
Central Valley Regional Water Quality Control Board

**CENTRAL VALLEY DIURON
TOTAL MAXIMUM DAILY LOAD and BASIN PLAN AMENDMENT
Informational Document**

**CEQA Scoping Meeting
30 October 2012**

1 Project Introduction

Staff of the California Regional Water Quality Control Board, Central Valley Region (“Central Valley Water Board” or “Board”) is developing a proposal to amend the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* (the “Basin Plan”) to establish water quality objectives, total maximum daily loads (TMDLs), and a program of implementation to control discharges of the herbicide diuron.

Diuron is an herbicide used to control annual broadleaf and grassy weeds. Diuron is one of the most-used herbicides in California and has both agricultural and non-agricultural uses. Monitoring of Sacramento River and San Joaquin River Basin water bodies has documented algal toxicity and exceedances of the narrative water quality objective for the protection of aquatic life due to diuron. These exceedances have resulted in the addition of eight Central Valley water bodies to the State Water Board’s Clean Water Act Section 303(d) List (the “303(d) List”). The Board is required to establish TMDLs for water body-pollutant combinations on the 303(d) List, pursuant to Section 303(d) of the federal Clean Water Act. Board staff is therefore developing a Basin Plan Amendment that will establish: 1) water quality objectives; 2) TMDLs; and 3) a program of implementation to control diuron discharges.

This informational document is intended to solicit input regarding the range of project actions, alternatives, reasonably foreseeable methods of compliance, significant and cumulative impacts, and potential mitigation measures that the Board will need to analyze in the course of developing the Basin Plan Amendment. Project scoping pursuant to the California Environmental Quality Act (CEQA) is only an initial step in the Central Valley Water Board’s planning process. After comments on this document are submitted to the Board, staff will consider all of the issues that commenters may raise, and will circulate a draft staff report for further comment. The draft staff report will include a completed CEQA checklist and an analysis of the potentially significant adverse environmental effects of the project. In addition, the Board’s scientific conclusions will be subject to peer review pursuant to Health and Safety Code section 57004. The Board would like to receive comments regarding the proposed Basin Plan Amendment and any direct, indirect, and cumulative environmental impacts that could result from adoption of the amendment.

2 Regulatory Authority and Mandates for Basin Plan Amendments

The State Water Resources Control Board (“State Water Board”) and the nine Regional Water Quality Control Boards (collectively, the “Water Boards”) are the state agencies with the primary responsibility for coordination and control of water quality. (Wat. Code, § 13000.) Each of the Water Boards has adopted water quality control plans (referred to as “Basin Plans”), which provide the basis for regulatory actions to protect water quality. (Wat. Code, §13240 et seq.) The Basin Plans designate the beneficial uses of waters of the state (both groundwater and surface water) that are to be protected, establish water quality objectives designed to protect those beneficial uses, and include implementation programs designed to achieve the water quality objectives. (Wat. Code, § 13050(j).) The Central Valley Water Board maintains the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins*, which applies to surface water and groundwater within the entire Sacramento River and San Joaquin River drainage basin, including the Sacramento-San Joaquin Delta.

The Central Valley Water Board’s Basin Planning Program, under which the Board can adopt amendments to the Basin Plan, is an “exempt regulatory program” and is subject to certain specialized CEQA requirements. This does not mean that the Board is exempt from considering the environmental effects that its Basin Planning actions will have on the environment. Rather, the “exempt regulatory program” designation has been applied to the Board’s Basin Planning Program because this program includes analysis; the Secretary of Natural Resources has determined that this analysis may substitute for the traditional analytical process required under CEQA. When amending the Basin Plan, the Board must perform an environmental analysis of the reasonably foreseeable methods of compliance and must prepare substitute environmental documentation (SED) that fulfills the same informational needs as traditional CEQA documents, and must seek early public consultation.

3 Problem Statement and Project Proposal

Water quality monitoring in the Sacramento River and San Joaquin River Basins has documented concentrations of diuron that exceed the water quality objective for the protection of aquatic life beneficial uses. These exceedances have resulted in the addition of eight water bodies to the Clean Water Act section 303(d) List. As a result, the intent of the proposed project is to develop a Basin Plan Amendment that would establish 1) diuron water quality objectives for the protection of aquatic life beneficial uses in the Sacramento River and San Joaquin River Basins; 2) TMDLs for water bodies on the 303(d) List for diuron in the Sacramento River and San Joaquin River Basins; and 3) a program of implementation.

3.1 Geographic Scope

The project area where the water quality objectives may apply is all of the water bodies with an aquatic life beneficial use in the Sacramento and San Joaquin River Basins (Figure 1), or a subset of water bodies from those basins. The Sacramento River and San Joaquin River Basins are described in detail in the Basin Plan.

The project area for the TMDLs will include all of the water bodies on the 303(d) List for diuron when the amendment is brought before the Central Valley Water Board. There are water bodies that are 303(d)-listed for diuron in both the Sacramento River and San Joaquin River Basins. To date, the eight Sacramento River and San Joaquin River Basin water bodies identified on the 303(d) List for diuron impairment are Stony Creek, Comanche Creek (from Little Chico Creek to Angel Slough, Butte, and Glenn Counties), Main Drainage Canal, Lone

Tree Creek, San Joaquin River (Stanislaus River to Delta Boundary), Del Puerto Creek, Orestimba Creek (below Kilburn Road), and Miles Creek (Merced County).

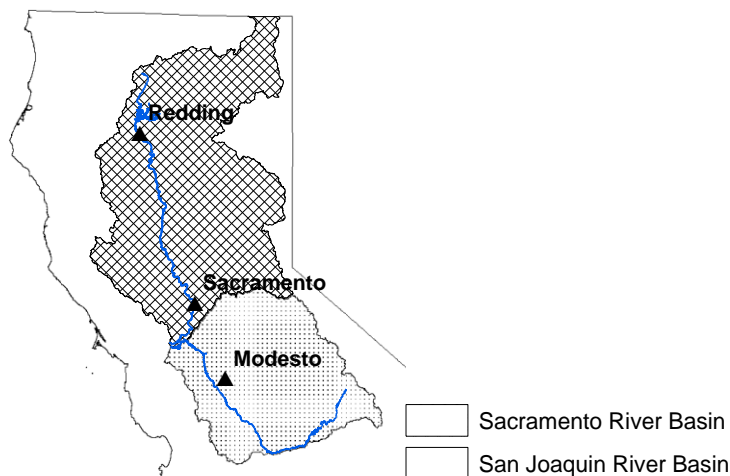


Figure 1 Project Area – the Sacramento River and San Joaquin River Basins.

3.2 Beneficial Use

The Basin Plan designates one or more aquatic life beneficial uses to nearly all of the surface water bodies in the basin, with the exception of the California Aqueduct, which has no existing aquatic life beneficial uses. Aquatic life beneficial uses include freshwater habitat (WARM or COLD), migration (MIGR), and spawning (SPWN). The aquatic life beneficial uses are expected to be the most sensitive beneficial uses to diuron discharges, and they are therefore the focus of this project.

3.2.1 Beneficial Use Alternatives

The Board may consider changing beneficial use designations if it is infeasible to attain a use or if a more sensitive beneficial use is not currently designated, but would be applicable. The beneficial use alternatives under consideration include: 1) no change to the beneficial uses, 2) modification of the beneficial uses, and 3) the addition of beneficial uses. The first alternative would consider no changes in the existing beneficial use designations to water bodies in the Sacramento River and San Joaquin River Basins. The second alternative would result in creating a sub-category of the designated WARM and COLD uses to account for factors that could make attainment of the WARM and COLD uses infeasible. The third alternative would consider the addition of beneficial uses that may apply to some, or all, of the project area water bodies including: Commercial and Sport Fishing (COMM); Preservation of Biological Habitats of Special Significance (BIOL); Rare, Threatened, or Endangered Species (RARE); Shellfish Harvesting (SHELL); and Estuarine Habitat (EST). It should be noted that the beneficial uses (WARM and COLD) that are the most sensitive to diuron are widely designated and there is no indication that the current designations are infeasible.

3.3 Water Quality Objectives

The Porter-Cologne Water Quality Control Act (Porter-Cologne) (Wat. Code, § 13000 et seq.) defines water quality objectives as "...the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or

the prevention of nuisance within a specific area” (Wat. Code, § 13050(h).) Porter-Cologne requires each regional water board to establish water quality objectives that will ensure the reasonable protection of beneficial uses and the prevention of nuisance. Porter-Cologne recognizes that it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses. Factors considered by a regional water board in establishing water quality objectives include, but are not necessarily limited to:

- (a) Past, present, and probable future beneficial uses of water.
- (b) Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.
- (c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.
- (d) Economic considerations.
- (e) The need for developing housing within the region.
- (f) The need to develop and use recycled water.

The narrative water quality objectives for pesticides in the Basin Plan state:

- No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses.
- Discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses.
- Pesticide concentrations shall not exceed those allowable by applicable antidegradation policies. (see State Water Resources Control Board Resolution No. 68-16 and 40 C.F.R. Section 131.12.).
- Pesticide concentrations shall not exceed the lowest levels technically and economically achievable.

The Basin Plan’s narrative water quality objective for toxicity is also applicable, and is as follows:

All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board.

3.3.1 Water Quality Objectives Alternatives

The alternatives under consideration for water quality objectives include: 1) no change to the current water quality objectives; 2) the establishment of a “no detectable diuron” water quality objective; 3) the establishment of water quality objectives for diuron derived using the UC Davis methodology; and 4) the establishment of a water quality objective for diuron based on the US EPA aquatic life benchmark. Under the first alternative, the narrative water quality objective would continue to be used and interpreted by a numeric evaluation guideline. The value most recently used as the evaluation guideline is 1.3µg/L; this value is a 96-hr EC₅₀ for cell growth of *Chlorella pyrenoidosa*, (Ma et al. 2001). The numeric evaluation guideline may vary between listing cycles and is dependent on the availability of acceptable new data. Under the second

alternative, detectable concentrations of diuron in surface water would not be allowed; the Basin Plan Amendment would define “detectable concentration”. The third alternative would establish water quality objectives using the criteria derived by the UC Davis methodology (TenBrook et al. 2010). The acute criterion is 170µg/L and was calculated using Assessment Factor Method, as specified by the UC Davis method in the absence of adequate acceptable data to fit a species sensitivity distribution. The UC Davis chronic criterion is 1.3µg/L; this value is a no observed effects concentration (NOEC) for *Pseudokirchneriella subcapitata* (Blasburg et al. 1991). The UC Davis method recommends the lowest NOEC for an important alga or vascular aquatic plant species to serve as the chronic criterion in the absence of acceptable data to fit a species sensitivity distribution (Fojut et al. 2012). The fourth alternative would establish a water quality objective using the US EPA aquatic life benchmark of 2.4µg/L; this value is reported by US EPA as a 120-hr EC₅₀ for *Pseudokirchneriella subcapitata*.

As stated above, the proposed water quality objectives could apply to all Sacramento River and San Joaquin River Basin water bodies with an aquatic life use designation, or to just a subset of those water bodies.

3.4 Implementation Program

As specified in Porter-Cologne, an implementation program for achieving water quality objectives shall include, at the minimum:

- (a) A description of the nature of actions which are necessary to achieve the objectives, including recommendations for appropriate action by any entity, public or private;
- (b) A time schedule for the actions to be taken; and
- (c) A description of surveillance to be undertaken to determine compliance with objectives. (Wat. Code, § 13242.)

Surveillance monitoring establishes baseline conditions, allows for comparison of water quality conditions inside and outside of a project area, measures the effectiveness of actions, and provides a mechanism to trigger additional actions if certain environmental conditions are met.

3.4.1 Implementation Program Alternatives

The Basin Plan currently contains a number of implementation provisions relevant to pesticide discharges, but no provisions specific to diuron. Some of these provisions may be updated as part of this amendment. To the extent practicable, the implementation program will be coordinated through existing water board programs including NPDES permits (point source discharges), the Irrigated Lands Regulatory Program (ILRP), waste discharge requirements (WDRs), and waivers of WDRs. Prohibitions and/or changes to required actions (best management practices, monitoring, reporting, etc.) may be proposed. The implementation program requirements may vary depending on whether the water quality objective and/or the TMDL apply. A compliance schedule will be proposed that, to the extent practicable, will aim to coordinate with schedules for existing programs and permits.

4 Project Schedule

Project Milestones	Estimated Completion Date
CEQA Scoping Meeting	October 2012
Draft Staff Report for Peer Review	Mid 2013
Draft Staff Report for Public Comment	Late 2013
Stakeholder Workshop(s)	Early 2014
Regional Board Hearing	Mid 2014
State Board Approval	Late 2014
Office of Administrative Law Approval	Early 2015
US EPA Approval	Mid 2015

5 Contact

Written comments regarding the scope of the proposed Diuron TMDL and Basin Plan Amendment can be submitted by e-mail or mail to the below address.

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For more information, visit:

http://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/central_valley_pesticides/diuron_tmdl_bpa/index.shtml

To subscribe to e-mail updates, visit:

http://www.waterboards.ca.gov/resources/email_subscriptions/reg5_subscribe.shtml

(NOTE: Check the box titled “**Central Valley Diuron TMDL & Basin Plan Amendment**”)

6 References

California Regional Water Quality Control Board – Central Valley Region, CVRWQCB-CVR, 2011. Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins.

Fojut T, Palumbo A, and Tjeerdema R. 2012. Aquatic Life Water Quality Criteria Derived via the UC Davis Method: III. Diuron. *Rev Env Contamin Toxicol* 216:105-141.

Ma J, Liang W, Xu L, Wang S, Wei Y, Lu J. 2001. Acute toxicity of 33 herbicides to the green alga *Chlorella pyrenoidosa*. *Bulletin of Environmental Contamination and Toxicology* 66: 536-541.

TenBrook PL, Palumbo AJ, Fojut TL, Hann P, Karkoski J, Tjeerdema RS. 2010. The University of California-Davis methodology for deriving aquatic life pesticide water quality criteria. *Rev Environ Contamin Toxicol* 209:1-155.