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## State Water Resources Control Board

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### **EASTERN SAN JOAQUIN GROUNDWATER SUSTAINABILITY PLAN, GROUNDWATER SUBBASIN NO. 5-022.01**

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 Eastern San Joaquin Groundwater Subbasin (subbasin).

Our comments on the GSP focus on the following areas:

- Groundwater Levels and Potential Drinking Water Impacts
- Groundwater Quality
- Depletions of Interconnected Surface Water
- Water Budget
- Projects Reliant on New or Amended Water Rights
- Engagement

#### **Groundwater Levels and Potential Drinking Water Impacts**

1. The GSP notes that groundwater elevation minimum thresholds (MTs) are protective of approximately 90 percent of domestic wells. The GSP should also evaluate impacts to wells operated by non-municipal public water systems and state small systems, as smaller systems may have relatively shallow wells. State Water Board staff further recommends the Eastern San Joaquin Groundwater Authority (ESJGWA) quantify and describe the population served by the wells in the subbasin which are not protected at MTs, as this information is important to understanding the potential effects on drinking water users that may occur from undesirable

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results. Additionally, impacts to the population served by groundwater in the subbasin should be quantified. In order to ensure that all necessary and relevant information is considered in the GSP, the ESJGWA 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.

2. If a reasonable conclusion, drawn from the ESJGWA's evaluation and projections including the expanded analysis described in #1, is that the proposed allowable decline in groundwater levels could constitute a significant and unreasonable depletion of supply, the ESJGWA should adjust MTs (and amend the analysis described in #1) or otherwise mitigate for impacts to wells. For mitigation, the ESJGWA 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, supporting expansion of public water system boundaries to private well communities, and supporting consolidation of smaller drinking water systems dependent on at-risk wells with larger public water systems. This would involve identifying vulnerable areas where consolidation or extension of service is feasible. Consolidation efforts could 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.
3. The GSP states that dewatering of domestic wells may be an indication that an undesirable result is occurring in the subbasin and so may trigger reassessment of the adequacy of the methodology used to develop groundwater elevation MTs (p. 3-5). Given shallower domestic wells are often particularly vulnerable to dewatering from groundwater level declines, waiting until wells fail to reevaluate MTs could result in households losing access to their sole water supply. State Water Board staff strongly recommends that ESJGWA consider other, lower-impact methods for confirming the methodology used for developing MTs. Using the occurrence of a potential undesirable result to assess the adequacy of the methodology is overly risky, and opportunities to assess potential impacts to domestic wells before the wells are dewatered should be taken.

#### Groundwater Quality

4. For groundwater quality, the GSP identifies salinity, arsenic, and several point-source contaminants as water quality constituents of concern, but salinity (as total

dissolved solids [TDS]) is the only water quality constituent for which MTs and measurable objectives (MOs) are established in the subbasin. The GSP discusses monitoring nitrate and arsenic concentrations in addition to salinity but has no associated sustainable management criteria (SMC) for them. Groundwater pumping and projects and management actions under the ESJGWA's authority may have the potential to influence groundwater concentrations and distributions of widespread contaminants within the subbasin in addition to salinity. Based on their prevalence within the subbasin, GSP implementation should also include SMC for 1,2,3-trichloropropane (1,2,3-TCP), nitrate as nitrogen (nitrate), and arsenic.

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 representative monitoring sites (RMSs) and the basin 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). Coordination by the ESJGWA with agencies that oversee the remediation of existing groundwater contamination is highly recommended, both in setting MTs and developing a plan of implementation.

Staff has attached maps 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, nitrate, and arsenic impacts in subbasin groundwater (Figures 1, 2, and 3 in Appendix).

5. The GSP sets the MT concentrations for degraded water quality at 1000 milligrams per liter (mg/L) TDS and MO concentrations at 600 mg/L TDS at all representative monitoring well locations. For TDS in drinking water, the secondary maximum

contaminant level (SMCL) is 500 mg/L—the recommended maximum contaminant level—and the upper limit SMCL is 1,000mg/L.<sup>1</sup> Staff recommends that the GSP further discuss consideration of drinking water users in setting the GSP's water quality SMC.

6. The GSP should outline the process the ESJGWA 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 ESJGWA should also coordinate and share the data with other local and regional groundwater monitoring efforts.
7. 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 #15 below).
8. While the GSP describes well permitting processes in each applicable county, it lacks specific information regarding whether the GSAs will evaluate new permits, address possible impacts from new permits, or work with the county to address concerns. State Water Board staff recommends that GSAs work with county governments to encourage alignment between the GSP and county well permitting programs. 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.

#### Depletions of Interconnected Surface Water

9. The GSP identifies interconnected stream reaches through numerical modeling but does not quantify stream depletions. The GSP uses modeling results to make the case that depletions that may occur at the groundwater level MTs are not significant

<sup>1</sup> [California Code of Regulations, Title 22, Secondary Drinking Water Standards \(https://www.waterboards.ca.gov/drinking\\_water/certlic/drinkingwater/documents/ddw\\_secondary\\_standards.pdf\)](https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/ddw_secondary_standards.pdf)

and unreasonable by comparing the additional amount of annual depletions to total annual surface water outflow of the subbasin. This approach misses potential seasonal impacts of stream depletions. While the total annual surface water outflow is dominated by high flows from winter storms or spring and summer snowmelt, depletion impacts to surface water and environmental beneficial users are generally most severe at low flow conditions. The GSP Regulations require identification of interconnected surface water (ISW) systems within the subbasin and monitoring of surface water and groundwater, and where ISW conditions exist, to characterize the spatial and temporal exchanges between surface water and groundwater (Cal. Code Regs., tit. 23, § 354.34, subd. (c)(6)). Staff recommends the ESJGWA develop a plan to estimate the quantity of stream depletions, perform more detailed analysis of impacts to beneficial users based on the results, improve model accuracy by filling data gaps in the future, and assess what level of depletions would be significant and unreasonable given the analysis.

10. The GSP uses the groundwater elevation MTs developed to manage for decreasing groundwater levels as a proxy to also manage depletions of ISW in the subbasin; however, the GSP does not draw a direct link between the SMC for declining groundwater levels and undesirable results related to depletions of ISW. Instead, the GSP assumes that reservoir operations would ensure minimum flows for aquatic species, regardless of any increases in stream depletions from declining groundwater levels (p. 3-21, para. 4). This approach overlooks other possible effects of groundwater depletions, including the effects on surface water beneficial users of increased releases from Camanche Reservoir, Woodbridge Dam, and New Melones Reservoir to compensate for additional depletions in maintaining minimum flows. The approach also ignores possible effects on aquatic species if depletions result in warmer water temperatures (due to reduced discharge of lower temperature groundwater) or longer periods of minimum flows each summer/fall. State Water Board staff recommends that shallow groundwater level MTs for depletions of ISW be supported by considerations of the locations, quantity, and timing of depletions and impacts to beneficial users.
11. The GSP does not present locations of existing stream gages and does not include stream gages in the proposed monitoring network for depletions of ISW. Staff recommends the ESJGWA update the GSP with stream gage information and monitoring.

#### Water Budget

12. The GSP does not consider the potential changes caused by implementation of the State Water Board's Substitute Environmental Document (SED) for the State Water Board's 2018 Lower San Joaquin River and Southern Delta update to the Water

Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan).<sup>2</sup> The Bay-Delta Plan update revised water quality objectives to protect fish and wildlife beneficial users, including in the three major eastside tributaries to the Lower San Joaquin River, the Stanislaus, Tuolumne, and Merced Rivers. Compliance with flow requirements along the Stanislaus River may lead to changes in surface water diversions and groundwater pumping. Because the GSP is required to use a 50-year planning horizon, staff recommends the ESJGWA incorporate strategies in the GSP that anticipate potential changes to the subbasin-wide water budget from Bay-Delta Plan implementation.

### Projects Reliant on New or Amended Water Rights

13. 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: The applicant must gather all information necessary to complete the application; this could be extensive. Once the State Water Board publicly notices the 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 ESJGWA 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.

<sup>2</sup> Final Substitute Environmental Document in Support of Potential Changes to the Water Quality Control Plan for the San Francisco Bay-Sacramento San Joaquin Delta Estuary, San Joaquin River Flows and Southern Delta Water Quality (July 2018).

- 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 ESJGWA 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).
14. 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 ESJGWA can effectively evaluate when it 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.

### Engagement

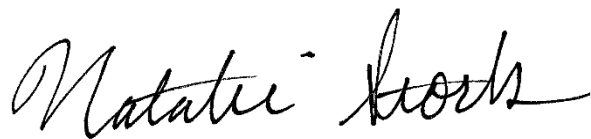
15. The ESJGWA should engage with all public water systems which rely on groundwater in the subbasin to ensure the GSP protects drinking water users. To facilitate this, State Water Board staff has attached a list of public water systems with wells in the subbasin as of August, 2021. Please contact the Board's Division of Drinking Water at [DDW-SAFER-NAU@waterboards.ca.gov](mailto:DDW-SAFER-NAU@waterboards.ca.gov) with any questions.
16. The GSP is not 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. The Sustainable Groundwater Management Act 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 ESJGWA send appropriate notices; hold meetings in times, places, and manners that support effective engagement; and acknowledge issues raised. ESJGWA 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.

17. The GSP identifies disadvantaged and severely disadvantaged communities (DACs and SDACs) and California Native American Tribes as beneficial users in the subbasin; however, the GSP does not describe how the ESJGWA appropriately considered the interests of DACs, SDACs, and California Native American Tribes in their plan development. The GSP should elaborate on the ESJGWA's DAC and tribal engagement efforts. If the ESJGWA has not already done so, the ESJGWA 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 ESJGWA can email the NAHC at [nahc@nahc.ca.gov](mailto: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](mailto:SGMA@waterboards.ca.gov) or by phone at 916-322-6508.

Sincerely,



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Office of Research, Planning, and Performance

Enclosures: Select constituents in Eastern San Joaquin Subbasin wells

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



## Appendix – Select constituents in Eastern San Joaquin 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/>)

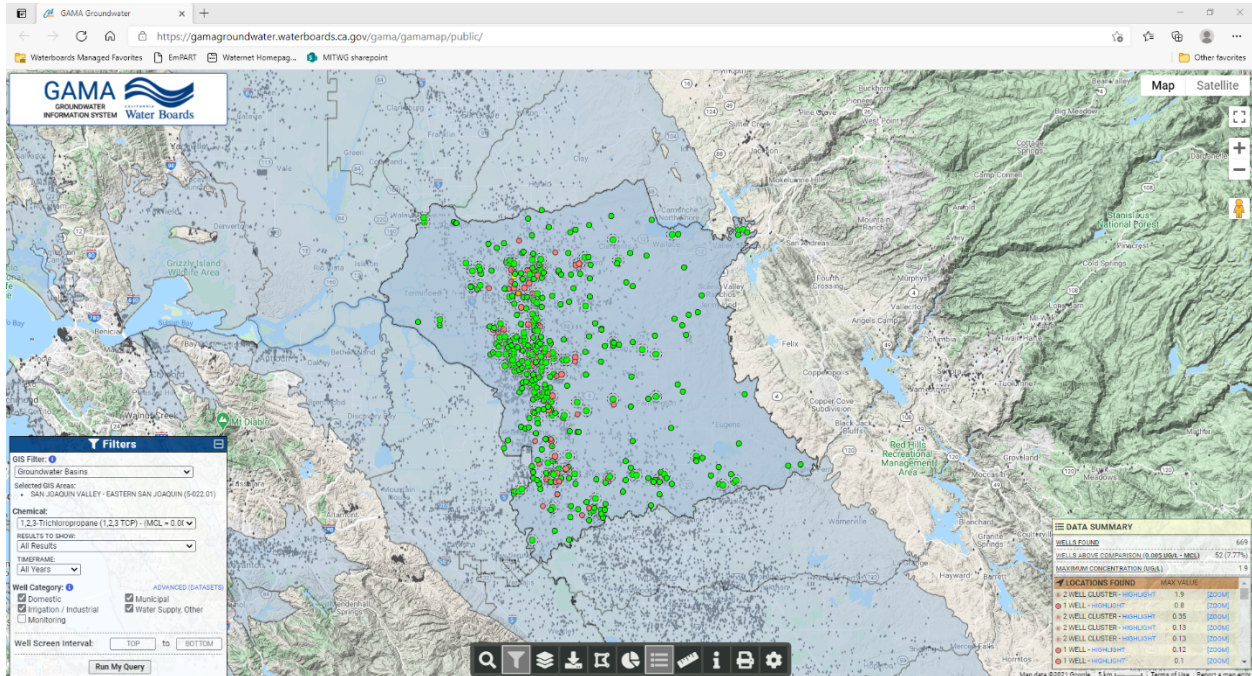


Figure 1. 1,2,3-Trichloropropane Eastern San Joaquin Subbasin wells

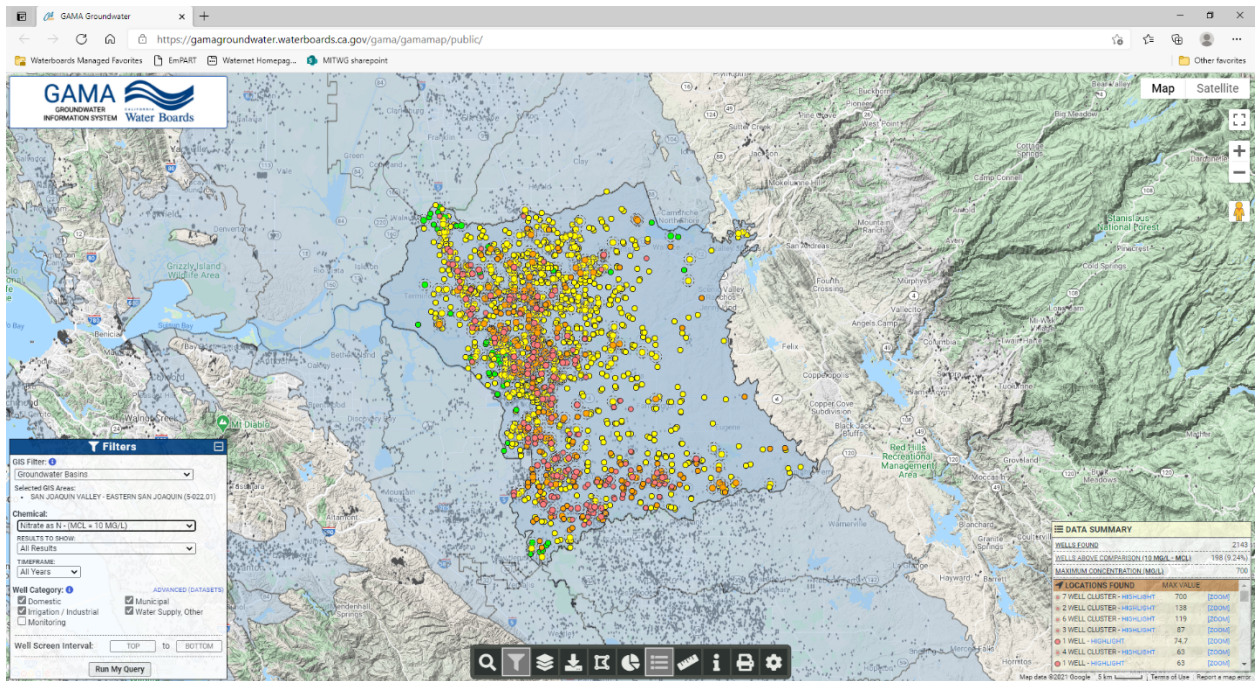


Figure 2. Nitrate as N in Eastern San Joaquin Subbasin wells

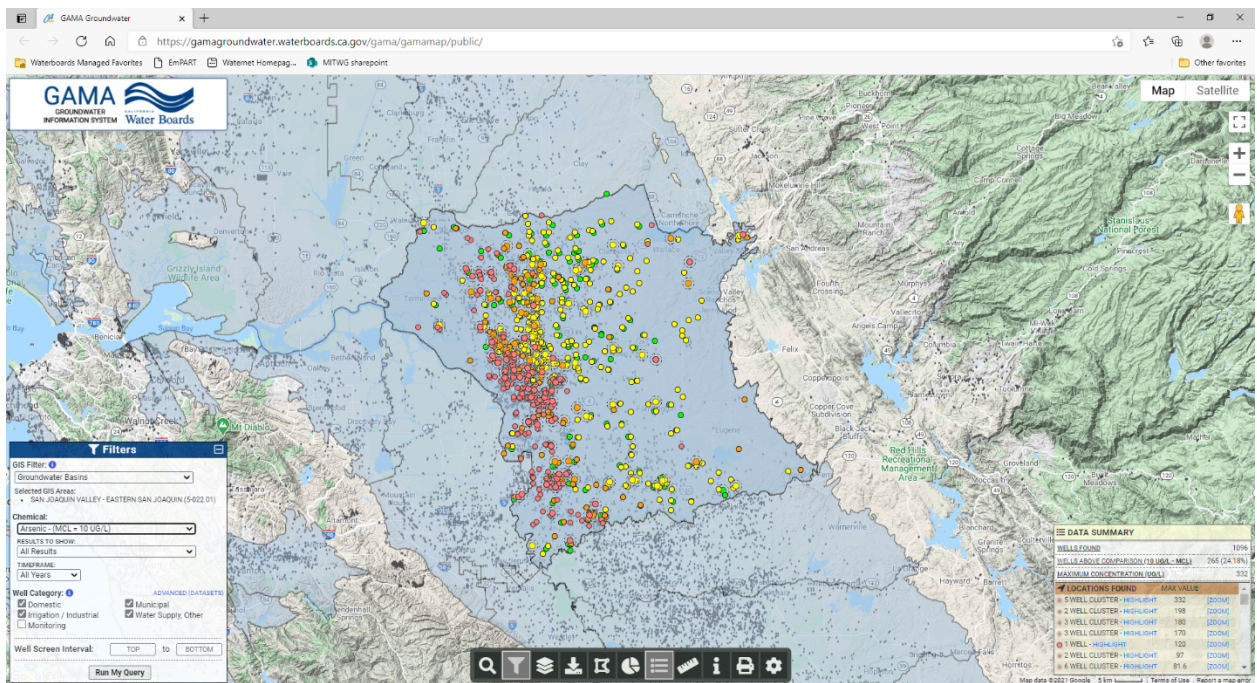


Figure 3. Arsenic in Eastern San Joaquin Subbasin wells