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Central Valley Regional Water Quality Control Board

22 November 2024

Debra Dunn
Kings River Water Quality Coalition
4886 E. Jensen Avenue
Fresno, CA 93725

REVIEW OF THE KINGS RIVER WATER QUALITY COALITION'S SOURCE IDENTIFICATION STUDY WORKPLAN FOR MOLYBDENUM AND NICKEL

Thank you for your 1 August 2024 submittal of the proposed Source Identification Study Workplan (SIS Workplan) for the Kings River Water Quality Coalition. Based on Central Valley Water Board staff's review, the SIS Workplan is insufficient in scope to either 1) eliminate irrigated agriculture as a potential contributor or 2) identify the mechanisms that may be resulting in irrigated agricultural contributions.

Additional information regarding these and other issues identified by staff can be found in the enclosed memorandum. By **3 February 2025**, please submit a revised SIS Workplan addressing the comments and recommendations provided by staff.

If you have any further questions regarding this letter or the enclosed memorandum, please contact Mathew Jian by phone at (559) 445-5567, or by email at Mathew.Jian@waterboards.ca.gov.

Christine Shyre

For Patrick Pulupa
Executive Officer

Enclosure: Staff Review of Kings River Water Quality Coalition's Source Identification Study Workplan for Molybdenum and Nickel

Central Valley Regional Water Quality Control Board

TO: Eric Warren, PE
Senior Water Resource Control Engineer
IRRIGATED LANDS REGULATORY PROGRAM

FROM: Mathew Jian
Water Resource Control Engineer
IRRIGATED LANDS REGULATORY PROGRAM

DATE: 22 November 2024

SUBJECT: **REVIEW OF KINGS RIVER WATER QUALITY COALITION'S SOURCE IDENTIFICATION STUDY WORKPLAN FOR MOLYBDENUM AND NICKEL**

On 1 August 2024, the Kings River Water Quality Coalition (Coalition) submitted a Source Identification Study Workplan (SIS Workplan) to the Central Valley Water Board. In accordance with Waste Discharge Requirements (WDR) General Order R5-2013-0120-09 (General Order), Source Identification Studies can be used as an intermediate step in development of Surface Water Quality Management Plans to investigate the causes or potential contributing sources to identified water quality issues. This memorandum provides pertinent background information, a summary of the SIS Workplan, and staff's comments and recommendations.

BACKGROUND

As an approved third-party group for the Irrigated Lands Regulatory Program, the Coalition conducts water quality monitoring of various surface waters within its coverage area. Where two or more exceedances of a water quality trigger limit (WQTL) are observed within a three-year period, the General Order requires the development and implementation of a Surface Water Quality Management Plan to address agricultural contributions the water quality issue(s). Recent sampling results have identified two or more exceedances of WQTLs for nickel and molybdenum at the Tivy Creek and Jackson Avenue monitoring sites, respectively. On 1 August 2023, the Coalition submitted a Comprehensive Surface Water Quality Management Plan (CSQMP) which included a proposed Source Identification Study to identify contributing sources of nickel and molybdenum. The CSQMP was approved by the Executive Officer with direction to develop and submit the SIS Workplan.

SUMMARY OF THE COALITION'S SOURCE IDENTIFICATION STUDY WORKPLAN APPROACH

Evaluation of Potential Sources
The SIS Workplan states that the Tivy Creek monitoring site is located within the Sierra Nevada mountain range, and that nickel has been documented to be present in the Sierra Nevada range just east (upstream) of Tivy Creek. The Coalition asserts that there is no upstream agriculture and limited agricultural activity surrounding Tivy Creek.

The SIS Workplan states that molybdenum has been documented to be present in the groundwater at the Lemoore Naval Air Station (NAS), which is located near the Jackon Avenue monitoring site. The groundwater at the Jackson Avenue is in a perched, relatively shallow aquifer, which has the potential to rise during periods of sufficient rainfall and can move contaminated groundwater into surface waters. Moreover, the SIS Workplan states that molybdenum is required to be monitored as part of the WDR for the Lemoore NAS Wastewater Treatment Facility. The facility's effluent travels through an unlined and covered ditch that discharges directly upstream of the Jackson Avenue monitoring site.

Source Identification Study Approach
The SIS Workplan does not propose to conduct field studies, but instead proposes to conduct a literature review of several sources including the United States Geological Survey, the Central Valley Water Board, and the State Water Resources Control Board. From this research, the Coalition intends to demonstrate that the observed exceedances of nickel at Tivy Creek and molybdenum at Jackson Avenue are not the result of agricultural waste discharges. If such determinations are made, the Coalition will request these constituents of concern be removed from the CSQMP.

STAFF COMMENTS AND RECOMMENDATIONS

Staff supports the implementation of a Source Identification Study to better understand the mechanisms that are causing or contributing to the observed exceedances in surface water. However, the SIS Workplan as written appears insufficient in scope to either 1) eliminate irrigated agriculture as a potential contributor or 2) identify the mechanisms that are resulting in irrigated agricultural contributions. Of primary concern is that the SIS Workplan relies exclusively on review of existing literature with a focus only on the presumed causes.

The Coalition should make reasonable efforts to investigate all potential sources (i.e., irrigated agricultural activities) that could be causing or contributing to the water quality issues. For example, if nickel is naturally present in local soils, it is feasible that agricultural lands in this area may promote its discharge if insufficient sediment and erosion control measures are in place.

Staff recommend revision of the SIS Workplan to ensure the study is broad enough in scope to identify potential contributing sources and transport mechanisms for the subject constituents. The described literature review should be supplemented with as much information as feasible (e.g., grower surveys, upstream monitoring data, soil samples, photos, etc.) for staff to make a determination regarding the potential need for a Surface Water Quality Management Plan.