

**STATE OF CALIFORNIA  
REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL COAST REGION**

**STAFF REPORT FOR REGULAR MEETING OF SEPTEMBER 25-26, 2014**  
Prepared on August 19, 2014

**ITEM NUMBER: 10**

**SUBJECT: Revision of Waste Discharge Requirements, Reissuance of National Pollutant Discharge Elimination System Permit No. CA0049224 for the City of San Luis Obispo Water Resource Recovery Facility, San Luis Obispo County, Order No. R3-2014-0033**

**STAFF CONTACT: Katie DiSimone 805/542-4638 or [katie.disimone@waterboards.ca.gov](mailto:katie.disimone@waterboards.ca.gov)**

**KEY INFORMATION**

Location: 35 Prado Road, San Luis Obispo  
Type of Discharge: Tertiary-treated domestic wastewater  
Permitted Flow: 5.1 million gallons per day (mgd; dry weather flow design capacity)  
Average Annual Flow: 4.5 MGD  
Type of Treatment: Activated sludge, tertiary filtration, and chlorination  
Disposal Method: Inland surface water discharge to San Luis Obispo Creek  
Existing Orders: Modified NPDES Order No. R3-2002-0043  
Reclamation: Irrigation and approved uses within City of San Luis Obispo

**This Action: Adopt Order No. R3-2014-0033**

**DISCUSSION**

The City of San Luis Obispo (Discharger) owns and operates a wastewater collection, treatment, and disposal system for the City of San Luis Obispo, California Polytechnic State University, and the San Luis Obispo Airport, including a population of approximately 40,000 individuals. The Water Resource Recovery Facility (Facility) design daily average flow capacity is 5.1 million gallons per day (MGD). The treatment system consists of mechanical screening, grit removal, primary settling, biofiltration, secondary settling, nitrification, final settling, cooling using evaporative cooling towers, dual media filtration, and chlorination/dechlorination. The tertiary treated effluent is currently discharged to San Luis Obispo Creek, although a portion of the effluent is diverted to a recycled water distribution system for reuse within the City of San Luis Obispo. As a condition of the recycled water project, the National Marine Fisheries Service required a minimum continuous effluent discharge of 2.5 cubic feet per second (approximately 1.6 MGD) to the creek to support aquatic habitat.

Solids are thickened in a dissolved air flotation thickener and stabilized in anaerobic digesters. During the drier parts of the year the sludge is placed in drying beds, dried and stockpiled to await disposal. A belt press is used for the remainder of the year. Biosolids are hauled off-site by a contractor for composting. Finished compost is sold to agricultural, horticultural and/or landscape operations.

California Polytechnic State University and the San Luis Obispo County Airport retain ownership and direct responsibility for wastewater collection and transport systems up to the point of discharge into the wastewater treatment plant and/or interceptors owned and operated by the Discharger. Their sewer collection facilities are regulated by the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003.

The reissuance of the existing permit has extended beyond the typical five-year period due to issues surrounding effluent limitations related to trihalomethanes (THMs) and nitrogen and the Discharger's previous interest in pursuing de-designation of San Luis Obispo Creek as a potential source of municipal drinking water supply. Below is a brief discussion of how those issues are addressed in the proposed permit.

### **Trihalomethanes**

The Discharger is currently discharging pursuant to Modified Order No. R3-2002-0043, National Pollutant Discharge Elimination System (NPDES) Permit No. CA0049224. In March 2005, the original 2002 order was reopened and modified to include interim effluent limitations and a compliance schedule for selenium, cyanide, bromoform, dichlorobromomethane, and chlorodibromomethane based on the State Water Resources Control Board's *Policy for the Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP). The 2005 modified permit required immediate compliance with selenium, cyanide, and bromoform effluent limitations.

Immediate compliance for dichlorobromomethane and chlorodibromomethane (THMs) final effluent limitations would not be possible without first upgrading the Facility, as the THMs are by-products of the Discharger's chlorine disinfection system. Therefore, the Water Board adopted interim effluent limitations and set a five-year compliance date of March 1, 2010, to meet final THM effluent limitations. However, since the compliance date was beyond the end of the R3-2002-0043 permit expiration date (May 31, 2007), the final compliance dates beyond 2007 were not enforceable requirements. Water Board staff expected to adopt final effluent limitations and an enforceable compliance schedule extending beyond 2007 when the permit was next renewed.

After these permit modifications and interim limitations were adopted, the Discharger evaluated strategies to address effluent limitations for THMs. Strategies explored included de-designation of the municipal water supply (MUN) beneficial use for San Luis Obispo Creek, development of site-specific objectives, and upgrading the existing Facility. In 2010, the Water Board adopted Time Schedule Order (TSO) No. R3-2010-0013. The TSO established an enforceable date for "full compliance with the chlorodibromomethane and dichlorobromomethane effluent limitation in NPDES Order No. R3-2010-0013 by March 31, 2015," and slightly revised the interim effluent limitations.

In December 2012, the Discharger decided to follow the Water Board's recommendation to move forward with Facility upgrades to meet MUN-based final effluent limitations rather than pursue de-designation or site-specific objectives. The Discharger has been working on facility designs, treatment options, and public participation efforts since that time.

The proposed permit R3-2014-0033 establishes final effluent limitations for THMs consistent with the SIP. Section 2.1 of the SIP states that unless an exception has been granted, compliance schedules within an NPDES permit may not exceed a full compliance date of May 22, 2010, for CTR criteria-based effluent limitations. Therefore, the proposed permit does not contain a compliance schedule or interim limitations.

**Nitrogen**

San Luis Obispo Creek is included on the 303(d) list as impaired for nutrients. Water Board Resolution R3-2005-0106 establishes a Total Maximum Daily Load (TMDL) for nitrate discharges to San Luis Obispo Creek. The TMDL specifies that the Water Board will incorporate an average monthly nitrate effluent limitation of 10 mg/L (as N). A nitrate effluent limitation was not a part of the March 2005 NPDES permit modification because the TMDL was not adopted until several months after, in September 2005.

**Compliance**

Due to the scope of the needed upgrades to address both THMs and nitrate, the Discharger will likely be completing these upgrades as part of a single, larger construction project and immediate compliance with final effluent limitations is not feasible. The previous TSO No. R3-2010-0013 was adopted to compel the Discharger's compliance with the existing NPDES permit (modified Order No. R3-2002-0043). Adoption of the proposed NPDES permit (Order No. R3-2014-0033) will rescind the existing permit, therefore a new TSO is needed to establish interim effluent limitations and an enforceable compliance schedule. Therefore, the Water Board's Executive Officer will be issuing Time Schedule Order (TSO) No. R3-2014-0036 to establish interim effluent limits and an enforceable compliance schedule for meeting final effluent limits. The compliance activities are expected to be retained from the previous TSO; however, the compliance dates will be extended and a new interim effluent limitation for nitrate will be included.

**CHANGES FROM THE EXISTING ORDER**

The proposed Order is structured in accordance with the statewide NPDES permit template. The proposed Order is consistent with the previous Order with the exception of the following changes/modifications, which are also discussed in detail in the proposed permit fact sheet:

**Substantive changes**

- Removed effluent limitations for constituents listed in Order R3-2002-0043 (modified 2005) Sections C.3 and C.4. These limitations were removed based on the RPA and current discharge monitoring data. This change is discussed in the proposed permit fact sheet Section IV.D.1 (pages F-24 and F-25).
- Added effluent limitations for N-nitrosdimethylamine and nitrate. These limitations were added based on the RPA and TMDL and are discussed in the proposed permit fact sheet Section IV.C.3 (page F-18 and F-19). Interim limits for nitrate are expected to be established with the upcoming TSO No. R3-2014-0036, as described above.
- Added final effluent limitations for chlorodibromomethane and dichlorobromomethane. These limitations were added based on the RPA and this change is discussed in the proposed permit fact sheet Section IV.C.3 (page F-18). ). Interim limits for these constituents are expected to be established with the upcoming TSO No. R3-2014-0036, as described above.
- Whole effluent toxicity has been addressed through the establishment of a toxicity trigger, consistent with State Board guidance, while revision of the SIP is underway.

This change is discussed in the proposed permit fact sheet Section IV.C.5 (pages F-20 and F-21).

- Added a requirement for an Effluent pH Evaluation to assess effluent pH impacts on receiving water quality to consider whether a more stringent pH effluent limit would be more protective of receiving water quality objectives or if existing pH effluent limits are adequately protective. This addition is discussed in the proposed permit fact sheet in Section IV.C.6.d (page F-23).
- Added a requirement for a Facilities Evaluation due to the Facility's influent flow being within 88% of its design capacity. This requirement is consistent with the Standard Provisions Section II.D.4 (page D-12), although the evaluation will be completed as part of the planned Facility upgrades to meet THM and nitrate effluent limitations and a deadline will be included in the upcoming TSO R3-2014-0036 discussed above.
- Notable changes to effluent monitoring were made based on RPA and previous effluent monitoring data as follows (and discussed in the fact sheet, Attachment F):
  - Pentachlorophenol and N-Nitrosodimethylamine changed from annual to quarterly monitoring.
  - Molybdenum has been added as quarterly monitoring, as no previous data was available for the RPA.
  - Selenium, cyanide, and bromoform are changed from monthly to annual monitoring.

#### Minor changes

- Design flow for the plant is 5.1 MGD. The previous permit incorrectly indicated the design flow was 5.2 MGD, and this has been corrected.
- Clarified the mass-based effluent limitations are based on design flow of 5.1 MGD in accordance with 40 C.F.R. § 122.45(b).
- Removed certain water-quality mass-based effluent limitation based on equivalent protection provided by concentration-based effluent limitation and flow limitation (page F-24).
- Changed dissolved oxygen receiving water limitation from a seasonal limit to 7.0 mg/L year-round. This change was made to be consistent with the Basin Plan water quality objectives for cold freshwater habitat beneficial uses. This change is found in the proposed permit Section V.A.12 (page 6).
- Added receiving water limitations for various pollutants to be consistent with the Basin Plan. These additions are found in the proposed permit Section V.A.14 through 24 (pages 6 and 7).
- Corrected un-ionized ammonia from "weekly" to "monthly" receiving water monitoring. This pollutant is reported as a calculated result from other pollutants sampled on a monthly basis; therefore, it too should be calculated on a monthly basis. Additionally, un-ionized ammonia's receiving water limitation was corrected to not be a running annual average. Consistent with the Basin Plan, the water quality objective is expressed as a constant receiving water limitation in the proposed permit Section V.A.15 (page 6).

- Updated the permit to correctly reflect the Basin Plan's surface water quality objectives Table 3-7 for San Luis Obispo Creek. This change can be found on the proposed permit Table 6 (page 7).
- Added groundwater limitations section to the proposed permit. The previous permit did not contain any groundwater limitations. The addition of groundwater limitations is consistent with the Basin Plan and other similar discharge permits within the Central Coast Region. This change can be found in Section V.B of the proposed permit (page 8).
- Added the Recycled Water Policy, adopted in 2009 by the State Water Board, for the development of regional groundwater basin/sub-basin salt and nutrient management plans. This is discussed in the proposed permit Section VI.C.3.a (pages 11 and 12) and the fact sheet Section III.E.3 (page F-11 and 12). This modifies the previous permit's Salts Management Program section.
- Added a Pollutant Minimization Program requirement, consistent with the SIP. The PMP is required when there is evidence that a priority pollutant is present in the effluent above an effluent limitation or the reporting limits were not sufficient to evaluate compliance. This change can be found in the proposed permit Section VI.C.3.b (pages 12 and 13).
- Added reference to the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (State Water Board Order 2006-0003-DWQ). The Discharger is currently enrolled the General Permit for its sewer collection system. As a result of its enrollment, the previous requirements for the Discharger's collection system program are duplicative and have been eliminated from the proposed permit.
- Added Compliance Determination section regarding multiple sample data sets when determining compliance with average monthly effluent limits. This language has been added from the SIP and relates to data sets containing "detected, but not quantified" and "not detected" lab results. This addition can be found in the proposed permit Section VII.B (page 15).
- Added Attachment A-Definitions. This is consistent with the statewide template.
- Updated the Standard Provisions in Attachment D to be consistent with State and Central Coast Water Board updates issued since the previous permit was adopted in 2002.
- Added General Monitoring Provisions consistent with the statewide template. These can be found in the proposed permit Monitoring and Reporting Program Section I.A through F (pages E-2 and E-3).
- Added monitoring location BIO-001 to allow for the Discharger's electronic upload of biosolids sampling results into the State's CIWQS database. This change can be found on the proposed permit Monitoring and Reporting Program Table E-1 (page E-3).
- Monitoring requirements have overall been changed to reference the regulations specifically, rather than list out the individual constituents within the regulations as the previous permit had done. For example, Title 22 and CTR pollutants are required by

reference to regulations rather than listing out the individual pollutants. The same applies for biosolids monitoring.

- Due dates on various required reports have been slightly adjusted to accommodate the State's CIWQS database. For example, the monthly reports are now due on the first day of the second calendar month following the month of sampling.
- Discharger is required to upload self-monitoring reports electronically into the State's CIWQS database. This is a minor change as the Discharger has already been uploading and using the CIWQS database. This change can be found on the proposed permit MRP Section X.B (page E-18).

## COMMENTS

Public notice was provided and posted for the consideration of this proposed permit. The Discharger provided comments in a letter dated July 24, 2014. Those comments are discussed in the proposed Order's fact sheet (page F-32 through F-34). Staff does not recommend any changes to the proposed Order as a result of the comments, with the exception of a minor date correction on page 11.

## RECOMMENDATION

Adopt Order No. R3-2014-0033.

## ATTACHMENTS

For copies, please refer to the Central Coast Water Board's internet website at:  
[http://www.waterboards.ca.gov/centralcoast/board\\_info/agendas/2014/2014\\_agendas.shtml](http://www.waterboards.ca.gov/centralcoast/board_info/agendas/2014/2014_agendas.shtml)

1. Proposed Order No. R3-2014-0033, including the following attachments:
  - Attachment A – Definitions
  - Attachment B – Map
  - Attachment C – Flow Schematic
  - Attachment D – Standard Provisions
  - Attachment E – Monitoring and Reporting Program (MRP)
  - Attachment F – Fact Sheet
2. Discharger comment letter dated July 24, 2014