

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL COAST REGION  
895 Aerovista Place, Suite 101  
San Luis Obispo, CA 93401**

**RESOLUTION NO. R3-2008-0025**

**MODIFICATION TO THE MOLYBDENUM EFFLUENT LIMITATIONS IN THE  
CITY OF LOMPOC WASTEWATER TREATMENT FACILITY  
WASTE DISCHARGE REQUIREMENTS ORDER NO. R3-2006-0037, NATIONAL  
POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT NO. CA0048127**

The Regional Water Quality Control Board, Central Coast Region (Central Coast Water Board) finds that:

1. The City of Lompoc owns and operates a domestic/municipal wastewater collection, treatment, and disposal system (i.e., Publicly Owned Treatment Works, or POTW) known as the City of Lompoc Regional Wastewater Reclamation Facility (Facility). The Facility also treats and disposes of wastewater from Vandenberg Air Force Base and Vandenberg Village Community Services District. The Facility is located at 1801 West Central Avenue, Lompoc, California
2. On July 7, 2006, the Central Coast Water Board adopted Waste Discharge Requirements (WDR) Order No. R3-2006-0037, National Pollutant Discharge Elimination System (NPDES) Permit CA0048127. Order No. R3-2006-0037 regulates the discharge of secondary treated effluent from the Facility to San Miguelito Creek, which is tributary to the Santa Ynez River (waters of the United States), located within the Santa Ynez River Hydrologic Unit. The Order's effective date is September 8, 2006.
3. Order No. R3-2006-0037 prescribes the following effluent limits for molybdenum, which were first established as final effluent limits in Order No. 01-87, which became effective on July 7, 2006. These limits are based on the irrigation supply water quality objective for agricultural water use in Table 3-4 of the Water Quality Control Plan, Central Coast Region (Basin Plan).

<b>Parameter</b>	<b>Units</b>	<b>Average Monthly</b>	<b>Maximum Daily</b>
Molybdenum	mg/L	0.010	0.020

mg/L – milligrams per liter

Treatment at the Facility currently consists of mechanical bar screens, two primary clarifiers, one biofilter, one aeration tank, three secondary clarifiers, and a chlorine contact tank. Sludge handling includes one gravity thickener, two sludge digesters, two sludge lagoons, drying beds, and offsite disposal. The existing Facility does not enable the City to comply with the molybdenum effluent limits established in Order No. R3-2006-0037.

The City recently began work to upgrade its wastewater treatment facility, which will include a replacement influent pumping station; grit removal and handling with aerated grit tank, grit classifiers, and washers; biological treatment in two parallel oxidation ditches for nitrification and denitrification; secondary clarification in three sedimentation tanks; and ultraviolet disinfection. The City also completed a design for molybdenum treatment processes, and estimated the additional construction cost at approximately 5.4 million dollars and operating costs of 500,000 dollars per year. Due to recent receiving water data, the City believes that construction, operations, and maintenance costs for molybdenum treatment are unreasonable and unjustified because of the uncontrollable nature of molybdenum in the city's influent.

4. On April 25, 2007, the Central Coast Water Board issued Time Schedule Order No. R3-2007-0021 (TSO) to the City of Lompoc to comply with molybdenum effluent limits identified in Section IV.A.1.a., Table IV-1 of Order No. R3-2006-0037. The TSO requires the City to conduct a comprehensive molybdenum study to identify the source of molybdenum concentrations in the City's influent. The TSO also requires the City to propose planned actions in response to the study findings. The intent of these planned actions is to decrease impacts to the receiving waters (i.e., San Miguelito Creek and Santa Ynez River). Ultimately, the TSO requires the City to achieve full compliance with the molybdenum effluent limits established in Order No. R3-2006-0037, but prescribes interim molybdenum effluent limits until the final compliance date of the TSO. The City has consistently complied with the TSO time schedule and interim effluent limits.

Finding No. 12 of the TSO discussed various options dependent on the molybdenum study results. If the City's study concludes that San Miguelito Creek's high molybdenum concentrations are **controllable** (i.e., are due to anthropogenic conditions or influence as defined by the Central Coast Basin Plan, and regardless of whether those conditions or influences are due to causes within the City's control or jurisdiction), then the City must comply with the existing molybdenum effluent limits or demonstrate that the water quality objective is inappropriate. However, if the City demonstrates that receiving water quality in San Miguelito Creek exceeds the water quality objective due to **uncontrollable** factors (i.e., naturally occurring conditions, consistent with the Central Coast Basin Plan "controllable factors" policy set forth in Chapter II. Water Quality Objectives), then the Central Coast Water Board may consider establishing effluent limits that are at least as stringent as the interim effluent limits set forth below and that do not cause further degradation of receiving water quality

5. The City and Central Coast Water Board staff met on November 13, 2007, to discuss the preliminary characterization report for molybdenum. The report discusses naturally occurring molybdenum in the environment, molybdenum concentrations detected in various monitoring locations (i.e., San Miguelito Creek, Santa Ynez River, City of Lompoc Municipal Supply, Vandenberg Air Force Base discharges, Vandenberg Village Community Services District discharges, City of Lompoc's Wastewater Treatment Plan Influent/Effluent), and the study's results and conclusions. As a result of the meeting, Central Coast Water Board staff requested that the City finalize the preliminary characterization report with some modifications.

Additionally, staff requested that the City conduct a statistical analysis of data collected to determine whether data are accurate and reliable.

6. The City submitted the final *Molybdenum Characterization Study Second Quarterly Report* on December 20, 2007, which addressed comments provided by Central Coast Water Board staff. The study explains that molybdenum concentrations found in the city's water supply are naturally occurring (Monterey formation) in the Lompoc Valley. Additionally, groundwater monitoring conducted in July 2003 indicates that all of the city's water supply wells (Wells 1 through 9) showed presence of molybdenum concentrations above the water quality criterion of 10 micrograms per liter ( $\mu\text{g/L}$ ).

The City previously conducted a study to determine if any domestic source contributed to the molybdenum in the City's wastewater. The City's *Evaluation of Metals Loadings and Discharge Limits Study (Kennedy/Jenks, 2004)* demonstrated no significant difference between molybdenum concentrations found in the city's collection system wastewater and the city's water supply. Therefore, the evaluation identified no possible anthropogenic sources contributing to elevated molybdenum concentrations. The City's *Molybdenum Characterization Study (2007)* corroborates the findings in the *Kennedy/Jenks 2004* study.

As part of the *Molybdenum Characterization Study*, the City collected approximately seven months of receiving water data from both San Miguelito Creek and Santa Ynez River. San Miguelito Creek was sampled in four different locations; San Miguelito Creek at Frick Springs (headwaters), San Miguelito Creek at Willow Street (upstream to city's urban footprint), San Miguelito Creek at V Street (upstream of the Facility's effluent discharges point), and of San Miguelito Creek downstream (downstream of the Facility's effluent discharges point). San Miguelito Creek monitoring results are presented below.

#### San Miguelito Creek Molybdenum Monitoring Results

Monitoring Location	Average Molybdenum Concentration ( $\mu\text{g/L}$ ) <sup>1</sup>	Molybdenum Water Quality Objective ( $\mu\text{g/L}$ ) <sup>2</sup>
San Miguelito Creek at Frick Springs	35.67	10
San Miguelito Creek at Willow Street	94.17	10
San Miguelito Creek at V Street	46.93	10
San Miguelito Creek downstream	16.14	10

1 – Average values of Total Molybdenum.

2 – Water quality objective obtained from the Central Coast Basin Plan.

All monitoring locations in San Miguelito Creek indicate molybdenum concentrations exceeding the Basin Plan water quality objective.

Santa Ynez River was sampled in two different locations; Santa Ynez River upstream and Santa Ynez downstream (below the confluence of San Miguelito

Creek and Santa Ynez River). Santa Ynez River monitoring results for are presented below.

### Santa Ynez River Molybdenum Monitoring Results

Monitoring Location	Average Molybdenum Concentration (µg/L) <sup>1</sup>	Molybdenum Water Quality Objective (µg/L) <sup>2</sup>
Santa Ynez River upstream	17.00 <sup>3</sup>	10
Santa Ynez River downstream	16.36	10

1 – Average values of Total Molybdenum.

2 – Water quality objective obtained from the Central Coast Basin Plan.

3 – Location was sampled once due to predominantly dry conditions.

Data collected in Santa Ynez River demonstrate molybdenum concentrations above the Basin Plan water quality objective.

7. The City conducted statistical analysis at the request of Central Coast Water Board staff. A summary of statistics for monitoring results demonstrate confidence in the sample set. Data for 20 of 23 sampling locations yielded a coefficient of variation of 0.13 or less, indicating a high level of precision. The lower the coefficient of variation, the less variability in the data. The city also conducted a 95 percent confidence interval providing an estimate of uncertainty in the true mean. Data for 19 of 23 sample locations provided a narrower upper and lower limit of the true mean, indicating a more precise estimate. Finally, a power analysis was conducted to demonstrate confidence and strength in the data set. The power analysis further concluded confidence in the data set and that the data collected demonstrated accuracy and reliability. A small number of sampling locations (i.e., Santa Ynez River Upstream and Vandenberg Air Force Base water supply) concluded some variability, but calculations were based in insufficient data from these locations. In the case of San Miguelito Creek upstream location, concentrations varied due to extremely low flows and in many cases, samples were collected from pooled water. Variability in the Vandenberg Air Force Base water supply was due to routine maintenance, which blended state water to well water.
8. Chapter 3, Section II of the Basin Plan discusses the basis for water quality objectives. Specifically, this section states “controllable water quality conditions are those actions or circumstances resulting from man’s activities that may influence the quality of the waters of the state and that may be reasonably controlled.” As discussed in Finding No. 5 (above), the TSO provided options if the City was able to confirm presence of molybdenum was due to anthropogenic sources in San Miguelito Creek. According to the data submitted in the final *Molybdenum Characterization Study Second Quarterly Report (December 2007)*, the City verified, with statistical confidence, that molybdenum concentrations found in receiving waters (i.e., San Miguelito Creek and Santa Ynez River) are not a result of anthropogenic activities.
9. The City submitted a letter on December 20, 2007 discussing the option of removing or modifying final molybdenum effluent limitations established in Order

No. R3-2006-0037. The request was based on the results of the characterization study and Finding No. 5 of the TSO stating, "if the City demonstrates that receiving water quality in San Miguelito Creek exceeds the water quality objective due to uncontrollable factors, then the Central Coast Water Board may consider establishing effluent limits that are at least as stringent as the interim effluent limit set forth below [average monthly limit of 25 µg/L and a maximum daily limit of 35 µg/L] and that do not cause further degradation of receiving water quality."

10. Based on the findings in this Resolution and the information in the record, this Resolution modifies Order No. R3-2006-0037 by to establishing final effluent limits for molybdenum that are less stringent than the final effluent limits currently set forth in that Order. Clean Water Act section 402(o) and Code of Federal Regulations, Title 40 (40 CFR), Section 122.44 prohibit a permit from containing effluent limits that are less stringent than the previous permit unless allowed by an exception. Clean Water Act section 402(o)(2)(B)(i) allows renewed, reissued, or modified permits to contain effluent limits less stringent than those established in the previous permit based on new information or data that were not available at the time of permit issuance that would have justified a less stringent effluent limit. Any less stringent effluent limit must be consistent with anti-degradation policies. In this case, the new information supports the conclusion that the receiving waters are naturally high in molybdenum concentrations, that the discharge at the proposed effluent limit concentrations would not further degrade the receiving waters, that the causes of the high molybdenum concentrations in the receiving waters are uncontrollable consistent with the Basin Plan policy, and that the discharge is controlled using best practicable treatment or control. The Central Coast Water Board, therefore, finds that the revised effluent limits are consistent with the anti-backsliding provisions of Clean Water Act section 402(o) and 40 CFR 122.44. The Central Coast Water Board also finds that the revised effluent limits are consistent with State Water Resources Control Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California") and the federal anti-degradation policy at 40 CFR 131.12. The receiving waters are not of high quality with respect to molybdenum concentrations based on uncontrollable water quality conditions and the discharge will not cause further degradation of the receiving waters.
11. Federal regulations at 40 CFR 122.44(d) require state issued NPDES permits to contain effluent limits where the discharge will cause or contribute, or have reasonable potential to cause or contribute, to an excursion above state water quality standard. The receiving water exceeds the applicable water quality standard due to uncontrollable factors that are not a result of anthropogenic sources.

The Basin Plan states that where degradation is caused by uncontrollable water quality factors, controllable conditions shall not cause further degradation of water quality. The proposed effluent limits will not cause further degradation of the receiving waters and the effluent limit is established for the City's current performance, as indicated below:

Parameter	Units	Average Monthly	Maximum Daily
Molybdenum	µg/L	0.025	0.035

12. The Central Coast Water Board has notified the City and interested agencies and persons of its intent to issue the Resolution concerning violations or threatened violations of waste discharge requirements.

Pursuant to California Water Code Section 13320, any aggrieved party may seek review of this Resolution by filing a petition with the State Water Resources Control Board. A petition must be received by the State Water Resources Control Board, Office of Chief Counsel, 1001 I Street, 22<sup>nd</sup> Floor, Sacramento, California, 95812, within 30 days of adoption of this Order.

**THEREFORE BE IT RESOLVED, that**

1. The molybdenum effluent limitations established in Section IV.A.1.a, Table IV-1 of Order No. R3-2006-0037 and associated molybdenum findings identified in Sections C (Water Quality-Based Effluent Limitations) and D (Final Effluent Limitations) of the Fact Sheet be modified and replaced with findings set forth in this order and the following final effluent limits:

Parameter	Units	Average Monthly	Maximum Daily
Molybdenum	µg/L	0.025	0.035

2. In accordance with Requirement No. 5 of Time Schedule Order No. R3-2007-0021 and the above findings, Time Schedule Order No. R3-2007-0021 is hereby rescinded.

I, Roger W. Briggs, Executive Officer of the Central Coast Water Board do hereby certify that the forgoing is full, true, and correct copy of Resolution No. R3-2008-0025 adopted by the Central Coast Water Board on May 9, 2008.

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Date

ORDERED BY: \_\_\_\_\_

Roger W. Briggs  
Executive Officer