

Attachment A-2

Nitrate Permitting Strategy

1.0 Regulatory Basis for Nitrate Permitting Strategy for Discharges to Groundwater¹

The Salt and Nitrate Management Plan (SNMP) sets forth several different approaches for managing salts and nitrates throughout the Central Valley. For dischargers regulated by the Central Valley Water Board, these management efforts must ultimately be implemented in permits issued to dischargers. Permits issued by the Central Valley Water Board are referred to as waste discharge requirements (WDRs), or Conditional Waivers from waste discharge requirements (Conditional Waivers).² WDRs must implement relevant provisions in the Basin Plans, and Conditional Waivers must be consistent with the Basin Plans. The Basin Plans identify beneficial uses for designated waterbodies, establish water quality objectives that “will ensure reasonable protection of beneficial uses and the prevention of nuisance, and specify a program of implementation.”³ Many Central Valley groundwater basins and subbasins are designated with the municipal and domestic water supply (MUN) beneficial use, which is defined to mean “uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.”⁴ Existing MUN use is identified for specified groundwater basins in the Tulare Lake Basin Plan, and generally designated for all groundwater basins in the Sacramento River, San Joaquin River, and Tulare Lake Basins.

Along with the MUN beneficial use designation, the Basin Plans include the following water quality objective to protect drinking water:

“At a minimum, waters designated for domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in the following provisions of Title-22 of the California Code of Regulations which are incorporated by reference into this plan: Tables 64431-A (Inorganic Chemicals)...”⁵

¹ The Strategy provided here applies to discharges to groundwater. In some limited instances, the principles identified in the Nitrate Permitting Strategy may also be appropriate for consideration by the Central Valley Water Board to discharges to surface waters where the municipal and domestic (MUN) beneficial use is the most sensitive beneficial use. In such cases, the Central Valley Water Board will determine if assimilative capacity exists under current applicable mixing zone policies for NPDES dischargers, or consider application of a variance as currently set forth in the *Variance Policy for Surface Waters* that is contained in the Basin Plans. The Nitrate Permitting Strategy provided here is not intended to revise existing policies that apply to NPDES surface water dischargers.

² CWC §13263 & 13269

³ CWC §13241

⁴ Water Quality Control Plan (Basin Plan) for the Sacramento River Basin and the San Joaquin River Basin – 4th Ed., (SRSJR Basin Plan), pg. II-1

⁵SRSJR Basin Plan, pg. III-10.0 and Water Quality Control Plan for the Tulare Lake Basin (TLB Basin Plan) - 2nd Ed., pg. III-7.

For waterbodies designated MUN, the Maximum Contaminant Level for nitrate is 10 mg/L as nitrogen.⁶

Thus, with respect to nitrate (under the Basin Plans as they currently exist), WDRs and Conditional Waivers must ensure that discharges authorized by the given WDR/Conditional Waiver meet the water quality objective in the discharge, or ensure that the discharge will not cause or contribute to the receiving water exceeding the applicable water quality objective. In some areas of the Central Valley, and for some dischargers, the traditional permitting approach for nitrates may not be feasible, reasonable or practicable. The SNMP Nitrate Permitting Strategy sets forth recommendations with respect to permitting nitrate discharges in WDRs and Conditional Waivers under the traditional permitting approach as well as providing for alternative permitting approaches in cases where traditional permitting is not feasible, reasonable or practicable.

In either case, the Central Valley Water Board must adopt permits that implement and are consistent with the Basin Plans, which includes consideration of several recent statewide policies. There is also a need to consider the reality of existing water quality conditions. Relevant statewide efforts and policies are summarized below. Existing water quality conditions are described in detail in Section 3 of the SNMP with supporting information in Attachment B of the SNMP.

1.1 Statewide Nitrate Policies

The issue of nitrate in groundwater, and its potential impact on residents that rely on groundwater, is of statewide importance. Because of significant human health concerns related to nitrate contamination, the State Water Resources Control Board (State Water Board) and the California Legislature have given, and continue to give, significant attention to this issue. For example, efforts related to nitrates in groundwater have resulted in Reports to the Legislature that included recommended actions, as well as legislation for the protection of the Human Right to Water. These efforts are summarized here.

In 2013, State Water Board reaffirmed the importance of developing appropriate WDRs to manage nitrate discharges:

“The Water Boards will evaluate all existing Waste Discharge Requirements to determine whether existing regulatory permitting is sufficiently protective of groundwater quality at these sites. The Water Boards will use the findings to improve permitting activities related to nitrate.”⁷

In 2012, the state legislature approved Assembly Bill 685 which amended the California Water Code to declare that:

“...every human being has the right to safe, clean, affordable and accessible water adequate for human consumption, cooking and sanitary purposes. All relevant state agencies, including the Department of Water Resources, the State Water Resources Control Board, and the State Department of Public Health, shall consider this state

⁶ 22 CCR §64431(a); see Table 64431-A: Maximum Contaminant Levels for Inorganic Chemicals. Prior to January 1, 2016 the MCL was expressed as 45 mg/L (as NO₃) which is equivalent to 10 mg/L Nitrate as Nitrogen.

⁷ State Water Resources Control Board. Report to the Legislature: Recommendations for Addressing Nitrate in Groundwater (February, 2013). See recommendation #15 at page 43 of the report.

policy when revising, adopting or establishing policies, regulations, and grant criteria when these policies, regulations and criteria are pertinent to the uses of water described in this section.”⁸

To ensure statewide implementation and consideration of the Human Right to Water, the State Water Board in February of 2016 adopted the Human Right to Water as a Core Value and Directing Its Implementation in Water Board Programs and Activities (Resolution 2016-0010). Among other things, Resolution 2016-0010 finds that:

“When regulating discharges that could threaten human health by causing or contributing to pollution or contamination of drinking water sources, the Water Boards may consider all solutions for ensuring safe drinking water, including providing replacement water as an interim solution while long-term water quality solutions are developed.”

The Central Valley Water Board recently followed suit and adopted Resolution 2016-0018,⁹ similarly directing implementation of the Human Right to Water in its programs and activities.

1.2 State’s Antidegradation Policy & Allocation of Assimilative Capacity

In addition to the nitrate specific efforts summarized in Section 1.1 above, existing state policy also provides for the protection of high quality ground waters, and limits degradation to such high quality waters. Specifically, when water quality in a groundwater basin is better than the water quality objective specified in the Basin Plan, then the state's antidegradation policy¹⁰ requires the Central Valley Water Board to regulate in a manner designed to maintain the highest quality water that is reasonable.¹¹ Therefore, when the nitrate concentration in the receiving water is less than 10 mg/L (i.e., better than the objective), the Central Valley Water Board must establish WDRs/Conditional Waiver that preserve high quality water unless it finds that lowering water quality is consistent with the state's antidegradation policy.

The state antidegradation policy sets forth the specific conditions that must be met and demonstrations that must be made before the Central Valley Water Board can allow a discharge (or discharges) to lower existing water quality:

- “1) Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.*
- 2) Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in*

⁸ Assembly Bill No. 685 added §106.3 to the California Water Code. Signed by Gov. Brown on September 25, 2012.

⁹ Central Valley Water Board Resolution, adopted April 21, 2016.

¹⁰ State Water Board Resolution 68-16, Statement of Policy with Respect to Maintaining High Quality Waters of California.

¹¹ State Water Board. Statement of Policy with Respect to Maintaining High Quality of Waters in California. Resolution No. 68-16 (Oct. 28, 1968).

the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.”¹²

When specific conditions noted above are met, the Central Valley Water Board can make an allocation of assimilative capacity and allow a discharge (or discharges) to lower existing water quality. The Central Valley Water Board is not required to allocate all of the estimated assimilative capacity available.

Under current policy, in situations where there is no assimilative capacity and the discharge does not meet the water quality objective as it enters the receiving water, the Central Valley Water Board is required to either revise the Basin Plan, or prohibit the discharge.¹³ While this approach is protective of high quality waters, it does not address situations where water quality already exceeds the standard and where it is not feasible, reasonable or practicable for the discharge to meet the objective or for the Central Valley Water Board to prohibit the discharge. Further, this traditional approach does not help to improve existing water quality or provide drinking water to Central Valley residents in the near-term that rely on groundwater.

2.0 Alternative Permitting Approaches for Nitrate

2.1 SNMP Recommended Guidance to Evaluate Consistency with Antidegradation Requirements & Allocation of Assimilative Capacity

Overall, the SNMP recommends that the Central Valley Water Board be predisposed to allocate assimilative capacity, and allow lower water quality, where doing so assures a significantly better outcome for the people of California than would requiring strict compliance with default WDRs/Conditional Waivers. Further, the SNMP recommends that the Central Valley Water Board prioritize allocations of assimilative capacity when and where it would provide a demonstrably more effective means of assuring safe drinking water than other available permitting alternatives. However, the SNMP also recognizes the importance of protecting high quality waters and for this reason, the SNMP and the Nitrate Permitting Strategy establish triggers to maintain an appropriate safety factor to ensure that high quality receiving waters do not exceed the water quality objective for nitrate.

In general, to determine that the allocation of assimilative capacity “will not result in water quality less than that prescribed in the policies,” the SNMP recommends that the Central Valley Water Board require dischargers to demonstrate that the permitted discharge(s) will not cause the average nitrate concentration in the relevant groundwater to exceed a trigger value of 7.5 mg/L. If the discharge(s) will cause average nitrate concentrations to exceed the trigger value, or if the relevant groundwater already exceeds the trigger value, additional data and information may be required by the Central Valley Water Board to allocate assimilative capacity above the trigger value to the objective of 10 mg/L.

¹² State Water Board. Statement of Policy with Respect to Maintaining High Quality of Waters in California. Resolution No. 68-16 (Oct. 28, 1968).

¹³ State Water Board Order No. WQ 88-12, *In the Matter of Petition of Carol Ann Close; San Diego Milk Producers Council; et al*, at p. 14.

The first step in determining if there is assimilative capacity available involves defining what is the relevant groundwater. Over the years, terms such as “first encountered groundwater” and “shallow groundwater” have been used interchangeably but in fact have different meanings to different people. Further, the SNMP has evaluated extensive water quality monitoring data and information and has categorized the results as being reflective of the upper, lower, or production zone, which are based on well type/depth and use of the groundwater in question (see Section 3 of the SNMP for additional discussion of upper, lower and production zones within groundwater basins/subbasins).¹⁴

To provide some clarity, the SNMP recommends that relevant groundwater be the area referred to as shallow groundwater, or be a volume-weighted average of the upper zone, depending on the permitting pathway pursued, which is discussed further below. Use and reference to first encountered groundwater is *not* appropriate because it essentially means the uppermost surface of saturated subsurface materials (usually in reference to the water table), and that may not constitute an aquifer and may not yield significant or economic quantities of groundwater to wells and springs (e.g., particularly wells constructed for water supply purposes).

With respect to shallow groundwater, the SNMP recommends that the term shallow groundwater refer to the following: The shallowest portion within the upper zone (e.g., uppermost 10% of the upper zone) and where groundwater would be considered to constitute an aquifer (which is defined as a “body of rock or sediment that is sufficiently porous and permeable to store, transmit, and yield significant or economic quantities of groundwater to wells and springs” [DWR, 2003]). In all cases, relevant groundwater does not include perched water.¹⁵

With respect to determining if assimilative capacity is available, the level of demonstration needed would vary based on a number of different factors. For example, for discharges from a single facility (often referred to as a point source discharger), the demonstration may be relatively simple if the discharger is seeking to show available assimilative capacity from looking at shallow groundwater and the discharger has the necessary data and information to show that the discharge will not cause shallow groundwater to exceed the established trigger levels over a 20-year planning horizon. At the other end of the scale, multiple dischargers seeking to show assimilative capacity available in the volume-weighted upper zone over a defined management zone area will likely need more extensive data and information, and/or modeling, to make the demonstration that established trigger levels will not be exceeded within a defined time frame. In both cases, discharges that will cause the groundwater to exceed the trigger level does not mean that pollution or nuisance is occurring, or that the Central Valley Water Board cannot authorize use of assimilative capacity above the trigger – up to the water quality objective. However, additional data and information may be requested by the Central Valley Water Board to support any authorization of use of available assimilative capacity above the established trigger levels.

The Nitrate Permitting Strategy recommends that allocations of assimilative capacity by the Central Valley Water Board be determined based on the permitting strategy pathway that individual dischargers or groups of dischargers choose relative to nitrate permitting. Section 3.0 of this attachment below describes in detail the two pathways, and the allocation of assimilative capacity

¹⁴ Luhdorff & Scalmanini Consulting Engineers and Larry Walker Associates. 2016. *Region 5: Updated Groundwater Quality Analysis and High Resolution Mapping for Central Valley Salt and Nitrate Management Plan*. June 2016.

¹⁵ Perched groundwater is defined in SNMP Attachment D-1.

that is applicable based on the pathway that is selected. As recommended further below, granting assimilative capacity based on the volume-weighted average of the upper zone would typically need to be accompanied with a proposed Alternative Compliance Project (ACP) while granting assimilative capacity in shallow groundwater would not.¹⁶ A proposed ACP should be designed to mitigate the significant adverse effect(s) of the permitted discharge(s) as it relates to nitrate for which assimilative capacity has been granted by using volume-weighted averages in the upper zone.¹⁷ Moreover, as part of an ACP for nitrate, discharger(s) will need to show that groundwater users down-gradient of the discharge(s) have drinking water that meets applicable state and federal standards. ACPs may include both interim actions (e.g., bottled water) in the short-term, permanent solutions (such as well-head treatment or alternative drinking water supplies) in the intermediate term, and efforts to re-attain the water quality objective (where feasible and practicable) over the long-term. Guidelines specific to developing ACPs are set forth in Attachment A-10 of the SNMP.

Next, to permit the use of assimilative capacity, the Central Valley Water Board is required to find that the discharger, or dischargers, are implementing “best practicable treatment or control [BPTC] necessary to assure that a pollution or nuisance will not occur.” To determine if BPTC is being implemented, the SNMP recommends that the Central Valley Water Board look at whether BPTC (at the discharge) can show that nitrate concentrations in the relevant groundwater will remain below the established trigger level for the defined planning horizon (i.e., 20 years), or below the 10 mg/L water quality objective where use of assimilative capacity above the trigger level is being considered. In cases where assimilative capacity is being granted based on availability of assimilative capacity in the upper zone, the SNMP recommends that the Central Valley Water Board next consider whether mitigation strategies applied at any other point between the discharge and all affected down-gradient water users (e.g., well-head treatment or alternative water supply, etc.) can better assure safe drinking water to those users.

Overall, it is anticipated that the level of analysis necessary to support an allocation of assimilative capacity, and required findings relative to evaluating BPTC and compliance with the state’s antidegradation policy, will vary based on the relevant groundwater being used to determine if assimilative capacity is available (i.e., shallow versus upper zone), and if a trigger level will be exceeded. For example, to evaluate if BPTC is being implemented granting use of assimilative capacity based on the volume-weighted average of the upper zone, the SNMP recommends that a complete antidegradation analysis be prepared by the discharger(s), and that such analysis include an evaluation of alternatives, which considers socioeconomic impacts of different control/treatment measures, and if different control/treatment measures are reasonable, practicable, and/or feasible.

Then, and in conjunction with evaluating BPTC, the Central Valley Water Board must determine whether allocating assimilative capacity to authorize a discharge that is expected to lower water

¹⁶The Central Valley Water Board would retain its discretion to consider granting use of assimilative capacity in the upper zone without trigger the need for an alternative compliance project for unique/limited circumstances. For example, in some areas of the Central Valley, groundwater quality is excellent with respect to nitrates and historical and present data indicates that there are limited threats to degradation of groundwater quality based on past and current practices. In such cases, the Central Valley Water Board retains its discretion to determine the availability of assimilative capacity using volume-weighted averages in the upper zone without triggering the need for an ACP. However, in all cases, if there are localized “hot spots,” dischargers’ causing or contributing to nitrate levels in the localized area may be required to propose an ACP for that specific area.

¹⁷ A more detailed description of the mandatory elements in an ACP is described in Attachment A-10 of this SNMP.

quality is “consistent with maximum benefit to the people of the state.” To make this finding for nitrate discharges, the SNMP recommends that the Central Valley Water Board consider the following factors:

- 1) Economic and social costs, tangible and intangible, direct and indirect, of the proposed discharge compared to the benefits for both the discharger and all others that may be affected by the discharge. This includes an evaluation of the discharger's capacity to bear the cost of compliance (e.g., “affordability”) and any potential adverse impacts to the surrounding community. This is not intended to be a formal Cost-Benefit Analysis.
- 2) Environmental effects of allowing or prohibiting the proposed discharge (especially the net effect on water quality in the region and the Central Valley Water Board's long-term restoration plans). In some cases, where the net effect on receiving water quality is shown to be spatially and/or temporally-limited, the Central Valley Water Board may conclude that the discharge does not result in significant degradation.

In general, the Central Valley Water Board is less likely to allocate assimilative capacity to discharges where there is a reasonably feasible and practicable means for achieving compliance with traditional WDRs/Conditional Waivers. The Central Valley Water Board is also unlikely to prohibit discharges where no such means exist and considers this option only as a last resort.

Notably, if the Central Valley Water Board concludes that, even after implementing BPTC, a discharge will unreasonably affect present or anticipated beneficial uses of water, or result in water quality less than that prescribed in the Basin Plan, or cause an unmitigated pollution or nuisance to occur, or is inconsistent with maximum benefit to the people of the state, then lower water quality cannot be authorized by allocating a portion of the available assimilative capacity. However, the discharge(s) may still be permitted if the Central Valley Water Board determines that it is appropriate to grant an exception to meeting the water quality standard for nitrate. The granting of such exceptions for nitrates is discussed immediately below.

2.2 Granting an Exception to Meeting the Water Quality Objective for Nitrate

2.2.1 Overview

As indicated previously, the Central Valley Water Board is required to implement the Basin Plans when establishing WDRs.¹⁸ When existing nitrate concentrations in the groundwater already exceed 10 mg/L, and there is no assimilative capacity available, the State Water Board has previously ruled that Regional Boards may not authorize WDRs that allow discharges to be greater than the applicable water quality objective.¹⁹

For discharges to groundwater, compliance with the objective is generally assessed at the point-of-discharge or immediately below the root zone of an irrigated field.²⁰ Exceptions to this approach “may

¹⁸ CWC §13263(a) and § 13269(a) for Conditional Waivers.

¹⁹ See, for example, State Water Board Order No. 73-4: In the Matter of the Petition of Orange County Water District for Review of Order No. 72-16 of the California Regional Water Quality Control Board, Santa Ana Region, Prescribing Waste Discharge Requirements for Rancho Caballero Mobile Home Park (Feb. 1, 1973).

²⁰ State Water Board Order No. WQ-88-12: In the Matter of the Petition of Carol Ann Close; San Diego County Milk Producers Council, et al. (pg. 14).

*be granted where it can be shown that a higher discharge limitation is appropriate due to system mixing or removal of the constituent by the process of percolation through the ground to the aquifer.*²¹ So, for example, the Central Valley Water Board may take into consideration crop uptake, mixing with stormwater recharge, and transformation through the soil when assessing whether a discharge will meet the water quality objective when it reaches the groundwater. The burden of providing adequate technical information to support such findings generally falls on dischargers.

The above approach generally describes the Central Valley Water Board's current permitting strategy for discharges of nitrate to groundwater when there is no assimilative capacity available. If discharges are unable to immediately comply with such restrictions, and require additional time to implement the necessary pollution control measures, the Central Valley Water Board is authorized to establish an appropriate compliance schedule in the WDRs.²²

However, in some cases, there may be no reasonably feasible or practicable means for dischargers to comply with WDRs limiting the discharge of nitrate to groundwater to concentrations less than 10 mg/L, at least at the present time.²³ In such circumstances, under the current regulatory framework, the Central Valley Water Board may have no legal option but to prohibit the discharge.²⁴ This, in turn, may be tantamount to prohibiting any activity producing a discharge that is unable to comply with water quality objectives despite employing reasonable best efforts. Such an outcome is inconsistent with the State Water Board's declaration that *"Resolution 68-16 is not a 'zero-discharge' standard but rather a policy statement that existing quality be maintained when it is reasonable to do so."*²⁵

In many instances, prohibiting the discharge may also be infeasible, impracticable or unreasonable. For example, municipal wastewater treatment plants cannot simply halt the flow of sewage into the facility without severe adverse consequences on public health and the environment. Similarly, prohibiting nitrate discharges from production agriculture may result in substantial and widespread adverse social and economic impacts on residents of the state while doing little to resolve the existing water quality impairments in the region. For this reason, the State Water Board had concluded that:

*"Pollution prevention and cleanups...may not be feasible. Consequently, any practical solution to groundwater contamination must also focus on strategies to provide safe drinking water to consumers through treatment and alternative water supplies."*²⁶

To that end, the State Water Board has also declared that:

²¹ State Water Board Order No. WQ-81-5: In the Matter of the Petition of the City of Lompoc for Review of Order No. 80-03 (NPDES Permit No. CA 0048127), California Regional Water Quality Control Board, Central Coast Region. (March 19, 1981).

²² CWC §13263(c).

²³ See, for example, a more detailed discussion in: "Conclusions of the Agricultural Expert Panel: Recommendations to the State Water Resources Control Board pertaining to the Irrigated Lands Regulatory Program" September 9, 2014.

²⁴ CWC §13243 and CWC §13301; see also State Water Board Order No. 88-12: In the Matter of the Petition of Carol Ann Close; San Diego County Milk Producers Council, et al. (pg. 15).

²⁵ State Water Board Order No. 86-8; In the Matter of the Petition of the County of Santa Clara, et al. May 5, 1986; pg. 29.

²⁶ State Water Board. Report to the Legislature: Recommendations for Addressing Nitrate in Groundwater. February 2013; pg. 5 (citing Thomas Harter, et al., Addressing Nitrate in California's Drinking Water: Report to the California State Water Resources Control Board. U.C. Davis Center for Watershed Sciences. January 2012).

“The single most important action that can be taken to help ensure safe drinking water for all Californians is to provide a stable, long-term source(s) of funding to assist those impacted by nitrate-contaminated groundwater.”²⁷

Moreover, enforcing strict compliance with water quality objectives will do nothing to address prior nitrate discharges slowly moving through the vadose zone.²⁸ Nor does prohibiting the discharge determine when compliance can be achieved.²⁹ In either case, legacy loads are already programmed into the system even if the full effects have yet to manifest in groundwater quality.

Thus, with this background in mind, the SNMP recommends that where existing groundwater quality already exceeds the MCL for nitrate (i.e., > 10 mg/L), or where the Central Valley Water Board is unable to allocate available assimilative capacity, that the Central Valley Water Board's foremost goal should be to encourage rapid implementation of safe drinking water alternatives. To achieve this goal, the Central Valley Water Board needs additional permitting options. Specifically, the SNMP recommends that the Basin Plans be amended to extend and expand the Central Valley Water Board's current authority to authorize exceptions under certain circumstances.³⁰ The following section describes how such exceptions authority should be applied with respect to permitting nitrate discharges to groundwater. A more detailed description of the specific basin plan revisions required to enact a broader exceptions policy and the rationale for such changes is provided in SNMP Attachment A-4 (Exceptions Policy) and summarized in SNMP Section 4.2.2.3.

2.2.2 Authorizing Exceptions

An "exception" allows the Central Valley Water Board to authorize a discharge to occur even where doing so may violate applicable water quality standards in the receiving groundwater basin.³¹ Exceptions are most commonly employed when there is no feasible, practicable or reasonable means for a discharge to meet with water quality objectives and it is not feasible, practicable or reasonable to prohibit the discharge.

Exceptions are an appropriate option when state authorities determine that prohibiting a discharge would do more harm than good and allowing it to continue is in the best interests of the people of the state. Exceptions may also be an appropriate tool to authorize the time required to implement other regulatory solutions (e.g., developing site-specific objectives or reevaluating the applicable beneficial use) or to support a program of phased implementation and reasonable resource allocation including the planning and permitting activities required in such programs. However, exceptions are not

²⁷ State Water Board. Report to the Legislature: Recommendations for Addressing Nitrate in Groundwater. February 2013; pg. 24.

²⁸ State Water Board. Report to the Legislature: Recommendations for Addressing Nitrate in Groundwater. February 2013; pg. 5 (citing the UC-Davis Report identified in Footnote #3, above).

²⁹ State Water Board. Report to the Legislature: Communities that Rely on Contaminated Groundwater. January 2013. See discussion at pages 18-20 in the report. See also the United Nations Report of the Special Rapporteur on the Human Right to Safe Drinking Water and Sanitation. A/HRC/18/33/Add.4 (August 2, 2011). http://www2.ohchr.org/english/bodies/hrcouncil/docs/18session/A-HRC-18-33-Add4_en.pdf

³⁰ Central Valley Water Board Resolution No. R5-2014-0074 (June 6, 2014); subsequently approved by the State Water Board in Resolution No. 2015-0010 (March 17, 2015).

³¹ Exceptions from compliance with water quality standards in a groundwater basin is similar to the concept of a "variance" for surface waters. The key distinction is that exceptions are governed exclusively by state law and variances are subject to both state and federal authority. See, for example, Resolution No. R5-2014-0074.

intended to be a permanent waiver from compliance obligations. They are subject to specified conditions and reviewable periodically.

With respect to exceptions for nitrates, the SNMP recommends two overarching conditions. First, dischargers are still expected to make reasonable best efforts intended to comply with applicable WDRs when there exists a feasible and practicable means for doing so. Second, in lieu of meeting the applicable water quality objective for nitrate, dischargers will be expected to propose an ACP designed to mitigate the significant adverse effect(s) of their permitted discharge as it relates to nitrate for which an exception is granted.³² Moreover, an ACP for nitrate will need to assure that groundwater users down-gradient whose groundwater is impacted by the discharge have drinking water that meets applicable state and federal standards. ACPs may include interim actions (e.g., bottled water) in the short-term, permanent solutions (such as well-head treatment or alternative drinking water supplies) in the intermediate term, and efforts to re-attain the water quality objective (where feasible and practicable) over the long-term. In granting an exception, the Central Valley Water Board must also consider the three management goals, as discussed in SNMP Section 4.1.1.

The SNMP recommends that exceptions be reviewable for two reasons. First, although the means to assure compliance may not currently exist, new source control and treatment technologies may be developed in the future. Therefore, exceptions need to be periodically reassessed. Second, permanent exceptions would be tantamount to nullifying the designated use. Therefore, where compliance cannot be assured (even over the long-term), the State Water Board has stated that the Regional Boards should consider whether the water quality standard itself is appropriate.³³ Exceptions are intended to complement, not replace, the water quality standards review process.

In the Basin Plans, guidance under the current exceptions policy is restricted to a limited number of salinity constituents (electrical conductivity, TDS, chloride, sulfate and sodium).³⁴ As discussed separately in the Exceptions Policy document (see SNMP Attachment A-4), this policy should be revised in order to provide the Central Valley Water Board additional guidance for allowing exceptions for nitrate in WDRs. In summary, the current exceptions policy was deliberately designed to provide interim relief from meeting salinity objectives while CV-SALTS was in the process of developing the long-term SNMP. As such, the interim policy does not allow exceptions longer than 10 years and it prohibits the Central Valley Water Board from approving any new exceptions related to salinity after June 30, 2019. Before that date, it was expected that the interim policy would be replaced by a more permanent exceptions policy – one that was developed in conjunction with the SNMP.³⁵

The SNMP recommends that the expiration date specified in the interim policy be deleted so that that the Central Valley Water Board is authorized to approve salinity exceptions after June 30, 2019. In addition, the SNMP recommends that the 10-year time limit specified in the interim policy be eliminated and allow the Central Valley Water Board to authorize or reauthorize exceptions for much longer periods where necessary to facilitate intermediate and permanent water supply solutions as

³² A more detailed description of the mandatory elements in an ACP is described in Attachment A-10 of this SNMP.

³³ State Water Board Order No. WQ-81-5: In the Matter of the Petition of the City of Lompoc for Review of Order No. 80-03 (NPDES Permit No. CA 0048127), California Regional Water Quality Control Board, Central Coast Region. (March 19, 1981).

³⁴ Resolution No. R5-2014-0074.

³⁵ R5-2014-0074; Regional Board Staff Response to Public Comments, pg. 12 & 13.

well as implementation of long-term restoration strategies described in the SNMP.³⁶ Regardless, dischargers are expected to comply with water quality standards if and when a feasible and practicable means for doing so becomes available. The existing requirement to periodically assess and confirm discharger conformance with the terms and conditions of any exception would remain unchanged.

To grant an exception for discharges of nitrate, the SNMP recommends that the Central Valley Water Board consider the following factors:

- 1) Nitrate concentrations in the groundwater basin and whether they exceed or threaten to exceed the MCL.
- 2) If there is no feasible, practicable or reasonable means for the discharger to assure compliance with the relevant WDRs governing nitrate under traditional permitting approaches, or if a proposed ACP can further the goals of the SNMP more effectively than the traditional permitting approach.
- 3) With respect to determining if it is infeasible, impracticable or unreasonable to prohibit the discharge, the Central Valley Water Board shall consider guidelines for making such an assessment if such guidelines are developed in the future. The Central Valley Water Board's obligation to follow any future developed guidelines will depend on the process used for acceptance of the guidelines by the Central Valley Water Board.
- 4) If authorizing the discharge is in the best interests of the people of the state.
- 5) The discharger, or group of dischargers, proposes to implement an ACP in lieu of meeting the relevant WDRs for nitrate.
- 6) The ACP provides appropriate wellhead treatment or an alternative drinking water supply to down-gradient groundwater users impacted by the discharge(s) and where nitrate levels exceed or threaten to exceed the MCL.³⁷
- 7) The discharger continues to make reasonable best efforts, where feasible and practicable, to further reduce nitrate concentrations in the discharge.
- 8) The discharger is participating in efforts towards implementation of the long-term nitrate compliance plan, as described in Section 3.0 below and the permitting pathways options in SNMP Section 4.3.2.2.

Further, to approve an exception for nitrate, the SNMP recommends that the Central Valley Water Board consider whether the ACP will result in a higher level of public health protection (e.g., greater or faster risk reduction) than is likely to otherwise occur if the discharge were prohibited or is a key part of a long-term restoration strategy. In other words, will the ACP do a better job of achieving the real-world outcomes originally sought by requiring strict compliance with WDRs to meet water quality standards.

³⁶ The long-term approach to nitrate management is described in Section 4.3.2 of the SNMP (also see Section 4.2.5 for a summary of the technical basis for a long-term approach to manage nitrate in groundwater).

³⁷ The discharger may propose to participate in a regional project or make one or more payments to a regional nitrate mitigation fund approved as an ACP subject to Regional Water Board review and approval.

3.0 Nitrate Permitting Approach

The SNMP establishes the management strategy for addressing nitrates in the Central Valley. Timing for implementation of the management strategies will vary across the Central Valley due to the need to address the areas with the largest concerns first, and due to the need to recognize practical resource constraints for implementing the strategy simultaneously throughout the Central Valley. Accordingly, dischargers will be notified by the Central Valley Water Board of their need to comply with the SNMP based on an established priority order. The SNMP includes recommendations for areas that are considered to be the highest priorities based on existing, ambient water quality conditions, and allows for updates and changes to these recommendations based on additional information and criteria for consideration by the Central Valley Water Board. Once notified of the need to comply by the Central Valley Water Board, dischargers will be given a certain amount of time to then notify the Central Valley Water Board of their intent to either comply with the components of the SNMP as an individual discharger/third party, or as part of a groundwater management zone.³⁸ The SNMP recommends that the notification be made in the form of an NOI. Further, to make this election and submit a NOI, dischargers will need to evaluate Preliminary Management Zone Proposals (see SNMP Attachment A-1) that will be made available, as well as evaluate the circumstances of their own discharge (or for third party groups the circumstances of the discharges covered by the third party general order). The NOI requirements will vary depending on the Path selected, and is described in relation to the Paths, which are further defined below.

The SNMP implementation approach for permitting nitrate discharges to groundwater is separated into two paths. The first path (Path A) describes the proposed approach when an individual discharger (or third party group subject to a general order wishing to proceed under Path A) decides to comply with the nitrate components of the SNMP as an Individual/Third Party. The second path (Path B) describes the proposed approach when an individual/third party intends to participate in a management zone to comply with the nitrate components of the SNMP.

Prior to determining which Path to follow, dischargers (individually or collectively) should conduct an initial assessment of their discharge(s) and groundwater conditions in the vicinity of the discharge(s), if known, and evaluate any available Preliminary Management Zone Proposals applicable to the area in which they discharge. Notice and information regarding available Preliminary Management Zone Proposals will be posted on the Central Valley Water Board's website, and all reasonable efforts will be made to notify individual dischargers of the availability of such proposals. With this information, the discharger can then provide the Central Valley Water Board with a Notice of Intent (NOI) on if the discharger(s) intends to comply with the nitrate components of the SNMP as an individual/Third Party group, or as a participant in a management zone.³⁹

³⁸ For purposes of this notification, individual dischargers that are subject to General Orders that cover a specified geographic area or are commodity based, and that are administered by a Third Party (e.g., Third Party Orders for Irrigated Agriculture), the Third Party may provide notice as required in this step on behalf of its members. For individual dischargers that are subject to a General Order that is not administered by a Third Party (e.g., Dairy General Order), the individual must provide the necessary notice as indicated in this step.

³⁹ The definition of what it means to be a participant in a management zone is described in the Groundwater Management Zone Policy (SNMP Attachment A-1) and summarized in SNMP Section 4.2.2.

3.1 Initial Assessment of Receiving Water and/or Discharge Conditions & Evaluation of Preliminary Management Zone Proposals

Establishing appropriate WDRs,⁴⁰ and determining an appropriate pathway for compliance with the SNMP for nitrates requires consideration of a number of key factors including, but not limited to:⁴¹

- 1) The current nitrate concentration in the receiving water (the term receiving water is synonymous with the term relevant groundwater as discussed above) and any relevant trends.
- 2) The nitrate concentration and load in the discharge when it reaches the receiving water, if the information is available.
- 3) The nitrate concentration and load of other discharges to the same management zone, if permitting on a management zone basis.
- 4) Consideration of elements of a Preliminary Management Zone Proposal (see SNMP Attachment A-1).

The permitting options available to the Central Valley Water Board, and the demonstrations required for various options, depends on these variables. An initial assessment is appropriate to determine how the regulated discharge is likely to affect nitrate concentrations in the receiving water. The level of effort to complete the initial assessment should be proportional to the relative risks involved. Low threat discharges in low vulnerability areas generally require considerably less detail. High threat discharges or high vulnerability areas may require more sophisticated analysis and modeling.⁴²

In the simplest case, groundwater quality currently complies with the primary MCL and nitrate concentrations in the discharge are lower than baseline receiving water quality in shallow groundwater. No special consideration is necessary because the discharge complies with water quality standards and does not cause water quality degradation.

At the other end of the spectrum, where shallow groundwater quality already exceeds the primary MCL for nitrate and there is no reasonably feasible or practical means for assuring that nitrate concentrations from the discharge will be less than 10 mg/L when the discharge reaches shallow groundwater, an ACP is needed to allow the discharge to continue. **Figure A2-1** generally summarizes the various permitting scenarios and conditions that may result depending on the quality of the discharge as compared to the quality of the receiving water.

3.2 Permitting Pathways

The SNMP encourages dischargers to participate in management zones as the preferred method for complying with the nitrate components of the SNMP. However, participation in a management zone may not be appropriate for every discharger, or groups of dischargers, depending on water quality

⁴⁰ The term WDRs as used in this section refers to both WDRs and Conditional Waivers, and the strategy applies equally to the Central Valley Water Board's adoption of WDRs under CWC §13263 or adoption of Conditional Waivers under CWC §13269.

⁴¹ State Water Board. In the Matter of the Petition of the City of Lompoc for Review of Order No. 80-03 (NPDES Permit No. CA 00481827), California Regional Water Quality Control Board, Central Coast Region. Order No. WQ 81-5; (3/19/81).

⁴² To determine what constitutes a low threat discharge and low vulnerability area, and high threat discharge and high vulnerability area, the Central Valley Water Board may rely on information contained in approved Groundwater Assessment Reports that have been prepared in conjunction with implementation of the Irrigated Lands Regulatory Program.

and various discharger related circumstances. Accordingly, the SNMP proposes two pathways for complying with the nitrate components of the SNMP. Path A is for those intending to comply with the SNMP as an individual discharger (or third party group subject to a general order), and follows more closely the Central Valley Water Board’s traditional permitting approach. Path B is for those intending to comply with the SNMP by participating in a management zone. Notably, for those dischargers intending to comply via Path A, the Central Valley Water Board may consider granting use of assimilative capacity, subject to required findings and available data and information to support such findings. Under Path A, and where necessary, the SNMP recommends that dischargers show available assimilative capacity in shallow groundwater. In some limited/unique circumstances, it may be appropriate for the Central Valley Water Board to consider granting use of available assimilative capacity for those following Path A based on the volume-weighted average of the upper zone as long as local “hot spots” are addressed appropriately. In comparison, for dischargers intending to comply with the nitrate components of the SNMP by participating in a management zone (i.e., Path B), the SNMP recommends that the Central Valley Water Board consider and evaluate available assimilative capacity by looking at volume-weighted nitrate concentrations in the upper zone as defined in the SNMP. As indicated previously, an authorization for use of assimilative capacity by the Central Valley Water Board will need to be supported by proper findings, and data and information to support such findings. The level of information necessary, as well as WDR conditions/requirements, will vary based on the circumstances associated with each discharge, or collective discharges.

Figure A2-1. Summary of Permitting Scenarios

Nitrate Conditions	Receiving Water Nitrate < 10 mg/L (assimilative capacity available)	Receiving Water Nitrate > 10 mg/L (no assimilative capacity)
Nitrate Concentration in Discharge as it Enters the Receiving Water < Concentration in Receiving Water	Discharge to receiving water is less than receiving water and will not degrade receiving water quality, require traditional compliance through WDRs and periodic monitoring.	<ol style="list-style-type: none"> 1) Discharge to receiving water <u>meets or is less than the</u> water quality objective, require traditional compliance thru the WDRs and periodic monitoring. 2) If discharge quality <u>cannot meet</u> the water quality objective, authorize exception because discharge improves receiving water quality.*
Nitrate Concentration in Discharge as it Enters the Receiving Water > Concentration in Receiving Water	<p>Derive appropriate WDRs, including any allocation of assimilative capacity, in accordance with Antidegradation Policy (68-16).</p> <p>De minimus finding if discharge utilizes <10% available assimilative capacity over a 20-yr period, and triggers not exceeded.</p> <p>ACPs may be required depending on determination of available assimilative capacity, and to avoid causing pollution or nuisance and to demonstrate BPTC consistent with Maximum Benefit.</p>	<ol style="list-style-type: none"> 1) Require functionally-equivalent compliance using ACPs and incorporate ACP compliance into WDR (or through a "bubble permit"). 2) Authorize a variance/exception for discharges.*

*An ACP may also be required as a condition for granting the exception.

3.2.1 Path A - Permitting Strategy for Individual Discharger or Third Party Group Subject to General Order Wishing to Proceed Under Path A

3.2.1.1 Categorization of Discharges for Nitrates

As illustrated in Figure A2-1 above, the conditions/requirements imposed by the Central Valley Water Board in permitting nitrate discharges will vary depending on the impact to water quality. The SNMP recognizes that there are some discharges of nitrates to groundwater that would be considered low-threat, and are therefore relatively simple for the Central Valley Water Board to authorize in existing WDRs, or renewed/revised WDRs. For example, discharges that are better than baseline receiving water quality⁴³ and the receiving water is better than the water quality objective of 10 mg/L are considered to not lower water quality. In such circumstances, the discharge is not subject to the state's antidegradation policies and the Central Valley Water Board is not required to make the findings as specified in Resolution 68-16 to authorize the discharge. Others may be able to demonstrate that their discharge, or collective discharges, are low threat in nature because they have data and information that demonstrates that the discharges have not degraded groundwater over a specified time-period, and that the nature of the discharge has remained constant.⁴⁴ For example, in some areas of the Central Valley where groundwater is better than the nitrate water quality objective, and cropping and cultural practices have remained constant, data and information may be used to demonstrate the low threat nature of the discharge.

However, at the other end of the spectrum, there may be discharges of nitrates that are above the drinking water standard, and there is no available assimilative capacity. In these circumstances, it may be appropriate for the Central Valley Water Board to grant an exception to meeting the water quality objective rather than prohibiting the discharge. With respect to determining the availability of assimilative capacity in the receiving water, the term receiving water as used below for Path A dischargers means shallow groundwater. As indicated previously, the Central Valley Water Board retains its discretion to consider availability of assimilative capacity in the upper zone on a volume-weighted basis for Path A dischargers where there are unique circumstances. An example may include instances where a discharger⁴⁵ is able to demonstrate that their discharge is low threat in nature, data and information demonstrate that discharges have not degraded the receiving water over a specified time-period; the nature of the discharge has remained constant; and the discharge is considered in relationship to the volume-weighted average of the upper zone. In such circumstances, any "hot spots" will need to be addressed.

⁴³ The state's antidegradation policy generally sets the baseline level of water quality as it existed when the policy was adopted in 1968, or when the standard in question became effective, unless subsequent lowering was due to regulatory action consistent with the antidegradation policy. In such circumstances, baseline water quality is the most recent water quality resulting from permitted actions, and is the baseline water quality to be considered in any antidegradation analysis (APU 90-004, p. 4.).

⁴⁴ See, e.g., *Rice-Specific Groundwater Assessment Report*, CH2MHill and PlanTierra (July 2013).

⁴⁵ The term "discharge" here is intended to also mean collective discharges of individuals authorized via general orders for members of third party groups.

Because of the various levels of impacts, the SNMP establishes five categories for dischargers choosing to comply with the SNMP via Path A. The five categories are as follows:

- *Category 1 - No Degradation Category:* Discharge⁴⁶ is equal to or less than the water quality objective of 10 mg/L, and the discharge is better than baseline receiving water quality.
- *Category 2 - De minimus Category:* Baseline receiving water has available assimilative capacity (i.e., is better than the water quality objective). For this category, the discharge(s) may be above the water quality objective as it enters the receiving water, but the discharge(s) will use less than 10% of the available assimilative capacity over a 20-year period and will not cause the receiving water to exceed a trigger of 7.5 mg/L in that time period. This would be considered a *de minimus* discharge.
- *Category 3 - Degradation Below 75% of the Water Quality Objective Category:* Discharges will be considered as part of this category if the discharge occurs in a basin where concentrations in the volume-weighted upper zone do not exceed an acceptable annual increase⁴⁷ and the discharger(s) anticipate using available assimilative capacity in baseline receiving water that is considered to be more than *de minimus* but will not cause the receiving water to exceed a trigger of 75% of the water quality objective for nitrate over a 20 year planning horizon. To allow use of assimilative capacity in this circumstance, the Central Valley Water Board may find it necessary to include additional monitoring and trend evaluations as part of the WDRs in order to make appropriate findings consistent with Resolution 68-16 and the SNMP.
- *Category 4 - Degradation Above 75% of the Water Quality Objective Category, or Receiving Water Quality is at 50% of the Water Quality Objective and the Discharge(s) Occur in a Basin where Concentrations in the Volume-weighted Average of the Upper Zone Exceeds the Acceptable Annual Increase:*⁴⁸ Discharges will be considered as part of this category if they anticipate using available assimilative capacity in the receiving water, and use of assimilative capacity will cause the receiving water to exceed the trigger of 75% of the water quality objective for nitrate over a 20-year planning horizon, or the receiving water is already at 50% of the water quality objective and the discharge(s) occur in a basin where the volume-weighted average of the upper zone exceeds an acceptable annual increase in concentration. To allow use of assimilative capacity in this circumstance, the discharger must submit a proposed ACP to the Central Valley Water Board to be included as an additional condition in the WDRs in order to make appropriate findings consistent with Resolution 68-16 and the SNMP.⁴⁹

⁴⁶ Discharge as used here is intended to mean the quality of the discharge as it enters first encountered groundwater. Thus, the quality of the discharge itself may exceed the standard but due to transformation and other variables, it meets or is better than the objective as it enters first encountered groundwater.

⁴⁷ Acceptable annual increase: upper zone concentrations do not increase more than 0.1 mg/L NO₃-N per year using cumulative average annual increase over a five-year period. The cumulative average refers to an Olympic average, meaning that the highest and lowest sample results are removed; average is calculated from the remaining results. This helps address statistical outliers that otherwise may skew the results.

⁴⁸ See previous footnote

⁴⁹ It is expected that an ACP will be required by the Central Valley Water Board if they agree to authorize use of assimilative capacity for dischargers that fall within Category 4 as an ACP will be an essential element of their ability to make the necessary findings pursuant to Resolution 68-16. However, the Central Valley Water Board maintains the discretion to make an exception in limited and unique circumstances to authorize assimilative capacity to discharges that fall within

- *Category 5 - Discharge Above Objective and No Available Assimilative Capacity*: Discharges that exceed the water quality objective for nitrate, and where the receiving water has no available assimilative capacity, will be considered to be part of this category. Discharges in this category will need to seek an exception pursuant to the Exceptions Policy under the SNMP.

3.2.1.2 Submittal of Notice of Intent

Based on the timelines established in the SNMP, the NOI⁵⁰ for dischargers choosing to follow Path A will need to include the following:

- An initial assessment of receiving water and/or discharge conditions.
- For traditional point sources, an initial assessment to determine if the discharge is impacting any nearby public water supply wells or domestic wells for nitrates based on all readily available data and information; for non-point sources, identification of areas where there are “hot spots” with respect to nitrate concentrations in groundwater based on all readily available data and information.
- As applicable, an Early Action Plan that includes specific actions and a schedule of implementation to address immediate needs of those drinking groundwater that exceeds the drinking water standard if there are public water supply or domestic wells impacted by nitrates from discharges covered by the NOI. It is anticipated that discharges in Categories 1 through 3 will not need an Early Action Plan because such discharges are arguably not causing or contributing to an exceedance of the nitrate drinking water standard. Discharges in categories 4 and 5 may need to prepare an Early Action Plan, which may be part of a proposed ACP. An Early Action Plan is just that, an identification of Early Actions. The EAP may not be comprehensive, and may need to be revised and supplemented with additional information as part of the ACP that is incorporated directly into the WDRs. Notably, if the Central Valley Water Board determines it appropriate to consider availability of assimilative capacity for a path A discharger based on a volume-weighted average of the upper zone, any identified hot spots will need to be addressed as part of the Early Action Plan.
- Identification of Category of the Discharge (see Section 3.2.1.1 above). If the path A discharger is actually individual dischargers subject to a third party general order, and the third party is submitting the NOI on behalf of the individual members of the third party, the third party will need to take reasonable efforts to categorize the various geographic areas as covered by the general order.
- Information necessary to support allocation of assimilative capacity and a proposed ACP, as applicable.

Category 4 without an ACP but the Central Valley Water Board will still need to make all necessary findings pursuant to Resolution 68-16.

⁵⁰ For some dischargers, the NOI required here may coincide with the need to submit a Report of Waste Discharge (ROWD) for a new discharge, or for a material change for an existing discharger. In such cases, the ROWD may substitute for the NOI as long as it includes all of the information identified here.

- Application for Exception pursuant to the Exceptions Policy, as applicable (see SNMP Attachment A4).
- If the discharger(s) is in an area that is covered by a Preliminary Management Zone Proposal, and the discharger(s) is seeking an allocation of assimilative capacity under Path A, the discharger(s) must show how allocation of assimilative capacity to the individual discharger will impact (or not) available assimilative capacity for those participating in the management zone.

The Executive Officer of the Central Valley Water Board retains the discretion to extend the timelines for submittal of the NOI, or portions thereof, if proper justification is provided by the discharger at least two weeks in advance of when the NOI would otherwise be required for submittal.

3.2.1.3 Notice of Intent with Early Action Plan

When the NOI includes an Early Action Plan to address immediate drinking water needs, the discharger shall begin to implement the EAP within 60 days after submittal unless a letter of objection is provided to the discharger by the Central Valley Water Board within that 60-day period.

3.2.1.4 Revision of WDRs/Compliance with SNMP

After receiving the NOI from a Path A discharger, the Central Valley Water Board should have the information necessary to determine if the discharger can comply with the SNMP with no further action, or if the discharger will be required to submit additional information and/or if additional WDR conditions are necessary for the discharger to comply with the SNMP for nitrates (e.g., information regarding implementation of an ACP). In general, discharges that fall within Categories 1 and 2, (No Degradation and *De Minimus* respectfully), will be determined to comply with the SNMP for nitrates without the need for further conditions or requirements. For discharges that fall within Category 3, the Central Valley Water Board must make findings that are consistent with the State's Antidegradation Policy (Resolution No. 68-16). Depending on the level of degradation, the Central Valley Water Board may require additional conditions in WDRs to implement the SNMP, and to allocate assimilative capacity, which in the case of Category 3, may consist of additional monitoring and trend evaluations. For discharges that fall within Categories 4 and 5, the discharger will need to propose an ACP as part of the NOI, or according to a date otherwise agreed on by the Executive Officer, to receive Central Valley Water Board approval for the allocation of assimilative capacity or approval of an Exception pursuant to the Exceptions Policy.

To make findings of compliance with the nitrate components of the SNMP, the Central Valley Water Board must make the following findings and/or impose the following conditions that are applicable to each individual category. The findings and/or conditions shall be included in a new/revised WDR.

- **Category 1 - No Degradation Category**
 - Discharge is equal to or better than the nitrate water quality objective of 10 mg/L-N (i.e., less than 10 mg/L-N); and, discharge is better than baseline receiving water quality.
 - Discharge is deemed to be in compliance with SNMP.
- **Category 2 - De minimus Category**
 - Baseline receiving water quality has assimilative capacity.

- Discharge(s) will not use more than 10% of available assimilative capacity over a 20-year planning horizon and will not cause the receiving water to exceed a trigger level of 7.5 mg/L-N over that planning horizon.
 - Discharge is not in a basin where the volume-weighted upper zone concentration is increasing more than 0.1 mg/L NO₃-N per year using cumulative average annual increase over a 5-year period.
 - To determine amount of assimilative capacity consumed by the discharge, the Central Valley Water Board will consider the quality of the discharge as it enters the receiving water, accounting for reductions in nitrate mass or concentration as the discharge percolates to groundwater through the soil.⁵¹
 - Discharge will not unreasonably affect present and anticipated beneficial uses.
 - WDRs will ensure that BPTC at a level that is necessary to assure that pollution and nuisance will not occur, and that the highest water quality consistent with the maximum benefit to the people of the state will be maintained.
 - When the discharge is in an area that is covered by a Preliminary Management Zone Proposal, the Central Valley Water Board must consider the impact that granting available assimilative capacity to the individual under Path A will have on assimilative capacity for those that are part of the management zone.
- **Category 3 - Degradation Below 75% of the Water Quality Objective Category**
 - Baseline receiving water quality has assimilative capacity.
 - Discharge(s) will use more than 10% of available assimilative capacity over a 20-year planning horizon.
 - Discharge will not cause the receiving water to exceed 7.5 mg/L for nitrate as N over a 20-year planning horizon.
 - Discharge is in a basin where the volume-weighted average of the upper zone is increasing more than 0.1 mg/L NO₃-N per year using cumulative average annual increase over a 5-year period.
 - To determine amount of assimilative capacity consumed by the discharge, the Central Valley Water Board will consider the quality of the discharge as it enters the receiving water, accounting for reductions in nitrate mass or concentration as the discharge percolates to groundwater through the soil (see footnote 53).
 - Discharge will not unreasonably affect present and anticipated beneficial uses.
 - WDRs will result in BPTC at a level that is necessary to assure that pollution and nuisance will not occur, and that the highest water quality consistent with the maximum benefit to the people of the state will be maintained.

⁵¹ In making this determination, the Central Valley Water Board shall consider information provided by the discharger that demonstrates that the level of nitrogen entering the receiving water is different than the level of nitrates in the discharge due to naturally occurring groundwater recharge, nitrogen transformation and losses, and nitrogen up take by plants.

- When the discharge is in an area that is covered by a Preliminary Management Zone Proposal, the Central Valley Water Board must consider the impact that granting available assimilative capacity to the individual under Path A will have on assimilative capacity for those that are part of the management zone.
- Additional monitoring and periodic trend evaluation conditions are imposed to ensure compliance with SNMP.
- **Category 4 - Degradation Above 75% of the Water Quality Objective**
 - Receiving water quality has assimilative capacity.
 - Discharge(s) will use more than 10% of available assimilative capacity over a 20-year planning horizon.
 - Discharge will cause the receiving water to exceed 75% of the WQO for nitrate (i.e., 7.5 mg/L-N) over a 20-year planning horizon but will not cause receiving water to exceed the water quality objective for nitrate over a 20-year planning horizon; or, the receiving water is at or above 50% of the WQO and the volume-weighted average in the upper zone is exceeding an acceptable annual increase in concentration.
 - To determine amount of assimilative capacity consumed by the discharge, the Central Valley Water Board will consider the quality of the discharge as it enters the receiving water, accounting for reductions in nitrate mass or concentration as the discharge percolates to groundwater through the soil (See footnote 53).
 - Discharge will not unreasonably affect present and anticipated beneficial uses.
 - WDRs will result in BPTC at a level that is necessary to assure that pollution and nuisance will not occur, and that the highest water quality consistent with the maximum benefit to the people of the state will be maintained.
 - When the discharge is in an area that is covered by a Preliminary Management Zone Proposal, the Central Valley Water Board must consider the impact that granting available assimilative capacity to the individual under Path A will have on assimilative capacity for those that are part of the management zone.
 - Dischargers are required to develop and implement an ACP for the nitrate components of the SNMP, which shall include the following:
 - Identification of nitrate related drinking water supply issues in the area impacted by the discharge(s);
 - Time schedule with milestones for addressing newly-identified nitrate related drinking water supply issues in the area impacted by the discharge(s);
 - Preliminary identification of the steps that will be taken to evaluate actions necessary to implement Management Goals 2 and 3, which may be phased in over time and will likely require further evaluation and assessment to identify proposed long-term actions.
- **Category 5 - Discharge Above Objective and No Available Assimilative Capacity**
 - Receiving water has no assimilative capacity for nitrates.

- Discharge exceeds the water quality objective for nitrate.
- No reasonable, feasible or practicable means are available for discharger to comply with WDRs that would otherwise limit the discharge of nitrate to groundwater concentrations to less than 10 mg/L-N.
- It is infeasible, impracticable or unreasonable to prohibit the discharge.
- Discharger required to develop and implement an ACP for the nitrate components of the SNMP, which shall include the following:
 - Identification of nitrate related drinking water supply issues in the area impacted the discharge(s);
 - Time schedule with milestones for addressing newly-identified nitrate related drinking water supply issues in the area impacted by the discharge(s);
 - Preliminary identification of the steps that will be taken to evaluate actions necessary to implement Management Goals 2 and 3 where reasonable and feasible, which may be phased in over time and will likely require further evaluation and assessment to identify proposed long-term actions.
- Discharger required to seek and obtain an exception in accordance with the Exceptions Policy.

3.2.2 Path B - Permitting Strategy for Participants of a Management Zone

3.2.2.1 Preparation of a Preliminary Management Zone Proposal

The SNMP encourages dischargers (and groups of dischargers) to work collectively to initiate development of a Preliminary Management Zone Proposal, the requirements of which are outlined in the Groundwater Management Zone Policy (SNMP Attachment A-1). The purpose for preparing a Preliminary Management Zone Proposal is to provide all dischargers within the specified area for that management zone with enough information to make an election for complying with the nitrate components of the SNMP via Path A (as an individual discharger/third party group), or via Path B (participant in a management zone). After conducting their own initial assessment of their discharge, and after evaluating any applicable preliminary Management Zone Proposal, dischargers will then need to notify the Central Valley Water Board of their election. The timeline for submitting a Preliminary Management Zone Proposal shall be based on the priority order identified in the SNMP. The Executive Officer of the Central Valley Water Board shall maintain some discretion to extend the timelines identified in the SNMP for submittal of a Preliminary Management Zone Proposal if proper justification is provided to the Executive Officer at least 30 days prior to the deadline otherwise indicated in the SNMP.

3.2.2.2 Submittal of Notice of Intent

Within 60-days of availability of a Preliminary Management Zone Proposal for a specified area, dischargers within that area that intend to comply with Path B (i.e., participate in the management zone), shall submit a NOI of their intent to the Central Valley Water Board. The NOI shall include identification of the management zone in which the discharger intends to participate, and acknowledge that they have reviewed and understand the commitments associated with participation in the management zone based on the Preliminary Management Zone Proposal that applies for their

area of discharge. For those dischargers in that area that decide not to participate in the management zone, they shall submit a NOI as outlined in section 3.2.1.2 above.

3.2.2.3 Implementation of Early Action Plan

As indicated in the Groundwater Management Zone Policy, the Preliminary Management Zone Proposal must include an Early Action Plan. As part of participating in a management zone, dischargers will need to collectively be responsible for implementing the Early Action Plan that is part of the Preliminary Management Zone Proposal. The time for beginning to implement the Early Action Plan shall be based on Central Valley Water Board acceptance of the Early Action Plan, which shall be indicated through a notice to proceed from the Central Valley Water Board to the lead entity responsible for the management zone. Further, although WDRs for dischargers participating in a management zone will not yet be revised at this step in the process, the SNMP recommends that the Central Valley Water Board find participating dischargers in compliance with nitrate components of the SNMP as long as the participant is timely, and in good faith, participating in the management zone. Participating in the management zone includes assisting in the implementation of the Early Action Plan, and assisting in developing the Revised Management Zone Proposal. For dischargers that are subject to a General Order as a member of a Third Party Group, Third Party Group participation on behalf of its members shall constitute discharger participation.

3.2.2.4 Revision of WDRs/Compliance with SNMP

Per the Groundwater Management Zone Policy, the Central Valley Water Board will revise WDRs/Conditional Waivers for those dischargers participating in the management zone after receiving the Final Management Zone Proposal. Requirements for a Final Management Zone Proposal are identified in the Groundwater Management Zone Policy (see SNMP Attachment A-1). Revisions to relevant WDRs/Conditional Waivers may occur individually, or through a resolution that amends all applicable WDRs/Conditional Waivers.

Generally, the Central Valley Water Board will require management zone participants in the WDRs/Conditional Waivers to participate in development of a detailed Management Zone Implementation Plan, and upon Central Valley Water Board approval of the Management Zone Implementation Plan, to immediately transition to implementation of the approved Plan.

To comply with the SNMP, the Final Management Zone Proposal will indicate if the management zone is seeking compliance through the allocation of assimilative capacity as allowed in the Groundwater Management Zone Policy, or through an exception to meeting the water quality objective for nitrate as set forth in the Exceptions Policy.

5.0 Proposed Modifications to the Basin Plans to Support Policy Implementation

The following subsections summarize the key changes anticipated for each Basin Plan to support adoption of this policy.

Existing and Potential Beneficial Uses

No modifications anticipated.

Water Quality Objectives

No modifications anticipated.

Implementation

Incorporate the relevant elements of this Policy into the Basin Plans to describe the permitting approach for nitrate in groundwater.

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