CALIFORNIA DEPARTMENT OF WATER RESOURCES
SUSTAINABLE GROUNDWATER MANAGEMENT OFFICE
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January 21, 2022

Taylor Blakslee
Groundwater Sustainability Agency Project Coordinator
4900 California Ave, Tower B, 2nd Floor
Bakersfield, CA 93309
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RE: “Incomplete” Determination of the 2020 Cuyama Valley Basin Groundwater Sustainability Plan

Dear Taylor Blakslee,

The Department of Water Resources (Department) has evaluated the groundwater sustainability plan (GSP) submitted for the Cuyama Valley Basin (Basin) and has determined that the GSP is “Incomplete”. The Department based its determination on recommendations from the Staff Report, included as an enclosure to the attached Statement of Findings, which describes that the Cuyama Valley Basin GSP does not satisfy the objectives of the Sustainable Groundwater Management Act (SGMA) nor substantially comply with the GSP Regulations. The Staff Report also provides corrective actions which the Department recommends to address the identified deficiencies.

The Basin’s Groundwater Sustainability Agency (GSA) has 180 days, the maximum allowed by GSP Regulations, to address the identified deficiencies. Where addressing the deficiencies requires modification of the GSP, the GSA must adopt those modifications into the Basin’s GSP or otherwise demonstrate that those modifications are part of the GSP before resubmitting it to the Department for evaluation no later than July 20, 2022. The Department understands that much work has occurred to advance sustainable groundwater management since the GSA submitted the GSP in January 2020. To the extent to which those efforts are related or responsive to the Department’s identified deficiencies, we encourage you to document that as part of your resubmittal. The Department prepared a Frequently Asked Questions document to provide general information and guidance on the process of addressing deficiencies in an “Incomplete” Determination.

Department staff will work expeditiously to review the revised components of your GSP resubmittal. If the revisions address the identified deficiencies, the Department will determine that the GSP is “Approved”. In that scenario, Department staff will identify additional recommended corrective actions that the GSA should address early in implementing their GSP (i.e., no later than the first required periodic evaluation). Among other items, those recommendations will include for the GSA to provide more detail on their plans and schedules to address data gaps. Those recommendations will also call for significantly expanded documentation of the plans and schedules to implement specific projects and management actions. Regardless of those recommended corrective actions, the Department expects the first periodic evaluations, required no later than January 2025 – one-quarter of the way through the

20-year implementation period – to document significant progress toward achieving sustainable groundwater management.

If the GSA cannot address the deficiencies identified in this letter by July 20, 2022, then the Department, after consultation with the State Water Resources Control Board, will determine the GSP to be "Inadequate". In that scenario, the State Water Resources Control Board may identify additional deficiencies that the GSA would need to address in the state intervention processes outlined in SGMA.

Please contact Sustainable Groundwater Management staff by emailing sgmps@water.ca.gov if you have any questions about the Department's assessment, implementation of your GSP, or to arrange a meeting with the Department.

Thank You,

Paul Gosselin

Paul Gosselin
Deputy Director of Sustainable Groundwater Management

Attachment:

1. Statement of Findings Regarding the Determination of Incomplete Status of the Cuyama Valley Basin Groundwater Sustainability Plan

STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

STATEMENT OF FINDINGS REGARDING THE DETERMINATION OF INCOMPLETE STATUS OF THE CUYAMA VALLEY BASIN GROUNDWATER SUSTAINABILITY PLAN

The Department of Water Resources (Department) is required to evaluate whether a submitted groundwater sustainability plan (GSP or Plan) conforms to specific requirements of the Sustainable Groundwater Management Act (SGMA or Act), is likely to achieve the sustainability goal for the basin covered by the Plan, and whether the Plan adversely affects the ability of an adjacent basin to implement its GSP or impedes achievement of sustainability goals in an adjacent basin. (Water Code § 10733.) The Department is directed to issue an assessment of the Plan within two years of its submission. (Water Code § 10733.4.) This Statement of Findings explains the Department's decision regarding the Plan submitted by the Cuyama Basin Groundwater Sustainability Agency (GSA) for the Cuyama Valley Basin (No. 3-013).

Department management has reviewed the enclosed Staff Report, which recommends that the identified deficiencies should preclude approval of the GSP. Based on its review of the Staff Report, Department management is satisfied that staff have conducted a thorough evaluation and assessment of the Plan and concurs with, and hereby adopts, staff's recommendation and all the corrective actions provided. The Department thus deems the Plan incomplete based on the Staff Report and the findings contained herein.

A. The GSP lacks justification for the sustainable management criteria for groundwater levels, particularly the minimum thresholds and undesirable results, and an explanation of the effects of those criteria on the interests of beneficial uses and users of groundwater.

    1. The GSP does not discuss, or appear to address, the specific significant and unreasonable effects caused by chronic lowering of groundwater levels that would constitute undesirable results. In the absence of a specific explanation of those effects, and the conditions that would cause those effects, the GSP states that an undesirable result would occur if groundwater level minimum thresholds are exceeded in 30 percent of monitoring wells for two consecutive years. The Department cannot assess the reasonableness of the whether the quantitative, 30-percent definition would avoid undesirable results because the GSAs have not defined the specific conditions that would be significant and unreasonable.

    2. The GSP lacks explanation of the justification for setting its site-specific minimum thresholds and also lacks explanation of the anticipated effects

of groundwater conditions at those thresholds on the interests of the beneficial uses and users of groundwater.

B. The GSP does not reasonably describe how groundwater levels will be used as a proxy to monitor for, and avoid, undesirable results associated with depletion of interconnected surface water. The GSP uses levels established for the chronic lowering of groundwater levels sustainability indicator in representative wells across the entire basin, regardless of proximity to rivers and tributaries, as a proxy for depletion of interconnected surface water. The GSP does not demonstrate, with adequate evidence, that the groundwater level thresholds are a reasonable proxy for the rate or volume of surface water depletions caused by groundwater use that has adverse impacts on beneficial uses of the surface water and may lead to undesirable results.

C. The GSP does not appear to fully address degraded water quality. Public comments received by the Department suggest that the GSA did not consider certain publicly available water quality data. The Department finds that there is a reasonable likelihood that consideration of that data could lead the GSA to alter their assessment of groundwater quality, including the need to develop monitoring programs and sustainable management criteria.

D. The GSP does not provide sufficient explanation for how overdraft will be mitigated in the basin. Two primary management areas are identified by the GSA to continue experiencing declines in groundwater in storage, but the GSA only intends to reduce groundwater pumping in one of those management areas. The GSP does not explain how continued overdraft in the remaining management area would be mitigated through projects and actions. Additionally, an area of the basin that was not identified as a management area (the Northwestern threshold region) was, nonetheless, projected to experience more than 140 feet of groundwater level decline, relative to 2015, during implementation of the GSP. The GSP did not describe how the apparently allowable overdraft in this region would affect beneficial uses and users of groundwater and avoid undesirable results.

Based on the above, the GSP submitted by the GSA for the Cuyama Valley Basin is determined to be incomplete because the GSP does not satisfy the requirements of SGMA, nor does it substantially comply with the GSP Regulations. The corrective actions provided in the Staff Report are intended to address the deficiencies that, at this time, preclude approval. The GSA has up to 180 days to address the deficiencies outlined above and detailed in the Staff Report. Once the GSA resubmits its Plan, the Department will review the revised GSP to evaluate whether the deficiencies were adequately addressed. Should the GSA fail to take sufficient actions to correct the deficiencies identified by the Department in this assessment, the Department shall disapprove the Plan if, after consultation with the State Water Resources Control Board, the Department determines the Plan inadequate pursuant to 23 CCR § 355.2(e)(3)(C).

Signed:

Karla Nemeth, Director

Date: January 21, 2022

Enclosure: Groundwater Sustainability Plan Assessment Staff Report – Cuyama Valley Basin

State of California
Department of Water Resources
Sustainable Groundwater Management Program
Groundwater Sustainability Plan Assessment Staff Report

Groundwater Basin Name:	Cuyama Valley Basin (No. 3-013)
Submitting Agency:	Cuyama Basin Groundwater Sustainability Agency
Recommendation:	Incomplete
Date:	January 21, 2022

The Sustainable Groundwater Management Act (SGMA)[1] allows for any of the three following planning scenarios: a single groundwater sustainability plan (GSP) developed and implemented by a single groundwater sustainability agency (GSA); a single GSP developed and implemented by multiple GSAs; and multiple GSPs implemented by multiple GSAs and coordinated pursuant to a single coordination agreement.[2] Here, as presented in this staff report, a single GSP covering the entire basin was adopted and submitted to the Department of Water Resources (Department) for review.[3]

The Cuyama Basin GSA submitted the Cuyama Valley Basin Groundwater Sustainability Plan (GSP or Plan) to the Department for evaluation and assessment as required by SGMA and the GSP Regulations.[4] The GSP covers the entire Cuyama Valley Basin (Cuyama Basin or Basin) for the implementation of SGMA.

Evaluation and assessment by the Department is based on whether the adopted and submitted GSP, either individually or in coordination with other adopted and submitted GSPs, complies with SGMA and substantially complies with GSP Regulations. Department staff base their assessment on information submitted as part of an adopted GSP, public comments submitted to the Department, and other materials, data, and reports that are relevant to conducting a thorough assessment. Department staff have evaluated the Cuyama Basin GSP and have identified deficiencies that staff recommend should preclude its approval.[5] In addition, consistent with the GSP Regulations, Department staff have provided corrective actions[6] that the GSA should review while determining how and whether to address the deficiencies. The deficiencies and corrective actions are explained in greater detail in Section 3 of this staff report and are generally related to the need to justify the established sustainable management criteria and the

[1] Water Code § 10720 *et seq*.
[2] Water Code § 10727.
[3] Water Code §§ 10727(b)(1), 10733.4; 23 CCR § 355.2.
[4] 23 CCR § 350 *et seq*.
[5] 23 CCR §355.2(e)(2).
[6] 23 CCR §355.2(e)(2)(B).

effects of those criteria on the beneficial uses and users in the manner required by SGMA and the GSP Regulations.

This assessment includes four sections:

- **Section 1 – Evaluation Criteria:** Describes the legislative requirements and the Department's evaluation criteria.
- **Section 2 – Required Conditions:** Describes the submission requirements, Plan completeness, and basin coverage required for a GSP to be evaluated by the Department.
- **Section 3 – Plan Evaluation:** Provides a detailed assessment of deficiencies identified in the GSP which may be capable of being corrected by the GSA. Consistent with the GSP Regulations, Department staff have provided corrective actions for the GSA to address the deficiencies.
- **Section 4 – Staff Recommendation:** Provides the recommendation of Department staff regarding the Department's determination.

1 EVALUATION CRITERIA

The Department evaluates whether a GSP conforms to the statutory requirements of SGMA[7] and is likely to achieve the basin's sustainability goal.[8] To achieve the sustainability goal, the GSP must demonstrate that implementation of its groundwater sustainability program will lead to sustainable groundwater management, which means the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results.[9] Undesirable results are required to be defined quantitatively by the GSAs overlying a basin and occur when significant and unreasonable effects for any of the applicable sustainability indicators are caused by groundwater conditions occurring throughout the basin.6[10] The Department is also required to evaluate whether the GSP will adversely affect the ability of an adjacent basin to implement its groundwater sustainability program or achieve its sustainability goal.[11]

To evaluate a GSP, the Department must first determine a GSP was submitted by the statutory deadline,[12] is complete,[13] and covers the entire basin.[14] For those GSAs choosing to develop multiple GSPs, the GSPs must be coordinated pursuant to a single coordination agreement that covers the entire basin.[15] If these conditions are satisfied, the Department evaluates the GSP to determine whether it complies with SGMA and substantially complies with the GSP Regulations.[16] As stated in the GSP Regulations, "[s]ubstantial compliance means that the supporting information is sufficiently detailed and the analyses sufficiently thorough and reasonable, in the judgment of the Department, to evaluate the Plan, and the Department determines that any discrepancy would not materially affect the ability of the Agency to achieve the sustainability goal for the basin, or the ability of the Department to evaluate the likelihood of the Plan to attain that goal."[17]

When evaluating whether implementation of the GSP is likely to achieve the sustainability goal for the basin, Department staff review the information provided and relied upon in the GSP for sufficiency, credibility, and consistency with scientific and engineering professional standards of practice.[18] The Department's review considers whether there is a reasonable relationship between the information provided by the GSA and the

[7] Water Code §§ 10727.2, 10727.4.
[8] Water Code §§ 10733(a).
[9] Water Code § 10721(v).
[10] 23 CCR § 354.26 *et seq*.
[11] Water Code § 10733(c).
[12] Water Code § 10720.7; 23 CCR § 355.4(a)(1).
[13] 23 CCR §§ 355.4(a)(2).
[14] 23 CCR § 355.4(a)(3).
[15] Water Code §§ 10727(b)(3), 10727.6; 23 CCR § 357.4.
[16] 23 CCR § 350 *et seq*.
[17] 23 CCR § 355.4(b).
[18] 23 CCR § 351(h).

assumptions and conclusions presented in the GSP, including whether the interests of the beneficial uses and users of groundwater in the basin have been considered; whether sustainable management criteria and projects and management actions described in the GSP are commensurate with the level of understanding of the basin setting; and whether those projects and management actions are feasible and likely to prevent undesirable results.[19] The Department also considers whether the GSA has the legal authority and financial resources necessary to implement the GSP.[20]

To the extent that overdraft is present in a basin, the Department evaluates whether the GSP provides a reasonable assessment of the overdraft and includes reasonable means to mitigate it.[21] When applicable, the Department will assess whether coordination agreements have been adopted by all relevant parties and satisfy the requirements of SGMA and the GSP Regulations.[22] The Department also considers whether the GSP provides reasonable measures and schedules to eliminate identified data gaps.[23] Lastly, the Department's review considers the comments submitted on the GSP and evaluates whether the GSA adequately responded to the comments that raise credible technical or policy issues with the GSP.[24]

The Department is required to evaluate the GSP within two years of its submittal date and issue a written assessment.[25] The assessment is required to include a determination of the GSP's status.[26] The GSP Regulations provide three options for determining the status of a GSP: approved,[27] incomplete,[28] or inadequate.[29]

After review of the GSP, Department staff may find that the information provided is not sufficiently detailed, or the analyses not sufficiently thorough and reasonable, to evaluate whether the GSP is likely to achieve the sustainability goal for the basin. If the Department determines the deficiencies precluding approval may be capable of being corrected by the GSA in a timely manner,[30] the Department will determine the status of the GSP to be incomplete. A formerly deemed incomplete GSP may be resubmitted to the Department for reevaluation after all deficiencies have been addressed by the GSA within 180 days after the Department makes its incomplete determination. The Department will review the revised GSP to evaluate whether the identified deficiencies were sufficiently addressed. Depending on the outcome of that evaluation, the Department may determine the resubmitted GSP is approved. Alternatively, the Department may find a formerly deemed

[19] 23 CCR §§ 355.4(b)(1), (3), (4) and (5).
[20] 23 CCR § 355.4(b)(9).
[21] 23 CCR § 355.4(b)(6).
[22] 23 CCR § 355.4(b)(8).
[23] 23 CCR § 355.4(b)(2).
[24] 23 CCR § 355.4(b)(10).
[25] Water Code § 10733.4(d); 23 CCR § 355.2(e).
[26] Water Code § 10733.4(d); 23 CCR § 355.2(e).
[27] 23 CCR § 355.2(e)(1).
[28] 23 CCR § 355.2(e)(2).
[29] 23 CCR § 355.2(e)(3).
[30] 23 CCR § 355.2 (e)(2)(B)(i).

incomplete GSP is inadequate if, after consultation with the State Water Resources Control Board, it determines that the GSA has not taken sufficient actions to correct any identified deficiencies.[31]

Even when the Department determines a GSP is approved, indicating that it satisfies the requirements of SGMA and is in substantial compliance with the GSP Regulations, the Department may still recommend corrective actions.[32] Recommended corrective actions are intended to facilitate progress in achieving the sustainability goal within the basin and the Department's future evaluations, and to allow the Department to better evaluate whether implementation of the GSP adversely affects adjacent basins. While the issues addressed by the recommended corrective actions in an approved GSP do not, at the time the determination was made, preclude its approval, the Department recommends that the issues be addressed to ensure the GSP's implementation continues to be consistent with SGMA and the Department is able to assess progress in achieving the basin's sustainability goal.[33] Unless otherwise noted, the Department proposes that recommended corrective actions be addressed by the submission date for the first five-year assessment.[34]

The staff assessment of the GSP involves the review of information presented by the GSA, including models and assumptions, and an evaluation of that information based on scientific reasonableness. In conducting its assessment, the Department does not recalculate or reevaluate technical information provided in the GSP or perform its own geologic or engineering analysis of that information. The recommendation to approve a GSP does not signify that Department staff, were they to exercise the professional judgment required to develop a GSP for the basin, would make the same assumptions and interpretations as those contained in the GSP, but simply that Department staff have determined that the assumptions and interpretations relied upon by the submitting GSA are supported by adequate, credible evidence, and are scientifically reasonable.

Lastly, the Department's review of an approved GSP is a continual process. Both SGMA and the GSP Regulations provide the Department with the ongoing authority and duty to review the implementation of the GSP.[35] Also, GSAs have an ongoing duty to reassess their GSPs, provide annual reports to the Department and, when necessary, update or amend their GSPs.[36] The passage of time or new information may make what is reasonable and feasible at the time of this review to not be so in the future. The emphasis of the Department's periodic reviews will be to assess the progress toward achieving the sustainability goal for the basin and whether GSP implementation adversely affects the ability of adjacent basins to achieve its sustainability goals.

[31] 23 CCR § 355.2 (e)(3)(C).
[32] Water Code § 10733.4(d).
[33] Water Code § 10733.8.
[34] 23 CCR § 356.4.
[35] Water Code § 10733.8; 23 CCR § 355.6 *et seq*.
[36] Water Code §§ 10728 *et seq.*, 10728.2.

2 REQUIRED CONDITIONS

A GSP, to be evaluated by the Department, must be submitted within the applicable statutory deadline.[37] The GSP must also be complete and must, either on its own or in coordination with other GSPs, cover the entire basin. If a GSP is determined to be incomplete, Department staff may require corrective actions that address minor or potentially significant deficiencies identified in the GSP. The GSAs in a basin, whether developing a single GSP covering the basin or multiple GSPs, must sufficiently address those required corrective actions within the time provided, not to exceed 180 days, for the GSP to be reevaluated by the Department and potentially approved.

2.1 SUBMISSION DEADLINE

SGMA required basins categorized as high- or medium-priority as of January 1, 2017 and that were subject to critical conditions of overdraft to submit a GSP no later than January 31, 2020.[38]

The GSA submitted the Cuyama GSP on January 28, 2020, in compliance with the statutory deadline.

2.2 COMPLETENESS

GSP Regulations specify that the Department shall evaluate a GSP if that GSP is complete and includes the information required by SGMA and the GSP Regulations.[39]

The GSA submitted an adopted GSP for the entire Cuyama Basin. Department staff found the GSP to be complete and include the required information, sufficient to warrant an evaluation by the Department. The Department posted the GSP to its website on January 31, 2020.

2.3 BASIN COVERAGE

A GSP, either on its own or in coordination with other GSPs, must cover the entire basin.[40] A GSP that intends to cover the entire basin may be presumed to do so if the basin is fully contained within the jurisdictional boundaries of the submitting GSAs.

The GSP intends to manage the entire Cuyama Basin, and the jurisdictional boundary of the submitting GSA covers the Basin.

[37] Water Code § 10720.7.
[38] Water Code § 10720.7(a)(1).
[39] 23 CCR § 355.4(a)(2).
[40] Water Code § 10727(b); 23 CCR § 355.4(a)(3)

3 PLAN EVALUATION

As stated in Section 355.4 of the GSP Regulations, a basin "shall be sustainably managed within 20 years of the applicable statutory deadline consistent with the objectives of the Act." The Department's assessment is based on a number of related factors including whether the elements of a GSP were developed in the manner required by the GSP Regulations, whether the GSP was developed using appropriate data and methodologies and whether its conclusions are scientifically reasonable, and whether the GSP, through the implementation of clearly defined and technically feasible projects and management actions, is likely to achieve a tenable sustainability goal for the basin.

Department staff have identified deficiencies in the GSP, the most serious of which preclude staff from recommending approval of the GSP at this time. Department staff believe the GSAs may be able to correct the identified deficiencies within 180 days. Consistent with the GSP Regulations, Department staff are providing corrective actions related to the deficiencies, detailed below, including the general regulatory background, the specific deficiency identified in the GSP, and the specific actions to address the deficiency.

Following receipt of a letter regarding potential deficiencies and corrective actions issued by the Department on June 3, 2021, the Cuyama Basin GSA submitted a Technical Memorandum (Tech Memo) to the Department on November 5, 2021. Although the Tech Memo states that the "memorandum is intended to supplement the Cuyama Basin GSP that was submitted in January 2020 and fill potential gaps identified in the Letter provided by DWR," Department staff are unclear whether the Tech Memo is part of the GSP because no description of the process to incorporate the Tech Memo into the GSP was provided to the Department. Therefore, while Department staff acknowledge the steps taken by the GSA to begin to address deficiencies, the content provided in the Tech Memo is not incorporated into this assessment of the GSP submitted to the Department for review.

3.1 DEFICIENCY 1. THE GSP LACKS JUSTIFICATION FOR, AND EFFECTS ASSOCIATED WITH, THE SUSTAINABLE MANAGEMENT CRITERIA FOR GROUNDWATER LEVELS.

3.1.1 Background

SGMA defines sustainable groundwater management as the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results.[41] The avoidance of undesirable results is thus explicitly part of sustainable groundwater management, as established by SGMA, and critical to the success of a GSP. To achieve sustainable groundwater management

[41] Water Code § 10721(v).

under SGMA, the basin must experience no undesirable results by the end of the 20-year GSP implementation period and be able to demonstrate an ability to maintain those defined sustainable conditions over the 50-year planning and implementation horizon.

The definition of undesirable results is thus critical to the establishment of an objective method to define and measure sustainability for a basin. As an initial matter, SGMA provides a qualitative definition of undesirable results as "one or more" of six specific "effects caused by groundwater conditions occurring throughout the basin."[42] SGMA identifies the effects related to chronic lowering of groundwater levels as those "…indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon."

It is up to GSAs to define, in their GSPs, the specific significant and unreasonable effects that would constitute undesirable results and to define the groundwater conditions that would produce those results in their basins.[43] The GSA's definition needs to include a description of the processes and criteria relied upon to define undesirable results and must describe the effect of undesirable results on the beneficial uses and users of groundwater. From this definition, the GSA establishes minimum thresholds, which are quantitative values that represent groundwater conditions at representative monitoring sites that, when exceeded individually or in combination with minimum thresholds at other monitoring sites, may cause the basin to experience undesirable results.[44]

SGMA leaves the task of establishing undesirable results and setting thresholds largely to the discretion of the GSA, subject to review by the Department. In its review, the Department requires a thorough and reasonable analysis of the groundwater conditions the GSA is trying to avoid, and the GSA's stated rationale for setting objective and quantitative sustainable management criteria to prevent those conditions from occurring. If a Plan does not meet this requirement, the Department is unable to evaluate the likelihood of the Plan in achieving its sustainability goal. This does not necessarily mean that the GSP or its objectives are inherently unreasonable; however, it is unclear which conditions the GSA seeks to avoid, making it difficult for the Department to monitor whether the GSA will be successful in that effort when implementing its GSP.

3.1.2 Deficiency Details

The first deficiency relates to the GSP's lack of explanation and justification for selecting sustainable management criteria for groundwater levels, particularly the minimum thresholds and undesirable results, and the effects of those criteria on the interests of beneficial uses and users of groundwater. Based on its evaluation, Department staff are concerned that although the GSP appears to realistically quantify the water budget and identify the extent of overdraft in the Basin using the best available information, and while the GSP proposes projects and management actions that appear likely to eventually

[42] Water Code § 10721(x).
[43] 23 CCR § 354.26.
[44] 23 CCR § 354.28, DWR Best Management Practices for the Sustainable Management of Groundwater: Sustainable Management Criteria (DRAFT), November 2017.

eliminate overdraft in portions of the Basin, the GSP has not defined sustainable management criteria in the manner required by SGMA and the GSP Regulations.

3.1.2.1 Undesirable Results

The GSP provides quantitative values for the minimum thresholds and includes a combination of those minimum threshold exceedances that the GSA considers causing an undesirable result. However, the GSP does not discuss, or appear to address, the critical first step of identifying the specific significant and unreasonable effects that would constitute undesirable results. The GSP provides general statements about undesirable results (e.g., "The Undesirable Result for the chronic lowering of groundwater levels is a result that causes significant and unreasonable reduction in the long-term viability of domestic, agricultural, municipal, or environmental uses over the planning and implementation horizon of this GSP."[45]) and generic descriptions of the effects of undesirable results (e.g., "…the Undesirable Results could cause potential de-watering of existing groundwater infrastructure, starting with the shallowest wells…"[46]), but does not provide an explanation for the specific significant and unreasonable condition(s) that the GSA intends to avoid in the Basin through implementation of the GSP (e.g., a level of impact to well infrastructure or to environmental uses).

The GSP states undesirable results for chronic lowering of groundwater levels would occur when groundwater level minimum thresholds are exceeded in 30 percent of monitoring wells for two consecutive years. The same criterion of 30 percent for two consecutive years is used for reduction in storage, degradation of groundwater quality, land subsidence, and depletion of interconnected surface water.

However, the GSP does not provide an explanation for why the criterion is consistent with avoiding significant and unreasonable effects that constitute undesirable results or how the GSA may respond should these conditions have potential for occurring.

3.1.2.2 Minimum Thresholds

The GSP lacks explanation of the justification for setting its minimum thresholds and also lacks explanation of the anticipated effects of groundwater conditions at those thresholds on the interests of the beneficial uses and users of groundwater in nearly all threshold regions. The GSP describes that each threshold region has its own formula to determine the quantitative minimum threshold (e.g., in the Central threshold region it is determined by subtracting 20 percent of the historical range in groundwater levels from the groundwater level observed in early 2015). While it is acceptable to set minimum thresholds differently in portions of a basin, all minimum thresholds must, by the definition of that term in the GSP Regulations, relate to the conditions that could cause undesirable results.

This lack of information is particularly notable in the Northwestern threshold region. The GSP states that the intention of the sustainable management criteria for the Northwestern

[45] Cuyama Basin GSP, Section 3.2.1, p. 260.
[46] *Ibid*.

region is to "…protect the water levels from declining significantly, while allowing beneficial land surface uses (including domestic and agricultural uses) and using the storage capacity of this region."[47] However, the Northwestern region is the only region in the Basin where the sustainable management criteria indicate a plan to substantially lower groundwater levels, relative to conditions at the time of GSP preparation (i.e., the minimum thresholds for groundwater levels are up to 140 to 160 feet lower[48]), in an area with the highest concentration of potential GDEs [49] in Cuyama Valley and with interconnected surface water, which is evidenced by a gaining reach of the river.[50] The GSP did not quantify the expected depletions of surface water over time or assess or disclose the anticipated effects of the established minimum thresholds on beneficial uses and users of groundwater, which, based on Department staff's review, appear to include nearby domestic users, potential GDEs, and users of the interconnected surface water.

The absence of this information and related discussion precludes meaningful disclosure to, and participation by, interested parties and residents in the Basin. In addition, without this discussion it is difficult for Department staff to determine whether it is appropriate or reasonable for the GSA to conclude that undesirable results in the Basin would not occur unless nearly a third of representative monitoring points exceed their minimum thresholds for two consecutive years.

3.1.3 Corrective Actions

The GSA must provide more detailed information, as required in the GSP Regulations, regarding undesirable results and minimum thresholds for all applicable threshold regions.[51] The GSA should describe the anticipated effects of the established minimum thresholds and undesirable results on the interests of beneficial uses and users and how the GSA determined that those thresholds would avoid undesirable results in the Basin. Department staff suggest the GSA consider and address the following:

1. The GSA should describe the specific undesirable results they aim to avoid through implementing the GSP. For example, if the long-term viability of domestic, agricultural, municipal, or environmental uses is a concern with respect to lowering of groundwater levels, then the GSA should describe the specific effects on those users that the GSA considers significant and unreasonable and define groundwater conditions that would lead to those effects. Clarify how the criteria defining when undesirable results occur in the Basin (i.e., 30 percent exceedance of minimum thresholds for two consecutive years) was established, the rationale behind the approach, and why it is consistent with avoiding the significant and unreasonable effects identified by the GSA.

[47] Cuyama Basin GSP, Section 5.2.2, p. 352.
[48] Cuyama Basin GSP, Chapter 5 Appendix A, p. 1505-1509.
[49] Cuyama Basin GSP, Section 2.2.9, p. 227, Figures 2-63 and 2-64, p. 230-231, Chapter 2-Appendix D, p. 1258-1279.
[50] Cuyama Basin GSP, Section 2.2.8, p. 222, Figure 2-61, p. 223.
[51] 23 CCR §§ 354.26, 354.28.

2. The GSA should either explain how the existing minimum threshold groundwater levels are consistent with avoiding undesirable results or they should establish minimum thresholds at the representative monitoring wells that account for the specific undesirable results the GSA aims to avoid. For each threshold region, the GSA should evaluate and disclose the anticipated effects of the GSP's minimum thresholds and undesirable results on:

    a. Well infrastructure, including domestic wells, community and public water supply wells, and agricultural wells. The GSA may utilize the Department's well completion report dataset [52] or other similar data to estimate the number and kinds of wells expected to be impacted at the minimum thresholds identified in the GSP. Public water system well locations and water quality data can currently be obtained using the State Water Resource Control Board's (State Water Board) Geotracker website. [53] Administrative contact information for public water systems and well locations and contacts for state small water systems and domestic wells can be obtained by contacting the State Water Board's Needs Analysis staff. [54] The State Water Board is currently developing a database to allow for more streamlined access to this data in the future.

    Should wells be identified as at risk of going dry at or near minimum threshold conditions, describe the extent of those impacts on beneficial users including:location, number, and type of wells impacted; the beneficial uses and users effected; and any identified project or management action that may be taken to address the condition. If the GSA identifies potential impacts to drinking water wells, including de minimis users and disadvantaged communities, those impacts should be described in the GSP.

    By the first five-year update, the GSA should inventory and better define the location of active wells in the Basin. The GSA should document known impacts to drinking water users caused by groundwater management, should they occur, in annual reports and subsequent periodic updates.

    b. Environmental uses and users of groundwater. If data are not available to support evaluation of the effects of established minimum thresholds on environmental uses and users, the GSA should clarify the strategy,

[52] Well Completion Report Map Application. California Department of Water Resources, https://www.arcgis.com/apps/webappviewer/index.html?id=181078580a214c0986e2da28f8623b37.
[53] GeoTracker Application. California State Water Resources Control Board, https://geotracker.waterboards.ca.gov/map/#; select "Public Water Wells" under the "Other Sites" option and navigate to the area of interest.
[54] DDW-SAFER-NAU@Waterboards.ca.gov.

mechanism, and timeline for acquiring that data and incorporating that data into management of the Basin.[55]

3.2 Deficiency 2. The GSP does not fully describe the use of groundwater levels as a proxy for depletion of interconnected surface water.

3.2.1 Background

SGMA identifies six effects of groundwater conditions occurring throughout the basin that GSAs must evaluate to achieve sustainable groundwater management. The GSP Regulations refer to these effects as sustainability indicators and they are chronic lowering of groundwater levels, reduction of groundwater storage, seawater intrusion, degraded water quality, land subsidence, and depletions of interconnected surface water.[56] Generally, when any of these effects are significant and unreasonable, as defined in SGMA, they are referred to as undesirable results.[57] SGMA requires GSAs to sustainably manage groundwater, which is defined as avoiding undesirable results for any sustainability indicator during the planning and implementation horizon.[58] Specifically, for each applicable indicator a GSA must develop sustainable management criteria, describe the process used to develop those criteria, and establish a monitoring network to adequately monitor conditions.[59]

A GSA that is able to demonstrate one or more sustainability indicators are not present and are not likely to occur in the basin is not required to develop sustainable management criteria for those indicators.[60] Absent an explanation of why a sustainability indicator is not applicable, the Department assumes all sustainability indicators apply.[61] Demonstration of applicability (or non-applicability) of sustainability indicators must be supported by best available information and science and should be provided in descriptions throughout the GSP (e.g. information describing basin setting, discussion of the interests of beneficial users and uses of groundwater).

The Department's assessment of a Plan's likelihood to achieve its sustainability goal for its basin is based, in part, on whether a GSP provides sufficiently detailed and reasonable supporting information and analysis for all applicable indicators. The GSP Regulations require the Department to evaluate whether establishment of sustainable management criteria is commensurate with the level of understanding of the basin setting.[62]

[55] 23 CCR §§ 355.4(b)(2), 355.4(b)(3).
[56] 23 CCR § 351(ah).
[57] Water Code § 10721(x).
[58] Water Code §§ 10721(v), 10721(r).
[59] 23 CCR §§ 354.22, 354.32.
[60] 23 CCR §§ 354.22, 354.26(d), 354.28(e).
[61] DWR Best Management Practices for the Sustainable Management of Groundwater: Sustainable Management Criteria (DRAFT), November 2017.
[62] 23 CCR § 355.4(b)(3).

The GSP Regulations require a GSP to identify interconnected surface water systems in the basin and evaluate the quantity and timing of depletions of those systems using the best available information.[63] As noted above, absent a demonstration of the inapplicability of the depletion of interconnected surface water sustainability indicator, GSAs in basins with interconnected surface waters must develop sustainable management criteria for those depletions as described in the GSP Regulations.

3.2.2 Deficiency Details

The second deficiency relates to the GSP lacking a demonstration, with supporting evidence, of the reasonableness of using groundwater level thresholds as a proxy for depletion of interconnected surface water. The GSP states that "[b]y setting minimum thresholds on shallow groundwater wells near surface water, the [GSA] can to (*sic)* monitor and manage [the hydraulic gradient between surface water and groundwater], and in turn, manage potential changes in depletions of interconnected surface [water]."[64] However, in defining the groundwater level proxies for depletion of interconnected surface water, the GSA appears to have used all the groundwater level thresholds it defined for chronic lowering of groundwater levels regardless of depth of the well or proximity to surface water. It is not obvious to Department staff why managing the Basin to the complete set of chronic lowering of groundwater level thresholds is sufficient to avoid undesirable results for depletion of interconnected surface water, especially since many of those groundwater level thresholds represent conditions that are lower than current conditions.

3.2.3 Corrective Action

The GSA should provide a demonstration, with supporting evidence, for why using the basinwide groundwater level minimum thresholds is a reasonable proxy for thresholds for depletion of interconnected surface water. If the representative monitoring network for interconnected surface water is modified, discuss how the definition of an undesirable result is affected.

3.3 Deficiency 3. The GSP does not fully address degraded water quality.

3.3.1 Background

SGMA and the GSP Regulations do not require a GSP to address undesirable results associated with degraded water quality that occurred before, and have not been corrected by, January 1, 2015. However, management of a basin pursuant to an adopted GSP should not result in further water quality degradation that is significant and unreasonable, either due to routine groundwater use or as a result of implementing projects or management actions called for in the GSP.[65] SGMA provides GSAs with legal authority

[63] 23 CCR §§ 354.28(c)(6)(A), 354.28(c)(6)(B).
[64] Cuyama Basin GSP, Section 3.2.6, p. 263.
[65] Water Code § 10721(x)(4); 23 CCR § 354.28(c)(4).

to regulate and affect pumping and groundwater levels, which have the potential to affect the concentration or migration of water quality constituents and result in degradation of water quality. Additionally, the GSP Regulations state that GSAs should consider local, state, and federal water quality standards when establishing sustainable management criteria,[66] and SGMA provides GSAs with the authority to manage and control polluted water and use authorities under existing laws to implement its GSP.[67] Thus, establishing sustainable management criteria and performing routine monitoring of water quality constituents known to affect beneficial uses and users is within the purview of a GSA.

3.3.2 Deficiency Details

The third deficiency relates to the GSP's role in monitoring for, managing, and avoiding degraded water quality. Department staff believe the GSA's decision to not set sustainable management criteria for arsenic and nitrates may not be reasonable because the findings were not supported by the best available information.[68] The GSP focused on total dissolved solids (TDS), nitrates, and arsenic as a result of public comments received during GSP development.[69] The GSP includes sustainable management criteria for TDS but, despite acknowledging that nitrate and arsenic have exceeded maximum contaminant levels (MCL) prescribed by the State Water Board, the GSP did not establish sustainable management criteria for those constituents. Furthermore, the GSA does not intend to perform routine monitoring for nitrates and arsenic on the basis that they determined there is no "causal nexus" between the GSA's authority to implement projects and management actions and concentrations of arsenic or nitrate.[70]

In its justification for the lack of sustainable management criteria for nitrates and arsenic, the GSP explains that there were relatively few detections of those constituents above drinking water regulatory limits—two nitrate samples and three arsenic samples.[71] Regarding arsenic, the GSP states that the three arsenic detections above the MCL came from an inactive well and from groundwater deeper than 700 feet below ground surface, which the GSP states is below the range of pumping depths for drinking water.[72] In other words, the GSP states that arsenic was not detected above MCL in active wells shallower than 700 feet.[73] However, credible public comments submitted to the Department raised concerns about this claim and the data the GSA may or may not have considered, the GSA's interpretation of that data, and the decision of the GSA to not monitor or develop management criteria for those constituents. For example, a comment submitted to the

[66] 23 CCR § 354.28(c)(4).
[67] Water Code §§ 10726.2(e), 10726.8(a).
[68] While there is no definition of best available information, the GSP Regulations define best available science as the use of sufficient and credible information and data, specific to the decision being made and the time frame available for making that decision, that is consistent with scientific and engineering professional standards of practice.
[69] Cuyama Basin GSP, Section 2.2.7, p. 208.
[70] Cuyama Basin GSP, Section 4.8, p. 321.
[71] Cuyama Basin GSP, Section 5.5, p. 360-361.
[72] Cuyama Basin GSP, Section 2.2.7 and Section 4.8, p. 209 and 321.
[73] Cuyama Basin GSP, Section 2.2.7, p. 209.

Department indicates the State Water Board's Groundwater Ambient Monitoring and Assessment (GAMA) Program's Groundwater Information System contains records of arsenic concentrations exceeding the MCL in drinking water wells screened as shallow as 340 feet below ground surface.[74] Department staff confirmed that this claim appears to be true.

Regarding nitrates, a public comment submitted to the Department indicates that potentially 13 of 109 nitrate samples (12 percent) have exceeded the MCL in the past ten years,[75] which conflicts with the GSP's statement that only two samples during 2011 to 2018 exceeded the MCL.

3.3.3 Corrective Actions

Having identified them as constituents of concern, the GSA should reasonably and thoroughly address nitrate and arsenic in the GSP using best available information. Specifically, the GSA should consider the following:

1. Groundwater conditions. The Department received comments that raise credible technical issues regarding groundwater quality data that apparently were not considered when developing the GSP but are available to the public and likely, in the opinion of Department staff, to alter the GSA's assessment of the Basin conditions. The GSA should coordinate with interested parties that submitted comments, in particular with the Regional Water Quality Control Board, to obtain best available information regarding basinwide water quality. The GSA should evaluate this data, along with their existing data, and update the description of basinwide water quality in the GSP as appropriate.

2. Sustainable management criteria. After updating the information regarding existing groundwater quality conditions, the GSA should revise its discussion of groundwater quality sustainable management criteria to either include criteria for arsenic and nitrate or provide thorough, evidence-based analysis and description for why groundwater management is not likely to cause significant and unreasonable degradation of groundwater by increasing concentrations of those constituents.

   Monitoring networks. The GSA should appropriately revise its groundwater quality monitoring network based on updates to the GSP noted above. Department staff believe that, at a minimum, the GSA should include monitoring for arsenic and nitrates, as they have been identified as constituents of concern and both appear to be relatively widespread. Monitoring will be important for the GSA to assess whether groundwater quality degradation for those constituents is occurring

[74] Central Coast Water Board Comments on Final Cuyama Valley Groundwater Sustainability Plan. Central Coast Regional Water Quality Control Board Comment Letter Submitted to the Department, 15 May 2020, https://sgma.water.ca.gov/portal/service/gspdocument/download/4021.
[75] Central Coast Water Board Comments on Final Cuyama Valley Groundwater Sustainability Plan. Central Coast Regional Water Quality Control Board Comment Letter Submitted to the Department, 15 May 2020, https://sgma.water.ca.gov/portal/service/gspdocument/download/4021.

throughout the planning and implementation horizon. The GSA may leverage existing programs that collect and disseminate water quality data and information. The GSA should address any data gaps in the groundwater quality monitoring network and provide specific schedules to address those data gaps.

3.4 DEFICIENCY 4. THE GSP DOES NOT PROVIDE EXPLANATION FOR HOW OVERDRAFT WILL BE MITIGATED IN THE BASIN.

3.4.1 Background

GSP Regulations require that a GSP include a description of projects and management actions that the GSA has determined will achieve the sustainability goal for the basin, the timeline of implementation, and the sustainability indicators that are expected to benefit, including the circumstances in which they would be implemented.[76] For basins in overdraft, the description shall include a quantification of demand reduction or other methods for mitigating the overdraft.[77]

3.4.2 Deficiency Details

The fourth deficiency is related to the lack of a complete discussion of how overdraft will be mitigated in the entire Basin through implementation of the GSP. The GSP identifies two management areas, Central Basin and Ventucopa, as the primary pumping areas in the Cuyama Valley that have the highest water demand. Groundwater levels in the Central Basin management area decline by a modeled 2 to 7.7 feet per year, whereas the Ventucopa management area decline by 2 to 3 feet per year.[78]

To meet the sustainability goal of the Basin, the GSA explains in detail throughout the GSP that a pumping reduction of 50 to 67 percent will be required.[79] Pumping reductions would begin in 2023 and become progressively larger each successive year, with full implementation of the total pumping reduction in 2038.[80]

However, the GSP only intends to implement those pumping reductions in the Central Basin management area and does not explain why pumping reductions will not be implemented in the Ventucopa management area. The GSP executive summary states that “[p]umping reductions are not currently recommended for the Ventucopa Area” and instead recommends “to perform additional monitoring, incorporate new monitoring wells, and further evaluate groundwater conditions in the area over the next two to five years” and that “[o]nce additional data are obtained and evaluated, the need for any reductions in pumping will be determined.”[81] These cited details from the executive summary are the extent of the GSP’s description of the plans for possible demand management in the

[76] 23 CCR § 354.44.
[77] 23 CCR § 354.44(b)(2).
[78] Cuyama Basin GSP, Figure 7-1, p. 387.
[79] Cuyama Basin GSP, Executive Summary and Table 2-7, p. 26 and 254.
[80] Cuyama Basin GSP, Figures ES-15 and 8-1, p. 32 and 419-420.
[81] Cuyama Basin GSP, Executive Summary, p. 32.

Ventucopa management area.[82] Lack of detail for this area is concerning because it appears to Department staff as though the GSA's defined minimum thresholds, which should represent a point in the Basin that, if exceeded, may cause undesirable results,[83] in the Ventucopa management area could be exceeded in as soon as two years if two feet per year of groundwater level decline continues.[84] It is also concerning because the GSP explains that "[d]omestic water users in [the Ventucopa and Central Basin management areas] are experiencing water supply challenges, and in the 2012-2016 drought experienced well failures."[85]

In addition to the Ventucopa Area, the GSP does not discuss why projects and management actions were not considered in the Northwestern threshold region, where, as noted above in Corrective Action 1 (Section 3.1), it appears that overdraft will occur for some time and the allowable groundwater-level decline is over 100 feet in some representative wells.[86]

3.4.3 Corrective Actions

The GSA should explain the rationale for not implementing pumping reductions in the overdrafted Ventucopa management area or any other portion of the Basin where overdraft is expected to continue, and explain the timeline and criteria that may be used to determine whether future pumping reduction allocations are needed.[87] If the criteria to implement pumping reductions are related to the effects on beneficial uses and users, as mentioned in Corrective Action 1, the GSP should clarify what those effects are that would necessitate pumping reductions. If data gaps are known to exist they should be explained and include a timeline to address them and how they may affect management actions for the Ventucopa management area.

The GSP states well failures occurred during the 2012-2016 drought and projects a lowering of groundwater levels beyond those observed during the drought and below 2015 conditions. If, after considering this deficiency and the deficiency associated with Corrective Action 1 (Section 3.1), the GSA retains minimum thresholds that allow for continued lowering of groundwater levels, then it is reasonable to assume that additional wells may be impacted during implementation of the Plan. While SGMA does not require all impacts to groundwater uses and users be mitigated, the GSA should consider including projects and management actions strategies describing how they may support

[82] Cuyama Basin GSP, Executive Summary and Section 7.3.2, p. 32 and 410.
[83] 23 CCR § 354.28(a).
[84] Maps in the GSP appear to indicate two representative monitoring wells are located in the Ventucopa Management Area, OPTI wells 62 and 101. The minimum threshold at OPTI Well 62 is 182 feet below ground surface and the water level as of December 2020 was 158.4 feet below ground surface; at two feet per year the minimum threshold will be exceeded in approximately 12 years. The minimum threshold at OPTI Well 101 is 111 feet below ground surface and the water level as of December 2020 was 108.6 feet below ground surface; at two feet per year the minimum threshold could be exceeded in approximately 2 years.
[85] Cuyama Basin GSP, Section 7.2.4, p. 405.
[86] Cuyama Basin GSP, p. 1505-1509.
[87] 23 CCR §§ 355.4(b)(3), 355.4(b)(4), 355.4(b)(5), 355.4(b)(6).

drinking water impacts that may occur due to continued overdraft during the period between the start of GSP implementation and achievement of the sustainability goal will be addressed. If mitigation strategies are not included, the GSP should contain a thorough discussion, with supporting facts and rationale, explaining how and why the GSA determined not to include specific actions to mitigate drinking water impacts from continued groundwater lowering below 2015 levels.

4 STAFF RECOMMENDATION

Department staff believe that the deficiencies identified in this assessment should preclude approval of the GSP for the Cuyama Valley Basin. Department staff recommend that the GSP be determined incomplete.