

Evaluation of Municipal and Domestic Supply (MUN) and Agricultural Supply (AGR) Beneficial Uses of Groundwater in Portions Adjacent to the Administrative Boundaries of the South Belridge, Monument Junction, and Cymric Oil Fields in Kern County - Remote/Online and In-Person Public Workshop and California Environmental Quality Act (CEQA) Scoping Meeting

INFORMATION DOCUMENT

Introduction

In order to ensure appropriate beneficial use protection, the Central Valley Regional Water Quality Control Board (Central Valley Water Board or Board) is considering an amendment to the Water Quality Control Plan for the Tulare Lake Basin (Tulare Lake Basin Plan) related to the current MUN and AGR beneficial use designations in portions adjacent to the Administrative Boundaries of the South Belridge, Monument Junction, and Cymric Oil Fields in Kern County.

Staff from the Central Valley Water Board will hold a Public Workshop and CEQA scoping meeting to discuss and solicit comments and suggestions from the public regarding potential alternatives that may become amendments to the Tulare Lake Basin Plan, how regulated entities might comply with any of the alternatives, the significant and cumulative impacts that could result from new implementation provisions, and potential mitigation measures to limit these impacts.

This document summarizes the basin plan amendment project undertaken by the Central Valley Water Board and identifies some of the potential environmental impacts, both direct and indirect, that should be evaluated under CEQA for the project. This document is not meant to be inclusive of all potential environmental impacts for the project, but to assist in CEQA scoping to help identify potential environmental impacts that may occur as a result of this project and should be evaluated under the project.

Background

Valley Water Management Company (Valley Water) operates three unlined oil field produced wastewater disposal pond systems at two facilities named the McKittrick 1-1 and McKittrick 1 & 1-3 Facilities (together referred to as Facilities) located approximately 14 miles northwest of the town of McKittrick in western Kern County (See Figure 1). The Facilities receive produced wastewater from oil and gas producers in adjacent oil fields and discharge that wastewater to unlined ponds. The receiving water beneath the facilities has total dissolved solids (TDS) concentrations ranging from approximately 2,200 to 17,000 mg/L TDS. Discharge of produced wastewater to the Facilities is regulated by the Central Valley Water Board under Resolution Waste Discharge Requirements (WDRs) No. 69-199 and Monitoring and Reporting Program Orders (MRPs) Nos. R5-2018-0808 and R5-2019-0896, in addition to a Cease-and-Desist Order (CDO) No. R5-2019-0045.

Other facilities, that. operate within the area proposed for de-designation include the Clean Harbors Buttonwillow, Inc. facility (Clean Harbors), a Class I and II waste disposal facility, regulated by the Central Valley Water Board under WDRs 96-094, Revised MRP 96-094 and Special Order 98-165 (modifies WDRs 96-094) and, the following companies which operate Underground Injection Control Wells regulated by the California Geologic Energy Management Division (Cal GEM):

- Valley Water Management Company,
- California Resources Production Corporation,
- Vaquero Energy, Inc.- Monument Junction Oil Field - Water Disposal - UIC Project No. 479-03-001, and
- Aera Energy LLC - Cymric Oil Field - Cyclic Steam & Steam flood - Project 19024005 - Non-Expansion Phases.

The Clean Harbors facility is also regulated by The California Department of Toxic Substances Control (DTSC).

The Tulare Lake Basin Plan designates groundwater, as with all waters in the Basin, to have beneficial use as Municipal and Domestic Supply (MUN) and Agricultural Supply (AGR) unless specifically de-designated in the Tulare Lake Basin Plan through a Basin Plan Amendment (BPA). The Tulare Lake Basin Plan was amended in 1989 to be consistent with State Water Resources Control Board Resolution No. 88-63, the Sources of Drinking Water Policy. The Sources of Drinking Water Policy resolved that “all surface and ground waters of the state are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the regional water boards” and provides the criteria that must be met for water to be considered unsuitable for the MUN beneficial use. The 1989 amendment to the Tulare Lake Basin Plan designated all surface and ground water bodies in the basin as supporting the MUN beneficial use unless specifically exempted by the Regional Water Board and approved for exemption by the State Water Board. Only ground water areas in Table 2-3 are currently exempted from MUN. Thus, if water previously designated as MUN meets at least one of the criteria specified in the Tulare Lake Basin Plan (which reflect the criteria in Resolution 88-63), the removal of that beneficial use is not self-implementing and must be done through a BPA.

Some areas of groundwater within the proposed area for potential de-designation (Project Area - See Figures 2 and 3) are anticipated to have TDS concentrations exceeding 3,000 mg/L and therefore may meet one of the specific criteria for de-designation of the MUN beneficial use. Potential removal of AGR beneficial use will be based on an evaluation of existing groundwater quality, past, current and/or future agricultural use (if present) and agricultural salinity concentration threshold limit criteria.

The goal of this project is to review and evaluate available information to determine whether the removal of the MUN and AGR beneficial use designations from ground water in the Project

Area is appropriate. No physical (groundbreaking) project is associated with this effort, as the proposed project only involves the potential administrative removal of groundwater MUN and AGR beneficial use in the Project Area, if found to be appropriate. If Central Valley Water Board staff determine the proposed removal of the beneficial uses from groundwater in the project area is appropriate, an amendment to the Tulare Lake Basin Plan will be developed for consideration by the Central Valley Water Board for adoption and approval.

The Central Valley Water Board is required by CEQA to conduct an environmental analysis of a proposed BPA. (Pub. Resources Code, § 21000 et seq.) The purpose of the public workshop and CEQA scoping meeting is to solicit public input regarding the scope of a proposed amendment along with its potential significant environmental impacts, mitigation measures, and possible alternatives. Public comments will help the Central Valley Water Board refine the scope of its environmental analysis. The Central Valley Water Board will not amend the Basin Plan without first circulating its environmental analysis for further public comment.

Regulatory Context

The State Water Board and the nine Regional Water Quality Control Boards (Regional Water Boards) are the state agencies with primary responsibility for coordination and control of water quality. (Wat. Code, § 13000.) Each Regional Water Board is required to adopt a water quality control plan, or basin plan, which provides the basis for regulatory actions to protect water quality. (Wat. Code, § 13240 et seq.) Basin plans designate beneficial uses of water, water quality objectives to protect the uses, a program of implementation to achieve the objectives, and a monitoring program to ensure the goals of the program are met. (Wat. Code, § 13050, subd. (j)). Basin Plans, once adopted, must be periodically reviewed¹ and may be revised. State Policies that directly apply to this effort include:

- The *Sources of Drinking Water Policy*: establishes state policy that all waters are considered suitable or potentially suitable to support the MUN beneficial use, with certain exceptions. The 1989 amendment added the criteria for exceptions from the Sources of Drinking Water Policy to the Tulare Lake Basin Plan and designated all surface and ground water bodies in the basin as supporting the MUN beneficial use unless specifically exempted by the Regional Water Board and approved for exemption by the State Water Board. Only ground water areas in Table 2-3 are currently exempted from MUN.

The *Sources of Drinking Water Policy* includes criteria for surface and ground waters that are unsuitable for the MUN use designation if they contain: 1) TDS concentrations exceeding 3,000 mg/L and where the waters are not reasonably expected by Regional Water Boards to supply a public water system; or 2) contamination, either by natural processes or by human activity, that cannot reasonably be treated for domestic use using either Best Management Practices or best economically achievable treatment practices; or 3) where there is not

¹ Water Code section 13240 and Section 303 (c)(1) of the federal Clean Water Act (33 U.S.C. § 1313(c)(1).) require a review of basin plans at least once each three-year period to keep pace with changes in regulation, new technologies, policies, and physical changes within the region.

sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day; or 4) surface waters in systems designed for wastewater collection or conveying or holding agricultural drainage, provided that the discharge from such systems is monitored to assure compliance with all relevant water quality objectives; or 5) groundwater regulated as a geothermal energy producing source. Exceptions 1) and 2) listed above are typically referred to as *Exception Criterion 1a* and *Exception Criterion 1b*, respectively.

The *Sources of Drinking Water Policy* addresses only the designation of water as suitable, or potentially suitable for municipal or domestic supply. The *Sources of Drinking Water Policy* does not establish water quality objectives for constituents to protect the MUN beneficial use.

State Water Resources Control Board Resolution 68-16 (Statement of Policy with Respect to Maintaining High Quality of Waters in California, referred to as the State Anti-Degradation Policy): generally, prohibits the Central Valley Water Board from authorizing:

- activities that will result in the degradation of high-quality waters unless it has been shown that: 1) the degradation will not result in water quality less than that prescribed in state and regional policies, including violation of one or more water quality objectives; 2) the degradation will not unreasonably affect present and anticipated future beneficial uses; 3) the discharger will employ Best Practicable Treatment or Control (BPTC) to minimize degradation; and 4) the degradation is consistent with the maximum benefit to the people of the state.

Groundwater within the Project Area does not appear to support an unrestricted range of AGR beneficial uses because of naturally occurring geologic conditions that result in elevated levels of salinity constituents, including TDS. The AGR beneficial use included in the Tulare Lake Basin Plan is defined as, “[u]se of water for farming, horticulture, or ranching, including, but not limited to, irrigation, stock watering, or support of vegetation for grazing.” This broad definition distinguishes the AGR beneficial use from the MUN use. While limits protective of human health are relatively well-defined (such as the primary Maximum Contaminant Levels [MCLs]), water quality limits developed to protect AGR uses range from the very stringent standards necessary to protect the most salt-sensitive crops to relatively relaxed standards necessary to protect livestock watering.

As discussed above, the Tulare Lake Basin Plan is consistent with the *Sources of Drinking Water Policy* and contains a list of exceptions whereby the Central Valley Water Board could determine that the MUN beneficial use does not apply in certain ground water. These MUN use exceptions include waters: 1) with TDS that exceeds 3,000 mg/l and the aquifer cannot be reasonably expected to supply a public water system, or 2) with contamination, resulting either from natural processes or human activity, that cannot reasonably be treated for domestic supply use using either Best Management Practices or best economically achievable treatment practices; or 3) where there is not sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per

day; or 4) in aquifers regulated as a geothermal energy producing source. All exceptions require a basin plan amendment to take effect.

Those exceptions are limited to the MUN beneficial use, so AGR beneficial use de-designation requires a different exceptions methodology to determine whether de-designation is appropriate. In making any exceptions to the beneficial use designation of agricultural supply (AGR), the Central Valley Water Board will consider the following criteria:

- (1) There is pollution, either by natural processes or by human activity (unrelated to a specific pollution incident), that cannot reasonably be treated for agricultural use using either Best Management Practices or best economically achievable treatment practices, or
- (2) The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day, or
- (3) The aquifer is regulated as a geothermal energy producing source or has been exempted administratively pursuant to 40 CFR, Section 146.4 for the purpose of underground injection of fluids associated with the production of hydrocarbon or geothermal energy, provided that these fluids do not constitute a hazardous waste under 40 CFR Section 261.3

In the absence of an established salinity water quality objective for the protection of the AGR beneficial use, the Central Valley Water Board relies upon scientific literature to provide salinity threshold concentrations that are generally considered to be protective of irrigation and/or stock watering. Use of water for agricultural irrigation is severely limited at a TDS concentration greater than 2,000 mg/L. This critical threshold limit for TDS was derived from the work of Ayers and Westcot (1985) and recently has been reaffirmed by the Central Valley Salinity Alternatives for Long Term Sustainability (CV-SALTS) region-wide stakeholder initiative (CV- SALTS, 2012). Use of water for stock watering is severely impacted when TDS levels exceed 5,000 mg/L. This threshold limit is based on a National Research Council of the National Academy of Science threshold (NRC/NAS, 1974). Use of water for stock watering is also impacted, to a lesser extent, when TDS levels exceed 3,000 mg/L. This threshold limit is based on a Canadian Council for Ministers of the Environment stock watering salinity threshold (CCME, 2012). CV-SALTS recently reaffirmed these threshold limits in its review of the literature (CV-SALTS, 2013).

Project Description

The Central Valley Water Board is in a multi-year process under which it is evaluating the

beneficial uses assigned to surface and ground waters within the boundaries of the Board's Basin Plans. The Central Valley Water Board is also required to review the beneficial uses in the Project Area due to litigation. As a part of these efforts, the Board is:

1. Evaluating whether groundwater in the Project Area supports the MUN beneficial use, and, if not, whether it may be eligible for de-designation consistent with State Water Board Resolution No. 88-63 (*Sources of Drinking Water Policy*) and the Tulare Lake Basin Plan.
2. Evaluating whether groundwater in the Project Area supports the AGR beneficial use, and, if not, whether it may be eligible for de-designation consistent with Central Valley Water Board policy and the Basin Plan requirements.
3. Considering the de-designation of MUN and AGR beneficial uses of groundwater in the Project Area, where those beneficial uses have not been historically supported, are not currently supported, and are not anticipated to be supported in the future.
4. Considering potential direct and indirect environmental impacts that may occur as a result of the de-designation of the MUN and AGR beneficial uses in groundwater within the Project Area for purposes of CEQA.

This project does not include additional groundwater monitoring in the Project Area. Groundwater monitoring of operations within the Valley Water Management Disposal Facilities are currently regulated under the Central Valley Water Board's MRPs R5-2018-0808 and R5-2019-0896. Under these orders, groundwater monitoring is required to determine whether discharges to the disposal facilities, including the Project Area, are causing, or contributing to a condition of nuisance or pollution, or to non-compliance of Water Quality Objectives (WQOs) outside of the facilities boundaries. Groundwater monitoring for other (non-Valley Water) facilities located within the Project Area (Clean Harbors Buttonwillow, Inc.) is regulated under Revised MRP 96-094.

Project Location

The Project Area is located within western Kern County in areas adjacent to the administrative boundaries of the South Belridge, Monument Junction, and Cymric Oil Fields. The area is identified as approximately fourteen square miles that include sections 13, 14, 23, 24, and the north three quarters of sections 25 and 26 of Township 29 South, Range 21 East, Mount Diablo Base and Meridian (MDB&M), and sections 16 through 21 and the north three quarters of sections 28 through 30 of Township 29 South, Range 22 East, MDB&M (See Figures 1 and 2).

Potential Alternatives

In preparation for the CEQA scoping meeting, the following potential alternatives have been identified to evaluate the MUN and AGR beneficial uses in the groundwater basin within the

Proposed De-Designation Area. These alternatives will be presented as a starting point for discussion at the public CEQA scoping meeting and should not be presumed to be the only available alternatives.

Alternatives for CEQA Scoping – De-designation of MUN Beneficial Use

1. No Action.
2. De-designate MUN Beneficial Use within the Project Area horizontal boundaries from the surface down, with no vertical de-designation boundary, where groundwater meets the Sources of Drinking Water Policy Exception 1a based on existing groundwater quality.
3. De-designate MUN Beneficial Use within the Project Area horizontal boundaries within specific depth zones where groundwater meets the Sources of Drinking Water Policy Exception 1a based on existing groundwater quality.
4. Development of MUN Site-Specific Salinity Water Quality Objectives within the Project Area boundaries. Site-specific water quality objectives must protect the beneficial uses of a water body and must be developed in accordance with all applicable laws and regulations based on sound scientific rationale and must be adopted by the Regional Board in a Basin Plan Amendment.

Alternatives for CEQA Scoping – De-designation of AGR Beneficial Use

1. No Action.
2. De-designate AGR Irrigation Supply and Livestock Watering Beneficial Uses within the Project Area horizontal boundaries from the surface down, with no vertical boundaries based on a groundwater quality salinity concentration threshold limit of 5,000 mg/L TDS.
3. De-designate AGR Irrigation Supply and Livestock Watering Beneficial Uses within the Project Area horizontal boundaries within specific depth zones based on a groundwater quality salinity concentration threshold limit of 5,000 mg/L TDS.
4. Development of AGR Site-Specific Salinity Water Quality Objectives within the Project Area boundaries for Irrigation Supply and Livestock Watering.

Potential Direct and Indirect Physical Environmental Effects

Implementation of the project, if de-designation is adopted and approved, would result in de-designation of MUN and AGR (agricultural irrigation and livestock watering) beneficial uses either with no specific vertical depths (e.g., from the ground surface down) or within specific vertical depth zones within the Project Area's horizontal boundaries.

Potential environmental effects that may occur as a result of this project include:

1. Increased salinity of groundwater within the Project Area.

Additionally, groundwater monitoring under the WDRs and MRPs will continue to be performed to evaluate whether discharges within the Project Area are impacting groundwater in areas outside of the Project Area boundaries.

References

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Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS). 2012. *Salinity Effects on Agricultural Irrigation-Related Uses of Water*. Draft White Paper prepared by CDM Smith. August.

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Figure 1 Project Area Location Map



FIGURE 1 PROJECT LOCATION MAP
Base map figure from AntelopeValley.org on Wikipedia

Figure 2 Project Area Map – With Upper Tulare Groundwater TDS Concentrations

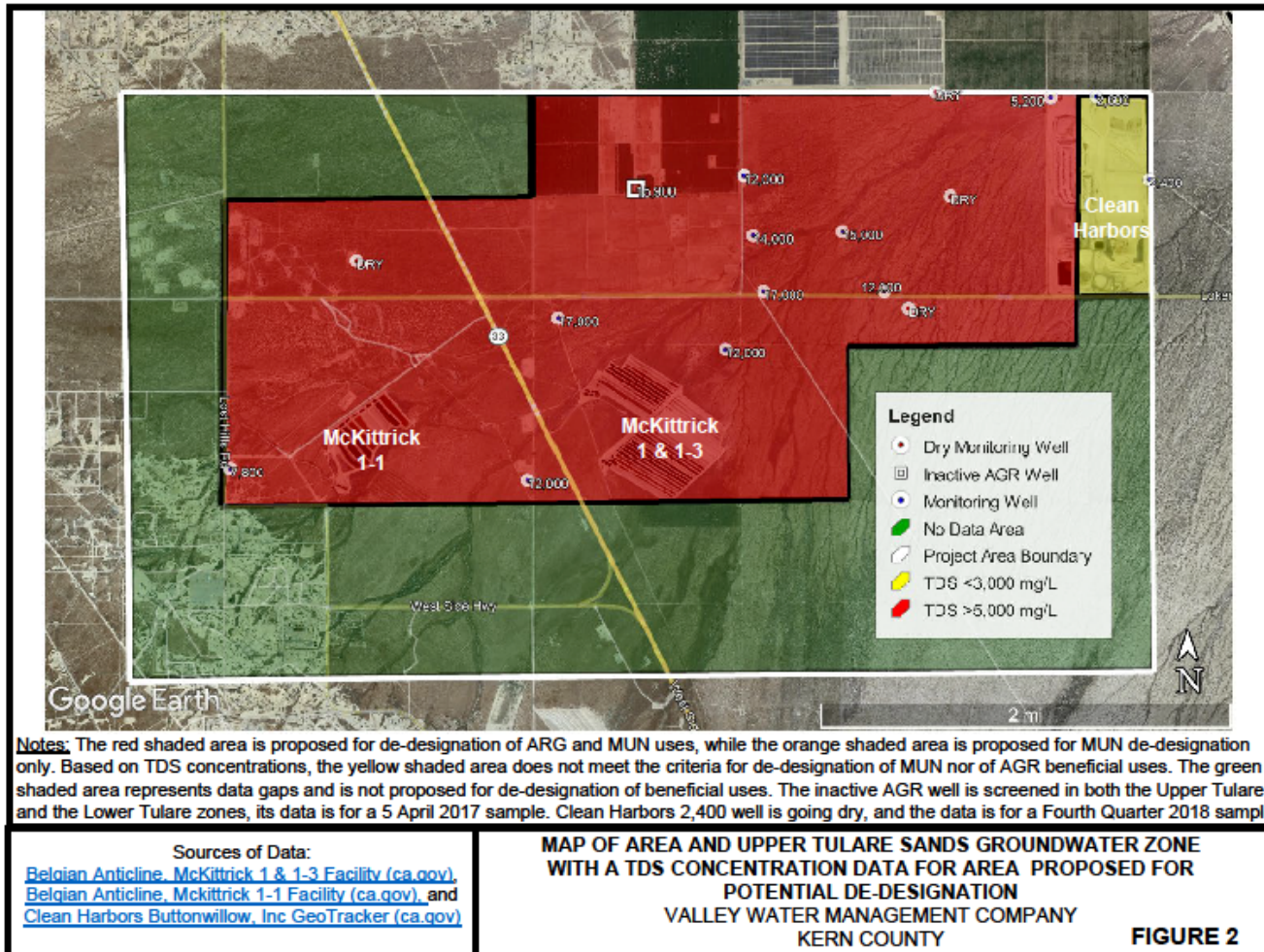


Figure 3 Project Area Map – With Lower Tulare Groundwater TDS Concentrations

