name of applicator;

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[4] Mazor, R.M., Ode, P.R., Rehn, A.C., Engeln, M., Boyle, T., Fintel, E., Verbrugge, S. and C. Yang. 2017. *The California Stream Condition Index (CSCI): Interim instructions for calculating scores using GIS and R*. SWAMP SOP-2015-0004. Revision Update April 14, 2017.

[5] Fetscher, A.E., Stancheva, R., Kociolek, J.P., Sheath, R.G., Stein, E.D., Mazor, R.D., Ode, P.R. and L.B. Busse. 2014. *Development and Comparison of Stream Indices of Biotic Integrity Using Diatoms vs. Non-diatom Algae vs. a Combination*. Journal of Applied Phycology 26:443-450.

- Application details, such as flow and level of water body, time application started and stopped, lanthanum-modified clay application rate and concentration, and total application amount;
- Visual monitoring assessment; and
- Certification that applicator(s) implemented the WQMP.

10. REPORTING REQUIREMENTS

10.1. General Monitoring and Reporting Requirements

The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping, and the requirements of the WQMP.

10.2. Self-Monitoring Reports (SMRs)

10.2.1. The Discharger shall electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Program website (https://www.waterboards.ca.gov/water_issues/programs/ciwqs). The CIWQS website will provide additional information for SMR submittal in the event there will be a planned service interruption for electronic submittal.

10.2.2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections 3 through 9. The Discharger shall submit post-event SMRs including the results of all required monitoring using U.S. EPA-approved test methods or other test methods specified in this Order. SMRs are to include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.

10.2.3. **Event Report.** Following each application event, the Discharger shall prepare and submit a report to the San Diego Water Board within 45 days of the Post-Event sampling. The report shall cover the application period with all monitoring results including the laboratory reports from the Pre-Event, Event, and Post-Event sampling.

10.2.4. **Annual Report.** An annual status report shall be sent to the San Diego Water Board by April 1 of the following and shall include:

- A summary of all application events and monitoring results for the previous year including trend analysis;
- A discussion, evaluation, and interpretation of the data including interpretations and conclusions as to whether applicable receiving water limitations in this Order have been attained;
- A discussion addressing the questions proposed in section 8.1 of this MRP;
- A list of potential sources of the reportable priority pollutant(s);
- A summary of all actions undertaken pursuant to the control strategy;
- A description of actions to be taken in the following year; and

- A certification statement that all receiving water monitoring data has been timely uploaded to CEDEN.

10.2.5. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR part 136. The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

10.2.5.1. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

10.2.5.2. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (± a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

10.2.5.3. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

10.2.5.4. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

10.2.6. The Discharger shall submit SMRs in accordance with the following requirements:

10.2.6.1. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the discharge is in compliance with receiving water limitations and BMP requirements. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

10.2.6.2. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the waste discharge requirements; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations shall include a description of the requirement that was violated and a description of the violation.

10.3. Discharge Monitoring Reports (DMRs) – Not Applicable

10.4. Other Reports – Not Applicable

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in section 3.2 of this Order, the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) incorporates this Fact Sheet as findings of the San Diego Water Board supporting the issuance of this Order. This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Only those sections or subsections of this Order that are specifically identified as "not applicable" have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as "not applicable" are fully applicable to this Discharger.

1. PERMIT INFORMATION

The following table summarizes administrative information for the purposes of this Order.

Table F-1. Facility Information

Discharger	Any person discharging pollutant wastes associated with the application of lanthanum-modified clay to surface waters in the San Diego Region.
Major or Minor Facility	Minor
Threat to Water Quality	3
Complexity	C
Watershed	Watersheds in the San Diego Region
Receiving Water	Freshwater Inland Surface Waters in the San Diego Region
Receiving Water Type	Freshwater Inland Surface Waters in the San Diego Region

1.1. This Order is a National Pollutant Discharge Elimination System (NPDES) permit that regulates the discharge of lanthanum-modified clay to freshwater inland surface waters within the San Diego Region. Coverage under this Order is limited to the discharge of lanthanum-modified clay to canals, ditches, lakes, ponds, reservoirs or other storage or constructed conveyance facilities that are surface waters of the United States (U.S.) for the purpose of inactivating soluble reactive phosphorus.

Discharges of lanthanum-modified clay to receiving waters within the San Diego Region that obtain coverage under this Order are required to comply with the effluent limitations, discharge specifications, discharge prohibitions, receiving water limitations, and monitoring requirements contained in this Order and any additional requirements established in a Notice of Applicability (NOA) in a manner that protects the beneficial uses of the receiving waters.

1.2. Title 40 of the Code of Federal Regulations (40 CFR) section 122.28 provides for the issuance of general NPDES permits to regulate discharges of waste which results from similar operations, are the same type of waste, require the same effluent limitations, require similar monitoring, and are more appropriately regulated

under a general permit rather than individual NPDES permits. Projects that discharge or propose to discharge lanthanum-modified clay to surface waters within the San Diego Region to inactivate soluble reactive phosphorus: 1) result from similar operations (all involve discharge of lanthanum-modified clay to surface waters), 2) are the same type of waste (all are lanthanum-modified clay), 3) require similar effluent limitations for the protection of beneficial uses, 4) require the issuance of a permit in a short time period because most projects are short-term, 5) require similar monitoring, and 6) are more appropriately regulated under a general permit rather than an individual permit.

1.3. On December 12, 2012, the San Diego Water Board adopted Order No. R9-2012-0063, NPDES No. CAG999003, *General NPDES Permit for the Discharge of Lanthanum-Modified Clay to Surface Waters of the United States in the San Diego Region*.

1.4. The facilities regulated under this Order are considered to be "minor" facilities based on the United States Environmental Protection Agency's (U.S. EPA's) NPDES Permit Rating Work Sheet. According to this worksheet, any non-publicly owned treatment works (POTW) facility that scores less than 80 is considered minor unless otherwise rated major at the discretion of the regulatory agency.

1.5. The threat to water quality is considered a "Category 3" as defined in the California Code of Regulations (CCR) Title 23, Division 3, Chapter 9, Waste Discharge Reports and Requirements, Article 1, Fees, Section 2200 (a)(1): *Category "3" – 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.* The discharge of lanthanum-modified clay is not expected to cause permanent degradation of water quality. Any minor impairment of beneficial uses is expected to be temporal, lasting less than 48 hours following application.

1.6. The complexity is considered to be a "Category C" as also defined in the CCR – *Any discharger for which waste discharge requirements have been prescribed pursuant to Section 13263 of the Water code not included in Category A [toxics] or Category B [non-toxic but requiring treatment]. Included are dischargers having no waste treatment systems or that must comply with best management practices, dischargers having passive treatment and disposal systems, or dischargers having waste storage systems with land disposal.* The discharge of lanthanum-modified clay does not require a waste treatment system and must comply with best management practices, therefore its complexity is appropriately considered to be "Category C".

1.7. This Order requires the property owner to apply and obtain coverage through the Notice of Intent (NOI) process. On a case-by-case basis, the San Diego Water Board may require the joint submission of an NOI from both the owner or manager of the waterbody and the person/party conducting the application.

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and State of California (State) laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

1.8. To obtain coverage under this Order, the Discharger must submit a complete application that contains the NOI (included as Attachment B in this Order), payment of the annual fee, a Water Quality Management Plan (WQMP), and a technical report. The NOI must be completed in accordance with the instructions and signed to be valid. Signing the certification on the NOI signifies that the Discharger intends to comply with the terms and conditions of this Order. The NOI, fee, WQMP, technical report, and other attachments, must be submitted to the following address:

San Diego Water Board
2375 Northside Drive, Suite 100
San Diego, CA 92108

Attn: General Order for Lanthanum-Modified Clay
Source Control Regulation Unit
NOTICE OF INTENT

The San Diego Water Board has implemented an Electronic Content Management system to reduce our paper use. Please convert all submissions with attachments to a searchable Portable Document Format (PDF) and submit the documents on a digital data storage device, such as a compact disc or a USB flash drive. Alternatively, the Discharger may submit the NOI and associated attachments by email to SanDiego@waterboards.ca.gov.

1.9. In *Environmental Defense Center v. USEPA* (9th Cir. 2003) 344 F.3d 832, the Ninth Circuit Court of Appeals determined that applications for general permit coverage must be made available to the public, the applications must be reviewed and determined to meet the applicable standard by the permitting authority before coverage commences, and there must be a process to accommodate public hearings if the NOI is the "functional equivalent" of a permit. In this case, the NOI and WQMP include BMPs that serve as effluent limitations.

Therefore, the application package will be posted on the San Diego Water Board's website for a 30-day public comment period. The San Diego Water Board will review the application package for completeness and applicability to this Order. If no comments are received and the WQMP is complete, the Executive Officer will issue an NOA. Permit coverage will begin when the Discharger receives the NOA.

1.10. Dischargers enrolled under Order No. R9-2012-0063 (referred to in this Order as existing Dischargers) will continue coverage for one year following the date of adoption for this Order. After June 9, 2022, all Notices of Enrollment issued under Order No. R9-2012-0063 will be administratively terminated by the San Diego Water Board. Existing Dischargers shall submit a complete permit application to enroll in this Order by March 9, 2022.

1.11. Annual fees for permit coverage are required by Water Code §13260(d)(1)(A). The fee schedule is established by CCR section Title 23, Division 3, Chapter 9, Waste Discharge Reports and Requirements, Article 1, Fees, Section 2200.

1.12. The Discharger may choose to terminate coverage under this Order by submitting a complete and accurate Notice of Termination (NOT) in Attachment C of this Order. Regulations at 40 CFR section 124.5 provide that coverage under an Order may be terminated by the Discharger in accordance with applicable State and federal laws. The NOT must include the facts or reasons supporting the request. The San Diego Water Board will review the NOT and approve or deny the termination based upon the relevant facts. Coverage under the Permit will be terminated on the date of the San Diego Water Board's approval of the NOT.

1.13. Enrollment under this Order is not transferable. A new owner or operator must submit an application to enroll under this Order and obtain authorization from the San Diego Water Board before commencing application of lanthanum-modified clay.

1.14. Regulations at 40 CFR section 122.46 limit the duration of NPDES permits to a fixed term not to exceed five years. However, pursuant to CCR, title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending reissuance of the permit if the Discharger complies with all federal NPDES requirements for continuation of expired permits.

2. DISCHARGE DESCRIPTION

To accurately estimate the amount of lanthanum-modified clay needed, water and sediment samples are collected and analyzed for phosphorus. The application rate for lanthanum is calculated based on the amount of lanthanum that is chemically needed to bind the phosphorus in a waterbody. Typically, containers of lanthanum-modified clay are staged at a designated staging area on shore of the treated waterbody and loaded onto application boats. The lanthanum-modified clay is mixed into a slurry in a collection tank on each boat and broadcast evenly across the water's surface at a specific volume per acre. As the slurry settles through the water column, it binds and inactivates free reactive phosphorous. The bound phosphorus settles to the bottom as a stable insoluble mineral ($LaPO_4$). The unbound lanthanum also settles to the bottom potentially helping to prevent phosphorus loading from the sediment to the waterbody and binding any free reactive phosphorus that settles to the lake bottom. Alternatively, lanthanum-modified clay may be applied directly to the waterbody.

The typical application rate range is less than 150 parts per million (ppm or milligrams per liter or mg/L), with project specific dosing based on the amount of phosphorus targeted for inactivation. Once applied, the slurry gives the appearance of suspended sediment turbidity. The waterbody will have a cloudy or dull appearance for approximately 4-8 hours, and generally returns to normal water transparency in less than 24 hours.

Lanthanum is a naturally occurring earth element and measurable background concentrations are found in soils throughout the world including the U.S. (USGS,

1984). Lanthanum is generally found in soil in a stable form (bound to an anion) and not chemically available for uptake in the soil or release into the water column. Background levels of lanthanum (bound in forms with chlorides, carbonates, and phosphates) in water bodies sediments tested globally (U.S., Europe and Australia) have typically ranged from 12-36 mg/kg, with occasional extreme exceptional high and lows (Phoslock Water Solutions, 2011).

Once lanthanum has bound with the phosphate in the water column and any phosphate released from the sediments, it forms the insoluble mineral, rhabdophane ($LaPO_4$). The low solubility product of rhabdophane makes it unlikely under environmental conditions that either the phosphate or the lanthanum will be released over time back into the waterbody.

2.1. Summary of Eco-Toxicity Studies

A lanthanum bio-accumulation study compared fish and crayfish from two lakes in New Zealand, one to which lanthanum-modified clay had been applied in three successive years and one in which no application had taken place (Landman, 2007). The study reported no evidence of differences in physiological responses between the treated and untreated lakes.

Data were compiled from a range of sentinel water column invertebrates. Responses of these zooplankton species, including both mortality and reproduction, were evaluated throughout exposures. The data is shown in Table F-2 below.

Table F-2. Summary of Toxicity

Species	Endpoint	Duration (days)	Lowest Observable Effect Concentration (LOEC) (mg/L)	Water Type	Reference
Ceriodaphnia dubia	Mortality	2	>50	Field	Ecotox 2008
Ceriodaphnia dubia	Reproduction	7	>1	Field	Ecotox 2008
Ceriodaphnia dubia	Mortality	7	>1	Field	Ecotox 2008
Ceriodaphnia dubia	Mortality	2	>12,500	Lab	Stauber 2000
Daphnia magna	Mortality	2	>50,000	Lab	Martin and Hickey, 2004
Melanotaenia duboulayi	Mortality	4	>50,000	Lab	Ecotox 2008
Oncorhynchus mykiss	Mortality	4	>3,125	Lab	Martin and Hickey, 2004

Species	Endpoint	Duration (days)	Lowest Observable Effect Concentration (LOEC) (mg/L)	Water Type	Reference
Oncorhynchus mykiss	Mortality	2	>13,000	Field	Watson-Leung, 2008
Chironomus Zealandicus	Mortality, emergence, & sex ratio	38	>400	Field	Clearwater 2004
Chironomus dilutus	Mortality	10	>3,400	Field	Watson-Leung, 2009
Polypedilum parvidum	Mortality	10	>400	Field	Clearwater 2004
hyalella azteca	Survival and growth	14	>450	Field	Watson-Leung, 2009
Hexagenia sp.	Survival and growth	21	>450	Field	Watson-Leung, 2009
Macrobrachium sp. (shrimp)	Mortality	4	>50,000	Lab	Ecotox 2006b
Macrobrachium sp. (shrimp)	Mortality	7	800	Lab	Ecotox 2006b
Macrobrachium sp. (shrimp)	Mortality	14	800	Lab	Ecotox 2006b

Table Note: Because of the amount of lanthanum-modified clay needed to see impacts to biota, studies did not test concentrations high enough to result in observable results; thus, toxicity endpoints are reported as greater than the highest concentration tested and do not indicate the actual lowest observed effect levels.

2.2. Summary of Human Health Studies

2.2.1. **Direct Ingestion.** The U.S. Food and Drug Administration (FDA) has approved lanthanum by prescription for human use to regulate phosphorus absorption in human blood. The FDA-approved human dose rate for Fosrenol is 750 to 3,000 mg/day. Persy et al. (2006) reported no hepatotoxic effect in human patients undergoing long-term treatment with an FDA approved prescription drug containing lanthanum for phosphorus absorption in human blood.

2.2.2. **Fish Consumption.** The risk of consuming lanthanum in fish harvested from treated water after application was investigated after three successive applications in Lake Okareka, New Zealand (Landman et al., 2007). The highest concentration of lanthanum measured in the liver of male and female trout in

Lake Okareka after one and two months of application was 1.2 and 0.8 mg/kg, respectively. Similarly, the highest concentration of lanthanum in the hepatopancreas tissues of male and female trout was 0.8 and 1.0 mg/kg respectively (Landman et al., 2007). Therefore, in total, the highest concentration of lanthanum in one trout was 2.0 mg/kg. Based on this data, a person would need to consume 826 pounds of fish per day to ingest the minimum dose of lanthanum that corresponds to the lowest daily intake approved by the U.S. FDA.

2.2.3. **Drinking Water.** The phosphorus locking technology is National Sanitation Foundation/American National Standards Institute Standard 60 certified for use in drinking water. This certifies that lanthanum applications, at the maximum use rate specified on the label, does not contribute contaminants that could cause adverse human health effects.

2.2.4. **Hazardous Characteristics.** Lanthanum-modified clay is not considered hazardous by the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR section 1910.1200). Lanthanum and the clay used in the formulation are not listed on the U.S. EPA Toxic Substances Control Act inventory list. Lanthanum-modified clay has been used extensively on waterbodies in Australia and is not on the Australian National Occupational Health and Safety Commission (OHSC) List of Designated Hazardous Substances (NOHSC, 1999a). Permits for the application of lanthanum-modified clay have been adopted by the states of New York and Washington.

No risk has been associated with contact of lanthanum-modified clay. The main potential for human exposure is during the application process. Due to small particulates in the formulation, handlers and applicators could risk potential eye irritation and inhalation during application. The use of appropriate personal protective equipment (PPE) is recommended by the package label.

2.3. Summary of Existing Requirements

Dischargers currently regulated under Order No. R9-2012-0063 as well as any new Dischargers are expected to seek coverage under this Order.

2.3.1. Order No. R9-2012-0063 established discharge prohibitions, effluent limitations, best management practices, and receiving water limitations required for the application of lanthanum-modified clay to surface waters within the San Diego Region. NPDES regulations at 40 CFR section 122.44(k) allow for the use of best management practices (BMPs) to control or abate the discharge of pollutants under certain circumstances, including when numeric effluent limitations are infeasible. Proper implementation of BMPs will assure the protection of water quality within the receiving waters. Dischargers enrolled under this Order are expected to comply with all water quality objectives through the implementation of BMPs.

2.3.2. Order No. R9-2012-0063 contained the following discharge prohibitions:

2.3.2.1. The discharge of lanthanum-modified clay to waters of the State in a manner causing, or threatening to cause a condition of pollution, contamination or nuisance as defined in section 13050 of the Water Code is prohibited.

2.3.2.2. The discharge of lanthanum-modified clay at a location or in a manner different from that described in this Order is prohibited.

2.3.2.3. The discharge of lanthanum-modified clay shall not cause, have a reasonable potential to cause, or contribute to exceedances of any applicable standard or criterion promulgated by U.S. EPA pursuant to section 303 of the Clean Water Act (CWA), or water quality objectives adopted by the State or San Diego Water Board.

2.3.2.4. Compliance with Discharge Prohibitions contained in the *Water Quality Control Plan for the San Diego Basin* (Basin Plan) is required as a condition of this Order.

2.4. Planned Changes – Not Applicable

3. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the requirements and authorities described in this section.

3.1. Legal Authorities

This Order serves as waste discharge requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the CWA and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit authorizing the Discharger to discharge into waters of the United States at the discharge location described in Table 1 subject to the WDRs in this Order.

3.2. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from CEQA, (commencing with section 21100) of Division 13 of the Public Resources Code.

3.3. State and Federal Laws, Regulations, Policies, and Plans

3.3.1. **Water Quality Control Plan.** The San Diego Water Board adopted the *Water Quality Control Plan for the San Diego Basi*n (hereinafter Basin Plan) on September 8, 1994, (with amendments on or before December 8, 2020) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. In addition, the Basin Plan implements California State Water Resources Control Board (State Water Board) Resolution 88-63, which established State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to surface waters within the San Diego Region include the following:

Municipal and domestic supply (MUN), agricultural supply (AGR), industrial service supply (IND), industrial process supply (PROC), ground water recharge (GWR), hydropower generation (POW), contact water recreation (REC1),

noncontact water recreation (REC2), commercial and sport fishing (COMM), biological habitats of special significance (BIOL), warm freshwater habitat (WARM), cold freshwater habitat (COLD), wildlife habitat (WILD), estuarine habitats (EST), preservation of rare, threatened or endangered species (RARE), marine habitat (MAR), aquaculture (AQUA), migration of aquatic organisms (MIGR), spawning (SPWN), and shellfish harvesting (SHELL).

3.3.2. **ISWEBE Plan.** On August 7, 2018, the State Water Board adopted *Part 3 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Bacteria Provisions* (ISWEBE Plan), which became effective on February 4, 2019. The ISWEBE Plan supersedes any numeric water quality objective for bacteria for the REC-1 beneficial use contained in Basin Plans and establishes new numeric bacteria objective and related implementation provisions. Requirements of this Order implement the bacteria objectives in ISWEBE Plan.

3.3.3. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** U.S. EPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the State. The CTR was amended on February 13, 2001. These rules contain federal water quality criteria for priority pollutants.

3.3.4. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria promulgated for California by the U.S. EPA through the NTR and to the priority pollutant objectives established by the San Diego Water Board in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the U.S. EPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

3.3.5. **Domestic Water Quality.** In compliance with Water Code section 106.3, it is the policy of the State that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet maximum contaminant levels implemented by the Basin Plan that are designed to protect human health and ensure that water is safe for domestic use

3.3.6. **Antidegradation Policy.** Federal regulation 40 CFR section 131.12 requires that the State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16 (*Statement of Policy with Respect to Maintaining High Quality of Waters in California*).

Resolution 68-16 is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The San Diego Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 CFR section 131.12 and State Water Board Resolution 68-16.

3.3.7. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 CFR section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.

3.3.8. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State, including protecting rare, threatened, or endangered species. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

3.4. Impaired Water Bodies on the CWA section 303(d) List

The CWA requires states to identify and make a list of surface water bodies that are polluted. These water bodies, referred to in law as "water quality limited segments," do not meet water quality standards even after discharges of wastes from point sources have been treated by the minimum required levels of pollution control technology. Wastewater treatment plants, a city's storm drain system, or a boat yard, are a few examples of point sources that discharge wastes to surface waters. States are required to compile the water bodies into a list, referred to as the *Clean Water Act Section 303(d) List of Water Quality Limited Segments* (CWA section 303(d) List). States must also prioritize the water bodies on the list and develop action plans, called total maximum daily loads (TMDLs) to improve the water quality.

On October 3, 2017, the State Water Board adopted Resolution No. 2017-0059, *Approving the Clean Water Act section 303(d) List for the Los Angeles Region and the Clean Water Act section 303(d) List Portion of the Proposed 2014 and 2016 California Integrated Report*. In April 2018, U.S. EPA approved the list of impaired water bodies, prepared by the State Water Board pursuant to CWA section 303(d), which are not expected to meet applicable water quality standards after implementation of technology-based effluent.

An updated list of impaired waterbodies is available on the San Diego Water Board 303(d) List website

(https://www.waterboards.ca.gov/sandiego/water_issues/programs/303d_list/index.shtml).

3.5. Other Plans, Polices and Regulations – Not Applicable

4. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the U.S. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in the CFR: 40 CFR section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR section 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water.

4.1. Discharge Prohibitions

The discharge prohibitions as specified in section 4 of this Order are standard prohibitions found in other San Diego Water Board permits and are based on the Water Code, the CWA, and the Basin Plan.

4.2. Effluent Limitations and Discharge Specifications

4.2.1. This Order authorizes the discharge of lanthanum-modified clay to receiving waters. The primary mechanisms for regulating such discharges are through the development of a WQMP that specifies the BMPs for the approved project, as required by section 5 of this Order.

NPDES regulations (40 CFR section 122.44(k)) allows for the use of BMPs to control or abate the discharge of pollutants under certain circumstances, including when numeric effluent limitations are infeasible. Proper implementation of BMPs will assure the protection of water quality within the receiving waters. Dischargers enrolled under this Order are expected to comply with all water quality objectives through the implementation of BMPs.

NPDES regulations (40 CFR section 122.44(k)(3) and (4)) provide that BMPs shall be included as permit conditions when numeric effluent limitations are infeasible, or the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. Numeric effluent limitations are infeasible for the following reasons:

- Lanthanum-modified clay is designed for direct application to waterbodies to remedy a known water quality concern of elevated phosphorus. The lanthanum-modified clay would be considered to be the effluent that is being discharged to the receiving water.
- No known water quality criterion has been promulgated for lanthanum or its byproducts.
- Treatment of the product would render the application of lanthanum-modified clay useless for binding phosphorus.

For these reasons, this Order does not contain numerical effluent limitations. Instead, this Order requires the development of a WQMP that identifies the specific BMPs to be implemented by a project subject to this Order.

4.2.2. The BMPs required herein constitute best available technology economically achievable and best conventional pollutant control technology and must be implemented to minimize the area and duration of impacts caused by the discharge of lanthanum-modified clay in the treatment area and to allow for restoration of water quality and protection of beneficial uses of the receiving waters to pre-application quality following completion of an application event. The development of BMPs provides the flexibility necessary to establish controls to minimize the area extent and duration of impacts caused by the discharge of lanthanum-modified clay. This flexibility allows dischargers to implement appropriate BMPs for different types of applications and different types of waterbodies.

4.2.3. This Order requires that Dischargers use BMPs to mitigate effects to water quality resulting from lanthanum-modified clay applications. Dischargers are required to consider source control measures to prevent future inputs of nutrients to the treated waterbody. Source control prevention BMPs is the preferred method to control elevated levels of phosphorus in surface waters. Lanthanum-modified clay should only be used as a last resort when source control BMPs have failed to adequately protect the receiving water in a reasonable timeframe.

4.3. Final Effluent Limitation Considerations

4.3.1. Anti-Backsliding Requirements

Sections 402(o) and 303(d)(4) of the CWA and federal regulations at 40 CFR section 122.44(l) prohibit backsliding in NPDES permits. These Anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order.

4.3.2. Antidegradation Policies

Section 131.12 of 40 CFR requires that State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16. Resolution 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing high-water quality be maintained unless degradation is justified based on specific findings. The State Water Board and San Diego Water Board's Water Quality Control Plans implement, and incorporate by reference, both the State and federal antidegradation policies. The permitted discharges must be consistent with the antidegradation provision of section 131.12 and State Water Board Resolution 68-16.

Given the nature of a general permit and the broad range of beneficial uses to be protected across the Region, it is not feasible to analyze each surface waterbody

in the Region to determine which water bodies are of high quality for the constituents in the discharges authorized by this Order. The San Diego Water Board finds that, due in part to the oftentimes intermittent and temporary characteristics of these discharges, the impact on existing surface water quality from these discharges will be insignificant. While high-quality surface waters may be temporarily degraded, any such impacts to surface water quality that may occur are consistent with the maximum social and economic benefit of the people of the State, provided that the discharges comply with this Order. The discharges are a necessary consequence of providing an affordable and practical means for managing phosphorus loading in surface waters for the people of the State. The treatment and BMP standards required under this Order constitute best practical treatment and control of these discharges. Therefore, the discharges under this Order are consistent with the antidegradation provision of 40 CFR section 131.12 and the State Water Board Resolution 68-16.

4.3.3. **Stringency of Requirements for Individual Pollutants**

This Order requires the Discharger to develop and implement BMPs to regulate and control the discharge of waste. The requirements established by this Order are no more stringent than necessary to implement the mandates of the CWA.

4.4. Interim Effluent Limitations – Not Applicable

4.5. Land Discharge Specifications – Not Applicable

4.6. Recycling Specifications – Not Applicable

4.7. Best Management Practices

This Order requires the development of a WQMP that identifies the specific BMPs to be implemented by a project subject to this Order. The WQMP must describe the unique characteristics of the waterbody and its upstream and downstream watershed. This information is necessary to properly understand the beneficial uses that may be impacted. Also, this information provides surface area, volume, historic monitoring, inflowing streams, and outflowing streams that are necessary to calculate the appropriate application rate of lanthanum-modified clay for binding phosphorus but not leaving excessive residual.

The WQMP must describe the time period for application. This information is needed to ensure that the application does not occur in times of heavy recreational use as a precaution to limit public exposure or during storm events causing excessive product to flow downstream or causing volume fluctuations in the receiving waterbody that would require altering the application rate.

The WQMP must describe the application rate for lanthanum-modified clay. This information is needed to ensure that the application rate does not exceed what is stoichiometrically necessary to bind the free phosphorus in the waterbody; otherwise, the application may result in residual lanthanum in the waterbody above background concentrations.

The WQMP must describe the BMPs necessary to prevent discharges to downstream waterbodies. The transport of lanthanum-modified clay or the bound

lanthanum phosphate to downstream waters may have unknown and unintended consequences that should be prevented as a precautionary measure. Timing is the best method to prevent downstream discharges. The application should be timed during a period when the intended waterbody is not discharging to downstream waters and during a period when rainstorms are unlikely. When that is infeasible, other methods to prevent downstream discharge must be deployed such as silt curtains or berms. This Order does not replace or excuse any CWA section 404 and section 401 requirements for dredge and fill of U.S. waters.

The WQMP must include a monitoring plan in compliance with Attachment E of this Order. This monitoring will provide the Discharger with information about the effectiveness of the application and the overall effectiveness of the BMPs so that the Discharger can adapt and modify practices as warranted to protect water quality.

The WQMP must describe “good-housekeeping” measures to prevent spills, leaks, and unintended discharges. Spills, leaks, and unintended discharges may result in an uneven application of lanthanum-modified clay to the waterbody which may result in temporal and spatial differences in lanthanum concentration throughout the waterbody that are above background levels. Spill and leaks of product in staging areas could also result in unintended discharges during rain events.

The WQMP must describe the personnel training necessary to ensure the proper application of lanthanum-modified clay and the BMPs required by the WQMP. Training is especially important for the site personnel who are responsible for the application of lanthanum-modified clay and the BMPs to protect water quality.

The WQMP must describe measures to take in the event of an exceedance of receiving water limitations, including notifications to the San Diego Water Board and ceasing the application of lanthanum-modified clay to the receiving waterbody.

The WQMP must describe the source control measures that will be taken to prevent future inputs of nutrients to the treated waterbody. Pollution prevention and source controls are the preferred method of preventing phosphorus exceedances in surface waterbodies from recurring over treatment controls. Pollution prevention is an essential aspect of BMP implementation. By limiting the generation of phosphorus from activities within the watershed, less phosphorus is available to be washed into the receiving waterbody. In addition, there is no need to control or treat phosphorus that is not generated. In general, source control is more efficient, effective, and feasible than eventual treatment of the waterbody.

5. RATIONALE FOR RECEIVING WATER LIMITATIONS

5.1. Surface Water

CWA section 303(a-c), requires states to adopt water quality standards, including criteria necessary to protect beneficial uses. The San Diego Water Board adopted water quality criteria as water quality objectives in the Basin Plan. The Basin Plan includes numeric and narrative water quality objectives for various beneficial uses and water bodies. This Order requires compliance with the Basin Plan’s beneficial uses, water quality objectives, and implementation plans. This Order also requires

compliance with the State Implementation Plan.

Basin Plan water quality objectives to protect the beneficial uses of surface water include numeric objectives and narrative objectives, including objectives for chemical constituents, toxicity, and tastes and odors. The toxicity objective requires that surface water and groundwater be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective requires that surface water and groundwater shall not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the maximum contaminate levels set forth in CCR Title 22. The tastes and odors objective states that surface water and groundwater shall not contain taste or odor producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, toxic substances, radionuclides, or taste and odor producing substances in concentrations that adversely affect domestic drinking water supply, agricultural supply, or any other beneficial use.

Once lanthanum-modified clay has been applied to a treatment area, the product binds with free phosphorus in the water within the treatment area. The discharge of lanthanum-modified clay, their residues, and their degradation byproducts from the applications to surface water must meet applicable water quality criteria and objectives. The receiving water limitations ensure that following application, the receiving water does not result in an exceedance of a water quality standard.

This Order requires compliance with all beneficial uses, water quality objectives, and implementation plans in the San Diego Water Board's Basin Plan. Compliance with the receiving water limitations will be determined by assessment of the results of the monitoring conducted in accordance with Attachment E of this Order.

5.2. Groundwater – Not Applicable

6. RATIONALE FOR PROVISIONS

6.1. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR section 122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

Sections 122.41(a)(1) and (b) through (n) of 40 CFR establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) of 40 CFR allows the State to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR sections

122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

6.2. Special Provisions

6.2.1. **Reopener Provisions**

This Order or an NOA issued pursuant to this Order may be reopened for modification and reissuance in accordance with the provisions contained in 40 CFR section 122.62 and/or for the following reasons:

- Violation of any terms or conditions of this Order or the NOA from the San Diego Water Board;
- Obtaining enrollment under this Order, or an NOA from the San Diego Water Board, by misrepresentation or failure to disclose fully all relevant facts;
- A change in any condition that requires either a temporary or permanent reduction or elimination of the discharge subject to WDRs;
- Promulgation of new or amended regulations by the State Water Board, San Diego Water Board or U.S. EPA, including revisions to the Basin Plan;
- Modification is warranted to address toxicity in discharges or receiving waters through new effluent limitations or other permit toxicity requirements or to implement new, revised, or newly interpreted water quality standards applicable to toxicity;
- Receipt of U.S. EPA guidance concerning regulated activities, judicial decision, or in accordance with the provisions of 40 CFR parts 122, 123, 124, and 125;
- Determination that continued discharges may cause unreasonable degradation of the aquatic environment; and
- Addition of additional or new active ingredients for phosphorus mitigation.

The filing of a request by the Discharger for modification, revocation and reissuance, or termination of this Order or an associated NOA from the San Diego Water Board, or a notification of planned change in or anticipated noncompliance with this Order or NOA does not stay any condition of this Order or the NOA from the San Diego Water Board.

6.2.2. **Special Studies and Additional Monitoring Requirements – Not Applicable**

6.2.3. **Construction, Operation, and Maintenance Specifications – Not Applicable**

6.2.4. **Special Provisions for Publicly-Owned Treatment Works (POTWs) - – Not Applicable**

6.2.5. **Other Special Provisions – Not Applicable**

6.2.6. **Compliance Schedules – Not Applicable**

7. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 CFR sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code section 13383 also authorizes the San Diego Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring, reporting, and recordkeeping requirements that implement federal and State requirements.

7.1. Influent Monitoring – Not Applicable

7.2. Effluent Monitoring – Not Applicable

7.3. Whole Effluent Toxicity Testing Requirements – Not Applicable

7.4. Receiving Water Monitoring

7.4.1. Surface Water

Receiving water monitoring is necessary to answer two critical questions:

1) Does the discharge of lanthanum-modified clay cause or contribute to an exceedance of receiving water limitations?

2) Does the discharge of lanthanum-modified clay cause or contribute to an exceedance of the “no toxics in toxic amounts” narrative toxicity objective?

Data collected from monitoring can be assessed to determine the effectiveness of programs and practices used during the application. All forms of testing have some degree of uncertainty associated with them. The more limited the amount of test data available, the larger the uncertainty. The intent of this Order’s monitoring program is to detect most events of noncompliance without requiring needless or burdensome monitoring.

Extensive monitoring on the effects of lanthanum-modified clay on water quality has been done in Australia, Europe, and other states within the U.S. This monitoring has been summarized above in section 2 of the Fact Sheet. The monitoring required by this Order builds on and replicates the monitoring that has been done previously.

The Discharger is required to develop a site-specific monitoring program in the WQMP, describing the tasks and time schedules in which these two key questions will be addressed. Monitoring shall take place at several locations surrounding and within the receiving waterbody, including upstream and downstream monitoring.

The monitoring program described in the WQMP must consider watershed-specific attributes and waste constituents, based on the characteristics of waterbodies upstream and downstream of the application area, as well as the receiving water quality conditions. The receiving waterbody could have constant water flow into the receiving water from urban runoff or natural sources. Also, the receiving waterbody may be impounded without downstream discharge or may

be flowing to downstream receiving waters. Developing the details of a monitoring design requires clearly defining the design and then organizing these in a logical framework that supports effective decision making about indicators, monitoring locations, and monitoring frequency. The logical framework must describe:

- The basic geographic and hydrographic features of the area, particularly application points and the pathways(s) of residue flows;
- Lanthanum-modified clay application practices and how they are distributed in space and time;
- Relevant knowledge about the transport, fates, and effects of lanthanum-modified clay, including best- and worst-case scenarios;
- A description of the designated beneficial uses in each waterbody;
- Relevant knowledge about the action of cumulative and indirect effects;
- Mechanisms through which lanthanum-modified clay applications could lead to designated use impacts, given the basic features of the area;
- Known and potential impacts of lanthanum-modified clay applications on water quality, ranked in terms of relative risk, based on factors such as magnitude, frequency and duration;
- A sufficient number of sampling areas to assess the entire area of influence from the application; and
- A description of sampling methods and a sampling schedule.
- The monitoring requirements have been designed for freshwater inland surface waters.

The visual, physical, and chemical constituents/parameters have been carefully chosen as those most likely to be found following application of the lanthanum-modified clay and resulting in an exceedance of an applicable receiving water limitation. Lanthanum and phosphorus are both sampled in the water column and in the sediment because as lanthanum binds with the free phosphorus, it precipitates out and settles in the bottom sediments. Turbidity is sampled because the clay slurry application of lanthanum to the receiving water will cause a temporary slight increase in the turbidity of the receiving water. Bench scale lab tests have shown the turbidity to spike up to 30 nephelometric turbidity units following application of lanthanum-modified clay and turbidity returning to background levels within 24 hours.

This Order adds a requirement for the Discharger conduct visual observations for harmful algal blooms (HABs) using the Surface Water Ambient Monitoring Program's (SWAMP's) *Visual Guide to Observing Blooms*. If a HAB is observed, the Discharger is required to report the HAB to the State Water Board within 24 hours using the *California Freshwater and Estuarine Harmful Algal Bloom Report Form*.

The monitoring frequency must include pre-event, during the event, and post-event monitoring at several locations upstream, within the application area of the receiving waterbody, and downstream. Pre-event sampling provides relevant background monitoring information for comparison and determining appropriate application rates. During and post-event monitoring provides data for compliance purposes and evaluating the two key questions above.

7.4.2. **Bioassessment Monitoring**

The San Diego Water Board reserves the discretion through the NOA to require bioassessment monitoring for the application of lanthanum-modified clay. Bioassessment monitoring is a cost-effective tool that measures the effects of water quality over time. It is an important direct indicator of stream health and impacts from discharges. It can detect impacts that chemical and toxicity monitoring cannot. U.S. EPA encourages permitting authorities to consider requiring biological monitoring methods to fully characterize the nature and extent of impacts from discharges.

Bioassessment is the direct measurement of the biological condition, physical condition, and attainment of beneficial uses of receiving waters (typically using benthic macroinvertebrates, periphyton, and fish). Bioassessment monitoring integrates the effects of both water chemistry and physical habitat impacts (e.g., sedimentation or erosion) of various discharges on the biological community native to the receiving waters. Moreover, bioassessment is a direct measurement of the impact of cumulative, sub-lethal doses of pollutants that may be below reasonable water chemistry detection limits, but that still have biological effects.

The bioassessment monitoring as described by this Order is consistent with the State's Surface Water Ambient Monitoring Program. The data from this monitoring can be used to assess permit compliance. In addition, other entities such as local municipalities or non-governmental organizations may use the data to improve their practices and programs for protecting water quality.

7.4.3. **Groundwater – Not Applicable**

7.5. Other Monitoring Requirements

7.5.1. **Water Quality Management Log**

This Order requires the Discharger to maintain an information log on the application of lanthanum-modified clay. The log provides information helpful to the discharger in ensuring and maintaining compliance. The log can be used to review procedures and make changes to improve BMP implementation and performance.

7.6. Costs

The San Diego Water Board has considered costs in establishing monitoring and reporting requirements although Water Code section 13383 does not require the board to do so. For the reasons described in sections 7.1 - 7.5, the costs to comply with the monitoring and reporting requirements will result only in appropriate data needed to evaluate water quality and other impacts of the discharges and ensure

that beneficial uses are protected. In reissuing this order, the San Diego Water Board has reviewed the need for the monitoring and reporting, ensured that sampling frequency is appropriate, and has not required unnecessary reports or imposed overlapping requirements. The requirement that Dischargers submit a WQMP and proposed monitoring plan allows Dischargers the opportunity to design monitoring and reporting programs that may be accomplished with less expense.

8. PUBLIC PARTICIPATION

The San Diego Water Board considered the issuance of WDRs that will serve as a general NPDES permit for the discharge of lanthanum-modified clay to surface waters in the San Diego Region. As a step in the WDR adoption process, the San Diego Water Board staff developed tentative WDRs and encouraged public participation in the WDR adoption process.

8.1. Notification of Interested Parties

The San Diego Water Board notified Dischargers enrolled under Order No. R9-2012-0063, interested agencies, and persons of its intent to prescribe WDRs for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided on March 19, 2021, by email to the interested parties and the NPDES email subscription list. Notification was also posted on the San Diego Water Board's website.

The public had access to the agenda and any changes in dates and locations through the San Diego Water Board's website (https://www.waterboards.ca.gov/sandiego/)

8.2. Written Comments

Interested persons were invited to submit written comments concerning tentative WDRs as provided through the notification process. Comments were due either in person or by mail to the San Diego Water Board's office located at 2375 Northside Drive, Suite 100, San Diego, CA 92108.

To be fully responded to by staff and considered by the San Diego Water Board, the written comments were due at the San Diego Water Board office by 5:00 p.m. on April 18, 2021.

8.3. Public Hearing

The San Diego Water Board held a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date:	June 9, 2021
Time:	9:00 AM
Location:	Online video and teleconference webcast San Diego, CA

Interested persons were invited to attend. At the public hearing, the San Diego Water Board heard testimony pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested in writing.

8.4. Reconsideration of Waste Discharge Requirements

Any person aggrieved by this action of the San Diego Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and CCR, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., within 30 calendar days of the date of adoption of this Order at one of the following addresses, except that if the thirtieth day following the date of this Order 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. Petitions may be sent in as follows:

By mail:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

In Person:

State Water Resources Control Board
Office of Chief Counsel
1001 I Street
Sacramento, California 95814

By email: waterqualitypetitions@waterboards.ca.gov

By fax: (916) 341-5199

For instructions on how to file a water quality petition for review, see the State Water Board's Water Quality Petitions website (https://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml)

8.5. Information and Copying

Report of Waste Discharge (ROWDs), NOIs, monitoring reports, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the San Diego Water Board by calling (619) 516-1990 or by emailing rb9_records@waterboards.ca.gov.

8.6. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the San Diego Water Board, reference this Order, and provide a name, address, and phone number.

8.7. Additional Information

Requests for additional information or questions regarding this Order should be directed to Keith Yaeger at (619) 521-5899 or Keith.Yaeger@waterboards.ca.gov.

9. REFERENCES

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ATTACHMENT G – BASIN PLAN DISCHARGE PROHIBITIONS

1. Basin Plan Discharge Prohibitions

1.1. The discharge of waste to waters of the State in a manner causing, or threatening to cause a condition of pollution, contamination or nuisance as defined in Water Code section 13050, is prohibited.

1.2. The discharge of waste to land, except as authorized by Waste Discharge Requirements (WDRs) of the terms described in Water Code section 13264 is prohibited.

1.3. The discharge of pollutants or dredged or fill material to waters of the United States except as authorized by a National Pollutant Discharge Elimination System (NPDES) permit or a dredged or fill material permit (subject to the exemption described in Water Code section 13376) is prohibited.

1.4. Discharges of recycled water to lakes or reservoirs used for municipal water supply or to inland surface water tributaries thereto are prohibited, unless this San Diego Water Board issues an NPDES permit authorizing such a discharge; the proposed discharge has been approved by the State Water Board Division of Drinking Water (DDW); and the operating agency of the impacted reservoir; and the Discharger has an approved fail-safe long-term disposal alternative.

1.5. The discharge of waste to inland surface waters, except in cases where the quality of the discharge complies with applicable receiving water quality objectives, is prohibited. Allowances for dilution may be made at the discretion of the San Diego Water Board. Consideration would include streamflow data, the degree of treatment provided and safety measures to ensure reliability of facility performance. As an example, discharge of secondary effluent would probably be permitted if streamflow provided 100:1 dilution capability.

1.6. The discharge of waste in a manner causing flow, ponding, or surfacing on lands not owned or under the control of the discharger is prohibited, unless the discharge is authorized by the San Diego Water Board.

1.7. The dumping, deposition, or discharge of waste directly into waters of the State, or adjacent to such waters in any manner which may permit its being transported into the waters, is prohibited unless authorized by the San Diego Water Board.

1.8. Any discharge to a storm water conveyance system that is not composed entirely of storm water is prohibited unless authorized by the San Diego Water Board. [The federal regulations, 40 CFR 122.26(b)(13), define storm water as storm water runoff, snow melt runoff, and surface runoff and drainage. 40 CFR 122.26(b)(2) defines an illicit discharge as any discharge to a storm water conveyance system that is not composed entirely of storm water except discharges pursuant to an NPDES permit and discharges resulting from firefighting activities.] [Section 122.26 amended at 56 FR 56553, November 5, 1991; 57 FR 11412, April 2, 1992].

1.9. The unauthorized discharge of treated or untreated sewage to waters of the State or to a storm water conveyance system is prohibited.

1.10. The discharge of industrial wastes to conventional septic tank/ subsurface disposal systems, except as authorized by the terms described in Water Code section 13264, is prohibited.

1.11. The discharge of radioactive wastes amenable to alternative methods of disposal into the waters of the State is prohibited.

1.12. The discharge of any radiological, chemical, or biological warfare agent into waters of the State is prohibited.

1.13. The discharge of waste into a natural or excavated site below historic water levels is prohibited unless the discharge is authorized by the San Diego Water Board.

1.14. The discharge of sand, silt, clay, or other earthen materials from any activity, including land grading and construction, in quantities which cause deleterious bottom deposits, turbidity or discoloration in waters of the State or which unreasonably affect, or threaten to affect, beneficial uses of such waters is prohibited.