
State Water Resources Control Board

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Craig Altare
Supervising Engineering Geologist
Sustainable Groundwater Management Office
Department of Water Resources
craig.altare@water.ca.gov

CHOWCHILLA GROUNDWATER SUSTAINABILITY PLAN, GROUNDWATER SUBBASIN NO. 5-022.05

The State Water Resources Control Board (State Water Board) staff are providing these comments in support of the Department of Water Resources' (DWR) review of the Groundwater Sustainability Plan (GSP) for the Chowchilla Groundwater Subbasin (subbasin).

Our comments on the GSP focus on the following areas:

- Groundwater Levels and Potential Drinking Water Impacts
- Groundwater Quality
- Projects Reliant on New or Amended Water Rights
- Engagement

Groundwater Levels and Potential Drinking Water Impacts

1. The GSP does not describe how water levels at or near the measurable objectives (MOs) or minimum thresholds (MTs) may impact domestic wells, public water systems, other beneficial users, or land use and property interests, nor does it describe how these interests were considered in setting the MOs and MTs.

Appendix 3.C of the GSP includes an estimate of domestic wells that may fail at groundwater levels predicted to occur during implementation and through the sustainability period considering all projects and management actions; however, the GSP does not include a similar estimate of what degree of well failure from chronic

lowering of groundwater levels would constitute an undesirable result (as defined in the GSP). MTs were established based on historical groundwater levels and reasonable estimates of future groundwater levels with implementation of projects and management actions (pp. 3-26, 3-42), rather than groundwater conditions expected to significantly or unreasonably affect beneficial users of groundwater. Consideration of the effects of undesirable groundwater levels would provide useful information regarding whether the lowered levels indicate a significant and unreasonable depletion of supply. Section 3.3.1.4 describes possible impacts of declining groundwater levels to agricultural, domestic, and municipal uses or users generally (p. 3-29) but does not describe the potential effects of the specific MTs selected by the groundwater sustainability agencies (GSAs). Further concerns regarding the lack of consideration of beneficial users and uses are as follows:

- a. Hydrographs in Section 3 (Figures 3-3A & B, 3-4A & B) depict MTs in relation to average well perforation depths and average well depths of select Representative Monitoring Sites (RMSs), but this analysis does not provide any information regarding the wells below the average depth in relation to the MTs, which is concerning.
- b. Potential impacts the sustainable management criteria (SMC) would have on domestic and public water system wells are unclear, including impacts on wells within disadvantaged communities and severely disadvantaged communities (DACs and SDACs), and particularly those wells located within the more densely populated Eastern Management Area. [DWR's DAC mapping tool \(https://gjis.water.ca.gov/app/dacs/\)](https://gjis.water.ca.gov/app/dacs/) shows DACs and SDACs in the area.¹ The MTs defined for the RMSs in this area are all below the average depth of the domestic wells surrounding RMS well 10S/15E-1E1 as noted only in Figure 3-3A (p. 3-67). Moreover, because an undesirable result would only occur if water levels at more than 30 percent of RMSs decline below MTs for the same two consecutive fall readings (p. 3-42), localized water levels could drop far below MTs without triggering action by the GSAs. The analysis described above should consider the potential effects of an undesirable result on beneficial users of water, including DACs and SDACs in particular.

¹ Appendix 2.C states that 79 percent of the subbasin is designated as part of an SDAC and approximately 30 percent of the Subbasin (primarily in the northern and southern central parts of the Subbasins and also around the City of Chowchilla) is designated as part of a DAC.

2. Estimates of wells that may be affected at groundwater elevation MOs and MTs in Central Valley GSPs are publicly available.² These technical resources are available for consideration by the GSAs. State Water Board staff conducted its own analysis for the subbasin by comparing the depths of wells³ in DWR's Online System for Well Completion Reports (OSWCR) database to the MOs and MTs presented in the GSP for the subbasin. Staff also included comparison of MOs and MTs to the known extent and depth of the Corcoran Clay, as delineated by the U.S. Geological Survey, as a check on the appropriateness of SMC. This analysis excluded wells that were estimated to have already been dry in 2015.⁴ Given uncertainties in the OSWCR data, staff presents a range of values based on domestic and public water system well records with location and depth information. The lower bounds represent wells installed after 1991⁵ and the upper bounds represent all wells regardless of installation date. The results of this analysis are summarized below.

Above or outside the extent of the Corcoran Clay:

- Of 96 to 137 domestic wells, none are expected to go dry at MOs and 32 to 54 (33% to 39%) may go dry at MTs.
- Of 2 public supply wells, none are expected to go dry at MOs and one may go dry at MTs.

SMC appear to be set below the bottom of the Corcoran Clay in some areas in this analysis:

- Of 211 to 309 domestic wells, MOs are below 0 to 2 wells (<1%) and MTs are below 69 to 129 wells (33% to 42%).

If water levels are allowed to drop below the Corcoran Clay, this would result in the near-surface unconfined aquifer being completely dewatered in this area.

Additionally, subsidence could occur due to dewatering of the clays. The GSP

² See reports and analyses by [Pauloo, R., Bostic, D., Monaco, A. and Hammond, K., The Water Foundation](#) and [EKI](#); and [UC Davis Center for Regional Change](#)

³ Where available, staff used the bottom of the well screen to represent well depth; otherwise, staff used the bottom of the well.

⁴ Detailed methodology available upon request.

⁵ See discussion of well retirement age on page 12 of the [UC Davis Center for Regional Change's analysis](#).

should evaluate MTs set below the Corcoran Clay and consider whether the MTs are appropriate.

Note that this analysis assumed groundwater levels declining to MTs at all RMSs, whereas the GSP states an undesirable result would only occur if water levels at more than 30 percent of RMS wells fall below MTs for the same two consecutive fall readings; accordingly the GSP's definition of an undesirable result would allow for more wells to fail than described above.

State Water Board staff strongly recommends that the GSAs conduct an independent analysis of the potential impacts of proposed MOs and MTs and projected groundwater management outcomes on active domestic wells and public water supply wells, update the GSP with this information, and consider how those effects compare with the GSAs' definition of an undesirable result related to declining groundwater levels. Additionally, the GSAs should estimate and describe the population served by the wells in the subbasin which are not protected at MTs. In order to ensure that all necessary and relevant information is considered in the GSP the GSAs should engage domestic well users, public water systems and state small systems, and other stakeholders as part of both the analysis and the discussion of what constitutes an undesirable result.

3. If a reasonable conclusion, drawn from the GSAs' evaluation and projections, is that the proposed allowable decline in groundwater levels could constitute a significant and unreasonable depletion of supply, the GSAs should adjust MTs (and amend the analysis described in #2) or otherwise mitigate for impacts to wells. For mitigation, the GSAs could develop and implement a well mitigation plan that would lessen the significance of the impact by replacing or repairing domestic or drinking water system wells impacted by groundwater level declines as a project or management action. The GSAs could also support expansion of public water system boundaries to private well communities or consolidation of smaller drinking water systems dependent on at-risk wells with larger public water systems. Consolidation efforts may include: (1) providing financial assistance, particularly for low-cost intertie projects that are adjacent to larger systems; (2) working with County Planning agencies to ensure that communities served by at-risk wells are annexed into the service areas of larger water systems to limit barriers to future interties; and (3) facilitating outreach and introductions between small water systems and owners of domestic wells and larger water systems to assist in developing future partnerships.
4. In further developing the well mitigation program, the GSAs should describe specific success criteria for the program, with clear links to the both SMC and the GSAs' definitions of undesirable results. The GSAs should also (1) clearly identify who

qualifies as a “pumper” for fee assessments; and (2) develop an outreach program for all domestic well owners that outlines estimated impacts of the GSP and mitigation options. The outreach program should describe both how GSAs will reach out to well owners before water shortages occur as well as how well owners can report water supply shortages to the GSAs. Results of analysis and discussion as outlined in comment 3 above would provide better data in support of this option.

5. The GSP does not provide information about public supply systems (systems) and the populations they serve. The GSP does not identify systems with maximum contaminant load (MCL) violations and it does not describe the nature of consultation with system operators or how systems were engaged in the process of developing SMC or the GSP in general.
6. Parts of the GSP’s narrative definition of an undesirable result are vague, making it difficult to assess how well the proposed MTs represent groundwater conditions the GSAs plan to avoid. The GSP states that significant and unreasonable groundwater level declines occur when “...they are sufficient in magnitude to lower the rate of production of pre-existing domestic groundwater wells below that necessary to meet the minimum required to support overlying beneficial use(s) where alternative means of obtaining sufficient groundwater resources are not technically or financially feasible.” (p.3-22). The GSP should explain how the GSAs define the rate of production “necessary to meet the minimum required to support overlying beneficial use(s).” The GSP should also define and describe both (1) the possible alternative means and whether these are short term or long-term water supply solutions, and (2) technical and financial feasibility, particularly within the context of drinking water wells in DACs and SDACs.
7. The GSAs should develop a specific plan to fill data gaps for wells included in the RMS and monitoring networks. More specifically, the GSAs should determine the well screen depth for each RMS, and if the well screen depth cannot be determined from wells logs, determine the total depth, including for each RMS currently listed as unknown. This information is necessary to understand which aquifer the RMS represents. Board staff further notes that at least five RMSs are assigned an MT below the depth of the RMS well.⁶ The GSP should resolve this issue.
8. State Water Board staff appreciate that the GSP states, “GSAs in the Chowchilla Subbasin will work with the counties to ensure that future well permitting aligns with the subbasin sustainability goal established under this GSP” (section 2.1.3.4).

⁶ See Well IDs 9S/14E-27R1, 10S/15E-5J1, SJRRP_MW-10-89, SJRRP_MW-11-161, and SJRRP_MW-11-163 in Table 3-6.

However, the GSP lacks specific information regarding how the GSAs will evaluate new permits, address possible impacts from new permits, or work with the county to address concerns. As encouraged by the Sustainable Groundwater Management Act (SGMA), GSAs should request counties forward permit requests for new wells, for enlarging of existing wells, or for reactivation of abandoned wells (Water Code, § 10726.4.). Shifting demand to sites near existing wells may cause groundwater level declines and effects on beneficial users of water in areas of the subbasin not well represented by an RMS. Increased production from these wells may also make it more difficult for the GSAs to avoid undesirable results and achieve sustainability within the implementation period.

Groundwater Quality

9. The GSP states that only groundwater quality degradation caused by GSP implementation will constitute a MT exceedance contributing to an undesirable result but does not explain how causation will be assessed (p. 3-36). The GSP should outline the process the GSAs would use to decide whether GSP implementation caused or exacerbated an MT exceedance for water quality. In addition, the GSP should provide the data supporting its conclusions, which will allow reviewing regulatory bodies to consider how adequately the GSP addresses undesirable results related to water quality degradation. The GSAs should also coordinate and share the data with other local and regional groundwater monitoring efforts.
10. While data regarding 1,2,3-Trichloropropane (1,2,3-TCP) are relatively scarce in the subbasin, the contaminant appears to be a problem regionally. More than ten percent of wells in the subbasin for which there are data in the last ten years have registered exceedances of the Maximum Contaminant Level for 1,2,3-TCP. Groundwater pumping and projects and management actions under the GSAs' authority may also have the potential to influence groundwater concentrations and distributions of 1,2,3-TCP within the subbasin. State Water Board staff recommends the GSAs continue to evaluate available data on 1,2,3-TCP in future GSP updates. If data indicate the contaminant is relatively widespread in the subbasin, the GSAs should develop SMC for 1,2,3-TCP. Staff has attached a map from the [State Water Board Groundwater Ambient Monitoring and Assessment \(GAMA\) Program's database \(https://gamagroundwater.waterboards.ca.gov/\)](https://gamagroundwater.waterboards.ca.gov/) showing 1,2,3-TCP impacts in subbasin groundwater (Figure 1).

In deciding which water quality constituents to consider when setting SMC, a GSA should consider the best available water quality information for the basin, including data used to develop the hydrogeologic conceptual model, geochemistry of geological formations (for the potential of mobilization of natural constituents), and

groundwater uses in the vicinity of the RMS and the subbasin as a whole when determining which constituents to evaluate for MTs. Different constituents may cause undesirable degradation of water quality in different areas based on the purposes for which groundwater is beneficially used. Not all water quality impacts to groundwater must be addressed in the GSP but significant and unreasonable water quality degradation due to groundwater conditions occurring throughout the basin, and that were not present prior to January 1, 2015, must be addressed in the GSP's MTs. Both groundwater extraction and the implementation of projects to achieve sustainability may cause impacts from migration of contaminant plumes, changes in the concentration of contaminants due to reduction in the volume of water stored in the basin, or release of harmful naturally occurring constituents. A GSA should particularly consider whether any groundwater quality constituents in the basin may impact the state's policy of protecting the right of every human being to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes (Water Code, §106.3).

11. Please note that historical and recent water quality monitoring information from public water systems can be accessed using the public version of the State Water Board [Drinking Water Watch database \(https://sdwis.waterboards.ca.gov/PDWWW/\)](https://sdwis.waterboards.ca.gov/PDWWW/). The Drinking Water Watch database can be queried by public water system name or system number (see #14 below).

Projects Reliant on New or Amended Water Rights

12. Implementing some of the projects identified in the GSP may require new or amended water rights. If a project would rely on existing water rights, the GSAs should identify the water right identification numbers and other relevant details. It may be unreasonable for the GSP to assume that projects that currently lack adequate water rights for implementation can obtain either new water rights or modifications to existing water rights within a timeframe that will allow the project to contribute to the GSP achieving sustainability. For the GSP to demonstrate a likelihood of attaining the sustainability goal, the GSP should discuss the timing for obtaining approvals and describe any uncertainties, such as water availability in source streams (e.g., Will less surface water be available with projected Bay-Delta Plan implementation? Is the source on the inventory of fully appropriated streams? Can potential protests be anticipated from downstream water users?).
 - a. New surface water right permits: An applicant must gather all information necessary to complete the application; this could be extensive. Once the State Water Board publicly notices an application, other water right holders may protest the project based on potential injury to their water rights. Parties may also protest if the project has the potential to harm public trust resources. The

GSA's should contact the Division of Water Rights' Permitting and Licensing Division or consult the Division's [Permitting and Licensing Frequently Asked Questions \(https://www.waterboards.ca.gov/waterrights/water_issues/programs/applications/faqs.html\)](https://www.waterboards.ca.gov/waterrights/water_issues/programs/applications/faqs.html) to develop an informed timeline for project implementation that includes necessary water right actions.

- b. Amendment of an existing surface water right: The time required to amend an existing water right depends on multiple factors, including but not limited to whether the change is minor, major, or controversial. The GSA's can learn more from the Division of Water Rights' [Petitions Frequently Asked Questions \(https://www.waterboards.ca.gov/waterrights/water_issues/programs/petitions/faqs.html\)](https://www.waterboards.ca.gov/waterrights/water_issues/programs/petitions/faqs.html).
13. Given there is no certainty that a particular water right permit or petition will ultimately be approved, or when, it is important the GSP clarify proposed timelines for projects and management actions and consider how changes in those timelines could impact the subbasin's ability to achieve sustainability by 2040. The GSP should also identify alternative groundwater management strategies to achieve sustainability (e.g., demand reduction), if anticipated water supplies such as purchases or new or amended water rights are unsuccessful. This would ensure the GSA's can effectively evaluate when they should move towards implementing such contingency projects or management actions if primary projects or management actions are not implemented on projected timelines. To this end, the GSP should also identify well-developed demand management options with clearly defined triggers in the event that proposed supply augmentation volumes are not fully achieved. Staff appreciates the steps the Madera County GSA has already taken towards developing a demand management program. The GSP notes that the Madera County GSA will proportionally increase the level of demand management if its project yields are lower than expected. Staff recommends the Chowchilla Water District GSA, the County of Merced Chowchilla GSA, and the Triangle T Water District GSA also identify potential contingency projects or management actions for achieving sustainability if it is not possible to obtain new or amended water rights within the proposed timelines. If the GSA's intend to participate in the Madera County GSA's demand management program (p. 4-1), the GSP should describe the triggers for implementing this and the steps involved.

Engagement

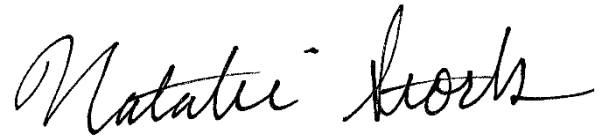
14. The GSA's should engage with all public water systems which rely on groundwater in the subbasin to ensure the GSP protects drinking water users. To facilitate this, State Water Board staff has attached a list of public water systems with wells in the

subbasin as of August, 2021. Please contact the Board's Division of Drinking Water at DDW-SAFER-NAU@waterboards.ca.gov with any questions.

15. The GSP should be more explicit about how the concerns of local beneficial users, particularly disadvantaged communities reliant on groundwater, and other stakeholders were integrated into development of SMC and monitoring networks and selection of RMS and projects and management actions. SGMA requires consideration of the interests of diverse social, cultural, and economic elements of the populations within the subbasin during plan development. Collaborative and inclusive processes can make plans more resilient by increasing buy-in and trust, improving compliance, and enhancing the quality of information on which plans are based. It is important that GSAs send appropriate notices; hold meetings in times, places, and manners that support effective engagement; and acknowledge issues raised. GSAs should consult with individuals or groups when actions may impose direct or indirect costs on those entities. Good governance can build trust and reduce regulatory compliance risks. Consultation, for example, could help a GSA avoid or mitigate an action that might directly or indirectly cause a drinking water system to violate its permit or face new compliance costs due to reduced availability of water or lower water quality.
16. It is unclear if the GSAs adequately considered the interests of Tribes in the subbasin. The GSP states that no Tribal representation was apparent at any of the outreach or consultation meetings during development of the GSP but does not clarify whether any Tribes with interests in groundwater management are present in the subbasin. The GSP also does not describe the GSAs' process for identifying or reaching out to Tribes with potential interests in groundwater management in the subbasin. Without this information, it is difficult to discern whether the GSAs appropriately considered the interests of California Native American Tribes in developing the GSP (Cal. Water Code, §10723.2, subd. (h)). The GSP should elaborate on the GSAs' Tribal engagement effort. If the GSAs have not already done so, the GSAs should consult with the Native American Heritage Commission (NAHC) to obtain information about Tribes that have current and ancestral ties in the subbasin. To request this information, the GSAs can email the NAHC at nahc@nahc.ca.gov.

If you have any questions regarding these comments, please do not hesitate to contact State Water Board Groundwater Management Program staff by email at SGMA@waterboards.ca.gov or by phone at 916-322-6508.

Sincerely,

A handwritten signature in black ink that reads "Natalie Stork". The signature is written in a cursive, flowing style.

Natalie Stork
Senior Engineering Geologist
Chief, Groundwater Management Program
Office of Research, Planning, and Performance

Enclosures: Appendix –Select constituents in Chowchilla Subbasin wells

Public water systems with wells in the Chowchilla Subbasin as of August, 2021 (see .xlsx attachment within PDF file)

Appendix –Select constituents in Chowchilla Subbasin wells

Non-detects are green, detections are yellow and orange, and MCL exceedances are red. Figures developed from [State Water Board Groundwater Ambient Monitoring and Assessment \(GAMA\) Program's database](https://gamagroundwater.waterboards.ca.gov/) (<https://gamagroundwater.waterboards.ca.gov/>)

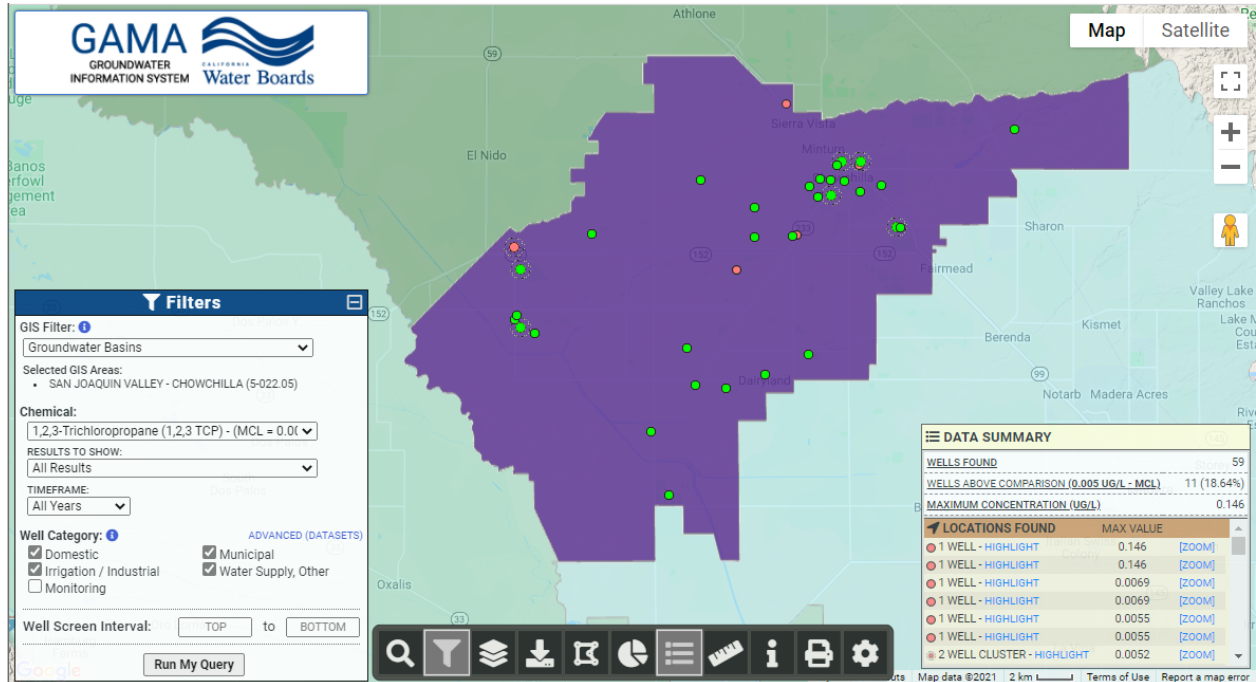


Figure 1. 1,2,3-Trichloropropane in Chowchilla Subbasin wells