



CALIFORNIA ASSOCIATION of SANITATION AGENCIES

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July 22, 2016

Richard Meyerhoff, PhD
CV-SALTS Technical Project Manager
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Denver, CO 80202
Via electronic mail: meyerhoffrd@cdmsmith.com

SUBJECT: PROPOSED POLICY DOCUMENTS FOR CV-SALTS

Dear Dr. Meyerhoff:

The California Association of Sanitation Agencies (CASA) appreciates the opportunity to provide comments on proposed policy documents associated with the development of the salt and nitrate management plan for the Central Valley. For 60 years, CASA has been the leading voice for public wastewater agencies on regulatory, legislative and legal issues. We are an association of local agencies, engaged in advancing the recycling of wastewater into usable water, generation of renewable energy, and other valuable resources. Through these efforts we help create a clean and sustainable environment for Californians.

Having recently reengaged in the CV-SALTS process, CASA applauds the Executive Committee on the thought and effort that has gone into these proposed policies. CASA believes the adoption of policies and plan provisions to authorize offsets and exceptions, as well as to clarify the appropriate application to ambient waters of standards developed for drinking water at the tap, are critical to the success of salt and nutrient management efforts for the central valley. We also hope that the policies developed in this process will serve as models for other regions of the state that are struggling to address complex watershed challenges.

Specific comments on each of these draft policies are provided in the attachments. In addition to the specific wording of the policies, however, we wish to emphasize the necessity of having these tools in order to achieve salinity reductions, provide safe drinking water and ensure surface and ground water quality improvements.

Exceptions

The challenges of managing salts in the valley have developed over many years, and it is commonly acknowledged that reversing the legacy of decades will itself take decades. This is the case even without regard to current discharges. There are situations when there is little or no assimilative capacity available, and a discharge is not better than the water quality objective, and the Board has very limited options: revise the applicable use designations and/or objectives or prohibit the discharge. Thus, unless the Board wishes to prohibit agriculture, they must have the ability to grant exceptions to strict compliance

with water quality standards where it is infeasible, impracticable or unreasonable for dischargers to comply with water quality objectives even if provided time to comply.

CASA supports the deletion of the current sunset date for the granting of exceptions. We recommend that the term for an exception not be limited to 10 years. There is widespread recognition within CV-SALTS that in some cases, compliance cannot be feasibly attained for decades. This is consistent with USEPA's 2015 water quality standards regulation authorizing variances from water quality standards for surface waters, which does not impose a limitation on the duration of a variance. The regulation states that the "term of the WQS variance must only be as long as necessary to achieve the highest attainable condition and consistent with the demonstration provided in paragraph (b)(2) of this section." The regulation also allows for a subsequent WQS variance where specific requirements are met. In enacting this rule, USEPA cited the need to address challenging water quality issues such as nutrients that will require longer and more innovative implementation.

Offsets

Unlike exceptions, offsets are not a mechanism to address the inability of a discharger to comply. Rather, offsets are an alternative avenue to achieve compliance, but at a lower cost and often with greater benefits. The simplest example is where, from a purely technical standpoint, a point source discharger such as a POTW *could* comply with salinity limits at the end of pipe through additional expensive, energy intensive treatment. Yet the cost to do so would be staggering, and the improvements to groundwater or surface water negligible. If the point source can instead invest a portion of those funds to address other sources of salinity, the result would be greater water quality benefit. Offset and trading programs for temperature, nutrients and other constituents have been successfully implemented in Oregon, Idaho, South Carolina and elsewhere. Rather than allowing noncompliance for economic or technical reasons, these projects are rightly viewed as success stories where greater benefit in the form of ambient water quality improvement has been achieved than would have resulted from simply imposing an end of pipe permit limit.

There have been discussions within the Executive Committee where it has been suggested that offsets would "mask" noncompliance or otherwise allow entities to avoid compliance without going through the exceptions process. This is simply not the case. As USEPA has recognized, water quality trading or offsets is one approach that jurisdictions may use to achieve requirements and can provide greater efficiency in achieving water quality goals in watersheds.

Secondary MCLs

The Board is committed to (and obligated to) protect the municipal drinking water use. The current basin plan approach of applying secondary non human health based MCLs developed for customer acceptance at the tap has had the effect of requiring POTW dischargers to meet more stringent requirements at the end of the pipe, for discharge into surface or ground water, than required of a drinking water purveyor. During prior

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triennial reviews, CASA and CVCWA have argued that the SMCLs should be removed from the Basin Plan entirely, as they are neither human health nor aquatic life based. The Board has declined to do so, but has recognized that the way the objectives are currently expressed has limited its discretion to apply these objectives to be protective of the drinking water use while not unreasonably burdening dischargers. In the past, POTWs have been required to meet effluent limits for iron and manganese that were derived to guard against laundry staining and discoloration, that presented compliance challenges because these constituents were present in the groundwater source.

As noted in the policy document, the other regional boards do not uniformly rely on SMCLs; instead, several regional boards use narrative objectives to protect the MUN use rather than apply a single value in every case. The proposed policy will allow the Board to consider the same factors and guidance that are contained in the adopted drinking water regulation, as well as to determine compliance for metals using the dissolved fraction, consistent with USEPA guidance and regulation for water quality compliance.

Please let me know if you have any questions regarding CASA's comments.

Sincerely,



Roberta L. Larson
Executive Director

cc: Daphne Orzalli, CV-SALTS Administrator

CASA Comments

7-22-16

Draft Policy No. X: Revision of the Exceptions Policy for Waste Discharges to Groundwater

1.0 Regulatory Basis for Revision of the Exceptions Policy for Waste Discharges to Groundwater

1.1 Background

As described in the Nitrate Permitting Strategy in the SNMP,¹ the Central Valley Regional Board is required to implement the Basin Plans when it authorizes discharges through the adoption of WDRs and Conditional Waivers. This includes incorporating into the WDRs/Conditional Waivers provisions that ensure beneficial uses are protected, and that receiving waters meet or are better than water quality objectives that are adopted to protect beneficial uses. When permitting discharges, the Central Valley Water Board traditionally looks to see if the discharge itself meets (or is better than) the applicable water quality objective, and if not, determines if assimilative capacity is available in the receiving water. In cases where there is assimilative capacity, the Central Valley Water Board ~~then determines~~considers the particular facts of the discharge to determine whether if it can make the ~~necessary~~findings as-required by Resolution No. 68-16² to authorize use of assimilative capacity.

In the Central Valley, there may be circumstances where the discharge is not better than the applicable water quality objective and no assimilative capacity is available, or the Central Valley Water Board is unable to make the ~~necessary~~findings necessary to authorize use of assimilative capacity even if it is available. Traditionally, in such circumstances, the State Water Board has directed that Central Valley Water Board either prohibit the discharge, adopt a time schedule in the order that ~~allows~~requires the discharger to come into compliance with needed WDR provisions, or revise the applicable water quality standard.

The Central Valley Water Board has recognized that with respect to salts, it may not be reasonable, feasible or practical to prohibit the discharge or issue a time schedule with the expectation that the discharge can meet applicable water quality objectives in a reasonable time period. Further, the Central Valley Water Board is ~~hesitant~~reluctant to revise water quality standards, which would permanently remove the beneficial use. ~~Accordingly~~To provide another alternative, the Central Valley Water Board adopted a Policy for Exceptions from Implementing Water Quality Objectives for Salinity (Exceptions Policy) in Resolution No. R5-2014-0074, on June 6, 2014. The State Water Board approved that policy in Resolution No. 2015-0010, on March 17, 2015. The Policy amended the Basin Plans and established “*procedures for dischargers that are subject to*

¹ See SNMP **Section XX**

² State Water Board Resolution 68-16. Statement of Policy with Respect to Maintaining High Quality of Waters in California (Antidegradation Policy). 1968

WDRs and conditional waivers to obtain a short-term exception from meeting effluent or groundwater limitations for salinity constituents.”³

~~With the~~The Exceptions Policy, ~~the Central Valley Water Board~~ established a Salinity Exception Program that is “*in effect during the development and initial implementation of the Salt and Nitrate Management Plans*”⁴ ~~that at the time were~~ being prepared through the CV-SALTS process. The Salinity Exception Program (aka “Streamlined Policy”) applies only to electrical conductivity, total dissolved solids, chloride, sulfate and sodium.⁵ The current Exceptions Policy prohibits the Central Valley Water Board from authorizing new exceptions or reauthorizing previously approved exceptions after June 30, 2019. The sunset date was included because the Central Valley Water Board intended that any permanent, long-term exceptions policy should be developed through the CV-SALTS process and that stakeholders needed to make appropriate recommendations for such a policy in the SNMP.

In accordance with the Central Valley Water Board’s direction in developing the current Salinity Exceptions Program, this SNMP recommends that the current Exceptions Policy be revised.

1.2 Justification for Extending/Expanding the Current Exceptions Policy

The Central Valley Water Board's original rationale for adopting the current Exceptions Policy was to provide temporary permitting flexibility while CV-SALTS was developing the SNMP, and to encourage dischargers throughout the region to actively participate in that process. If CV-SALTS stakeholders determined that a permanent Exceptions Policy is necessary to assure successful implementation, the Central Valley Water Board instructed the stakeholders to describe and justify their recommendations in the SNMP itself. This policy is intended to implement that recommendation.

Commented [??1]: These seems to simply restate the paragraph above. Recommend deleting.

The SNMP finds that there may be instances where it is infeasible, impracticable or unreasonable for dischargers to comply with certain WDR requirements even with a compliance schedule. Under such circumstances, and when there is little or no assimilative capacity available, as stated above, the Central Valley Water Board presently has only two regulatory options available: (a) where appropriate, revise the applicable water quality standards and related WDRs, or (b) disallow the discharge.

Revising water quality standards (uses and or objectives) is a complex, timely process requiring considerable documentation and numerous opportunities for public comment. Consequently, legally allowing for an exception to meeting the objective may be needed to provide time to complete the full regulatory review and approval process for revising the water quality standard. Or, in many cases, the Central Valley Water Board will be hesitant-reluctant to revise the water quality standard and would prefer to adopt an

³ Central Valley Water Board Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins and the Water Quality Control Plan for the Tulare Lake Basin To add Policies for Variances from Surface Water Quality Standards for Point Source Dischargers, Variance Program for Salinity, and Exception from Implementation of Water Quality Objectives for Salinity; Final Staff Report, June 2014, Final Staff Report (“Variance & Exceptions Policy”); page ES-3.

⁴ Variance & Exceptions Policy; page ES-3.

⁵ Variance & Exceptions Policy; page 51.

exception that is **discharger specific and** time-limited rather than **permanently revise a general and more lasting** water quality standard **revision**.

Commented [??2]: WQS revisions are not legally permanent. They can be revised again.

Prohibiting the discharge may also be infeasible, impracticable or unreasonable. If the Central Valley Water Board determines that a non-compliant discharge cannot or should not be prohibited, then some form of exception is required. Examples of situations where the Central Valley Water Board may conclude that it is infeasible, impracticable or unreasonable to prohibit the non-compliant discharge include, but are not limited to:

- 1) Situations where compelling the discharge to comply with the applicable WDR, ~~and assuming it was possible to do so,~~ would not significantly improve water quality or assure attainment of the related standards in the foreseeable future (≈ 20 years).
- 2) Situations where allowing the discharge is likely to result in nominal but insignificant changes in receiving water quality with no meaningful increase in public health risk.
- 3) Situations where disallowing the discharge would likely result in widespread and substantial adverse social and economic impacts in the region.
- 4) Situations where allowing the discharge is projected to improve existing or expected quality in the receiving water; or, where **disallowing-prohibiting** the discharge would be more harmful to water quality and/or the environment than allowing it to continue despite the failure to comply with the WDR **provision** for which the exception is sought.
- 5) Situations where allowing the discharge to continue is necessary to preserve or sustain other beneficial uses, or to implement other important water resource management policies established by state authorities (e.g., increased water conservation, increased use of recycled water, increased groundwater recharge/storage, increased drought protection, etc.).
- 6) Situations where allowing the discharge to continue facilitates the Central Valley Water Board's larger and more comprehensive long-term program to achieve salt sustainability and, where feasible, attain water quality standards in the groundwater (aka "restoration").

Commented [??3]: How are these different?

2.0 Proposed Revisions to Exceptions Policy

2.1 Summary of Current Exception Policy

The current Exceptions Policy (adopted in June of 2014) restricts the Central Valley Water Board's authority solely to exceptions for salinity-related constituents. Presently, the definition of "salinity" includes **only**: electrical conductivity, total dissolved solids, chloride, sulfate and sodium. The current Policy does not provide the Central Valley Water Board with legal authority to approve exceptions for any other pollutants, including nitrate.

Notably, the **current authority to approve an exception policy** does not automatically grant an exception in any given instance. Exceptions must be authorized through a separate Board action. Also, under the current policy, exceptions must "...*be set for a term not to*

*exceed ten years. For exception terms greater than five years, the Regional Board will review the exception five years after approval to confirm that the exception should proceed for the full term.”*⁶ That review must be conducted in a public hearing.

In general, the current Exceptions Policy allows dischargers to apply to the Central Valley Water Board for an exception to discharge requirements from the implementation of water quality objectives for salinity. The exception may apply to the issuance of effluent limitations and/or groundwater limitations (i.e., receiving water limitations) that implement water quality objectives for salinity in groundwater, or to effluent limitations and/or surface water limitations that implement water quality objectives for salinity in surface water. Under the current Exception Policy, a discharger’s application must include the following:⁷

- An explanation/justification as to why the exception is necessary, and why the discharger is unable to ensure consistent compliance with existing effluent and/or groundwater/surface water limitations associated with salinity constituents at this time;
- A description of salinity reduction/elimination measures that the discharger has undertaken as of the date of application, or a description of a salinity-based watershed management plan and progress of its implementation;
- A description of any drought impacts, irrigation, water conservation and/or water recycling efforts that may be causing or cause the concentration of salinity to increase in the effluent, discharges to receiving waters, or in receiving waters;
- Copies of any documents prepared and certified by another state or local agency pursuant to Public Resources Code Section 21080 et seq.; or, such documents as are necessary for the Regional Water Board to make its decision in compliance with Public Resources Code Section 21080 et seq.;
- Documentation of the applicant’s active participation in CV-SALTS as indicated by a letter of support from CV-SALTS; and,
- A detailed plan of how the applicant will continue to participate in CV-SALTS and how the applicant will contribute to the development and implementation of the SNMPs.

A key requirement ~~for granting where~~ an exception ~~is granted~~, is the ~~requirement that obligation of~~ the discharger ~~to needs to~~ prepare and implement a Salinity Reduction Study Work Plan, or a salinity-based watershed management plan. A Salinity Reduction Study Work Plan shall at a minimum include the following:⁸

- 1) Data on current influent and effluent salinity concentrations;
- 2) Identification of known salinity sources;
- 3) Description of current plans to reduce/eliminate known salinity sources;

⁶ Variance & Exceptions Policy; page 51.

⁷ Variance & Exceptions Policy; page 50.

⁸ Variance & Exceptions Policy; page 51.

- 4) Preliminary identification of other potential sources;
- 5) A proposed schedule for evaluating sources; and
- 6) A proposed schedule for identifying and evaluating potential reduction, elimination, and prevention methods.

A salinity-based watershed management plan shall at a minimum include the following:⁹

- 1) A discussion of the physical conditions that affect surface water or groundwater in the management plan area, including land use maps, identification of potential sources of salinity, baseline inventory of identified existing management practices in use, and a summary of available surface and/or groundwater quality data;
- 2) A management plan strategy that includes a description of current management practices being used to reduce or control known salinity sources;
- 3) Monitoring methods;
- 4) Data evaluation; and,
- 5) A schedule for reporting management plan progress.

After considering the discharger's application, the Central Valley Water Board may adopt an exception for salinity constituents after public notice and hearing through a resolution, or by amending WDRs/Conditional Waivers.

2.2 Recommendations for Revising Current Exceptions Policy

The SNMP recommends that the current policy be amended in the following ways to provide the Central Valley Water Board with the necessary authority and flexibility to permit discharges in a manner that the Central Valley Water Board deems to be appropriate.

- 1) Delete the provision prohibiting the Central Valley Water Board from authorizing new exceptions or reauthorizing previously approved exceptions after June 30, 2019. Because the Central Valley Water Board can decide for itself whether to grant or not grant specific exceptions, there is no need for any sunset provision that restricts their overall authority to make such decisions.
- 2) The current provision limiting the term of an exception to no more than 10 years should be ~~retained, however, deleted.~~ ~~a~~ A new provision should be added stating that exceptions may be reauthorized (renewed) for ~~one or more~~ additional ~~10-year~~ periods with approval of the Central Valley Water Board, after notice and hearing. In addition, the discharger(s), in conjunction with Central Valley Water Board staff, should prepare a status report for presentation to the Central Valley Water Board every 5 years summarizing compliance with the terms and conditions of the exception. The Central Valley Water Board staff maintains discretion to present such

⁹ Variance & Exceptions Policy; page 52.

status reports to the Central Valley Water Board for individual exceptions, or collectively for multiple exceptions granted to multiple dischargers.

- 3) The current policy should be amended to add nitrate to the list of chemical constituents for which the Central Valley Water Board may authorize an exception. In order to ensure this is implemented as intended, it may also be necessary to include total nitrogen and various forms of nitrogen (total inorganic nitrogen [TIN], total kjeldahl nitrogen [TKN], etc.) to the same list. It will also be necessary to harmonize text throughout the existing policy where such text currently focuses exclusively on exceptions for “salinity.”
- 4) The current policy should be amended to add a new provision requiring dischargers to assure an adequate supply of safe, reliable and affordable drinking water, as a condition of authorizing an exception for nitrate, in those areas of the groundwater basin or sub-basin adversely affected by the non-compliant discharge (or discharges). The “assurance” must include a credible and realistic framework to construct/install a permanent long-term solution and an immediate commitment to provide temporary replacement water in the interim.
- 5) The current policy should be amended to add a new provision referencing the availability of regional guidance that describes the general requirements associated with seeking and approving an exception. These include, but are not limited to: eligibility criteria, mitigation responsibilities, monitoring/reporting obligations, and expectations relevant to implementing the SNMP Management Goals. The Regional Guidance will be developed and submitted for approval as part of the larger Basin Plan Amendment package in 2017.
- 6) The current policy should be amended to make clear that exceptions are intended to facilitate long-term attainment of water quality standards or to provide the time needed to revise an inappropriate water quality standard. The Central Valley Water Board may renew and reauthorize exceptions but should not do so indefinitely if re-designation, de-designation and/or adoption of a site-specific water quality objective is the more appropriate regulatory approach.
- 7) The current policy should be amended to revise the application requirements so that such requirements ~~now~~ reflect and implement the SNMP management goals. Further, the application requirements should be revised to distinguish what requirements are applicable when seeking an exception from a salinity-based water quality objective versus applicable requirements for seeking an exception from the nitrate water quality objective.
- 8) The current policy may also need to be amended to identify application requirements that apply to dischargers seeking an exception as part of a Management Zone rather than as an individual discharger. For more information on Management Zones, see Policy No. XX.

2.3 Authorization of Exceptions

The SNMP recommends that exceptions be authorized by the Central Valley Water Board subject to certain conditions and performance obligations on the discharger(s). This provides a mechanism to ensure that exceptions serve the greater good. To that end, the SNMP sets forth several important expectations governing the manner in which exceptions are likely to be considered by the Central Valley Water Board:

- 1) Exceptions for nitrate will not be considered unless an adequate supply of clean, safe, reliable and affordable drinking water is assured for those living in the area adversely affected by the non-compliant discharge(s). Said assurance must take the form of a detailed work plan, schedule of milestones, and financial commitments to provide interim and permanent alternate water supplies. Performance bonds may be required to assure timely implementation.
- 2) Dischargers are expected to continue to make reasonable “best efforts” to comply with applicable WDRs. The specific nature of these efforts will be identified at the time the exception is proposed and authorized.
- 3) As a condition for reauthorizing/renewing an exception, dischargers will be required to periodically reassess Best Management Practices (BMPs) and survey available treatment technologies to determine if feasible, practicable and reasonable compliance options have become available.
- 4) Where exceptions are sought in order to provide time to develop and approve a more appropriate water quality standard (uses and/or objectives), there must be a well-defined work plan (including a schedule of milestones) and a commitment by dischargers to provide the resources needed to complete the proposed process.
- 5) Where existing water quality standards are unlikely to change, dischargers must explain how the proposed exception facilitates the larger long-term strategy designed to ultimately attain those standards (e.g., implementing Strategic Salt Accumulation Land and Transportation Study [SSALTS];¹⁰ Nitrate Implementation Measures Study [NIMS],¹¹ forming and participating in a groundwater Management Zone,¹² etc.) while, in the interim, allocating available resources to address more urgent water quality priorities (e.g., safe drinking water), where applicable.

Under the SNMP’s recommendations, authorization for exceptions may be granted by the Central Valley Water Board for individual dischargers, or for multiple dischargers under a Management Zone. Terms and conditions associated with the granting of an exception will be incorporated into relevant WDRs, and failure to comply with such terms and conditions may result in the termination of the exception and/or an enforcement action.

¹⁰ *Strategic Salt Accumulation Land and Transportation Study (SSALTS), Final Phase 2 Report: Development of Potential Salt Management Strategies*. Report prepared by CDM Smith on behalf of CV-SALTS. October 1, 2014; *SSALTS, Final Phase 1 Report: Identification and Characterization of Existing Salt Accumulation Areas*. Report prepared by CDM Smith on behalf of CV-SALTS. December 13, 2013. Phase 3 Report in development.

¹¹ *Nitrate Implementation Measures Study Final Report*. Report prepared by CDM Smith on behalf of CV-SALTS, March 31, 2016.

¹² See Central Valley SNMP for Management Zone Policy.

3.0 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

Revise the existing Exceptions Policy in the Basin Plans as described above.

CASA Comments
7-22-16

Draft Policy No. X: Principles to Govern Development of an "Offsets" Policy for Permitting Discharges to Groundwater

What is an "Offset"?

An alternative means of achieving ~~partial or complete~~ compliance with Waste Discharge Requirements (WDRs), ~~either alone or in combination with other actions,~~ for a given pollutant or pollutants. ~~An offset allows for by~~ managing other sources and loads (not directly associated with the regulated discharge) so that the combined net effect on receiving water quality from the discharge and the offset is functionally-equivalent to (and often better) than that which would have occurred by requiring the discharger to comply with ~~its their~~ WDRs at the point-of-discharge. ~~The decision to pursue an o~~Offsets ~~is are~~ voluntary. They must be proposed by the discharger¹³ as an Alternative Compliance Program (ACP), must be approved by the Central Valley Water Board, and are enforceable through ~~the a~~ WDR or other orders issued by the Board. Page 5 and following of this Policy document provides examples of potential applications of an Offsets Policy.

What is the purpose for establishing an Offsets policy?

- 1) Offsets provide a mechanism, ~~other than approving an exception,~~ for permitting non-compliant discharges in an area that lacks assimilative capacity while continuing to make progress toward attainment of water quality standards in the basin or Management Zone.
- 2) Offsets provide a regulatory alternative, other than prohibiting the discharge, when it is infeasible, impracticable or unreasonable to ~~require compliance y~~with WDRs directly.
- 3) Offsets provide another potential method for permitting discharges with pollutant concentrations greater than the objective or higher than the current receiving water quality and can provide better overall improvement or result in less degradation in that receiving water basin, sub-basin or Management Zone.
- 4) Offsets provide a mechanism to re-target the resources required to achieve compliance in order to produce greater public benefits (better net water quality, lower cost, less risk, etc.).
- 5) Offsets provide a mechanism whereby diverse dischargers within the same Management Zone can pool available resources to implement ACPs, in phases, on a risk-priority basis. The option to pool resources creates a strong incentive to establish such Management Zones.
- 6) Offsets provide a mechanism to develop and fund large-scale, long-term regional water quality improvement projects such as described by the Strategic Salt Accumulation Land

¹³ Throughout this document the term "discharger" can connote either an individual discharger or a coalition of dischargers regulated under a common set of categorical WDRs.

and Transportation Study (SSALTS)¹⁴ or the Nitrate Implementation Measures Study (NIMS)¹⁵ by recognizing participation in such efforts as partial credit toward compliance.

- 7) Offsets create a market-based incentive to establish Mitigation Banks designed to develop and implement water quality improvement projects. This is particularly useful for pooling the resources of many relatively small dischargers into a critical mass of funding to support projects that would normally be beyond their individual means.
- 8) Offsets encourage creative solutions to complex problems by measuring success at the most critical endpoint: Net effect of water quality on end-users. This outcome-oriented approach is consistent with the primary purpose for imposing water quality standards-based permit requirements in the first place.
- 9) The current Central Valley Basin Plans do not authorize the Central Valley Water Board to consider offsets when evaluating compliance. If such authority is added to the Basin Plans the Board must take separate action, through the normal public notice and hearing process, to consider and approve any proposed offset.

Where do Offsets fit within the array of existing regulatory options?

- 1) When offsets are employed, compliance is assessed by considering the aggregate net effect of the discharge and the offset project(s) on receiving water quality. Consequently, if a discharge requires an offset in order to achieve compliance with one or more receiving water limitations, then implementation of the offset must be enforceable through the WDRs.
- 2) Where an allocation of assimilative capacity is sought, implementing an offset project may be the best practicable treatment or control that is most consistent with maximum benefit to the people of the state. This is particularly true where the net effect on receiving water quality and/or end users is better than would otherwise occur by requiring strict compliance with water quality standards at the point of discharge. In such cases, implementing the proposed offset project would become a condition for allocating assimilative capacity to the discharge.
- 3) Where there is no assimilative capacity available, or the Central Valley Water Board is unwilling to allocate the available assimilative capacity,¹⁶ offsets can be used to minimize the net negative affect on receiving water quality as a condition for authorizing an exception to a non-compliant discharge. In such cases, the offset program may be used to help demonstrate that the discharger is making “reasonable progress” at mitigating excess pollutant loads where feasible and practicable. Implementation of the offset project would become a condition for granting the exception and be enforceable through the WDRs.

¹⁴ *Strategic Salt Accumulation Land and Transportation Study (SSALTS), Final Phase 2 Report: Development of Potential Salt Management Strategies*. Report prepared by CDM Smith on behalf of CV-SALTS. October 1, 2014; *SSALTS, Final Phase 1 Report: Identification and Characterization of Existing Salt Accumulation Areas*. Report prepared by CDM Smith on behalf of CV-SALTS. December 13, 2013.

¹⁵ *Nitrate Implementation Measures Study (NIMS) Final Report*. Report prepared by CDM Smith on behalf of CV-SALTS, March 31, 2016

¹⁶ California Water Code §13263(b)

- 4) Offsets have been most commonly and successfully applied where a formal load allocation has been established for a given pollutant in a given receiving water. The presence of an accepted procedure for calculating and assigning pollutant loads also facilitates the process needed to validate and account for credits generated by the offset program.
- 5) Although offset projects may be proposed for any type of discharge, they are a particularly useful tool to implement more cost-effective water quality control strategies where the Central Valley Water Board has elected to “prescribe general waste discharge requirements for a category of discharges”¹⁷. Historically, the large number of non-point source discharges spread over a wide area makes it very time-consuming and expensive to assemble all of the documentation required by the state's Nonpoint Source Policy.¹⁸ Offsets may offer the opportunity to focus and simplify the process so that some of the monitoring and reporting resources can be redirected to accelerate or expand water quality improvement projects.

Under what conditions should an Offset be considered?

- 1) When it is not feasible, practicable or reasonable for the discharge to comply directly with applicable WDRs. WDRs normally require “direct” demonstration of compliance either at the point-of-discharge or at the confluence with the receiving water. Evaluating compliance at the confluence with receiving water allows the Central Valley Water Board to consider pollutant reductions that may occur as a result of system mixing or by the process of percolating through the ground to the aquifer.¹⁹
- 2) When it is not feasible, practicable or reasonable to prohibit a discharge that is unable to comply with applicable WDRs. This situation may also necessitate that the Central Valley Water Board approve a conditional exception where the offset is one of the conditions.
- 3) When there is no assimilative capacity available in the receiving water or as a condition for allocating any available assimilative capacity in order to authorize a discharge. This situation may also require the Central Valley Water Board to approve a conditional exception.
- 4) When the net effect of authorizing the discharge, including the proposed offset project, would result in better water quality in the groundwater basin or sub-basin than is likely to occur if the discharge was required to comply with the applicable WDRs at the point-of-discharge.
- 5) When the net effect of authorizing the discharge, including the proposed offset project, would result in better water quality in the receiving water than would be expected to occur if the non-compliant discharge was prohibited altogether.

Commented [??4]: Is this really an offset? Where an exception is required, an action similar to an offset may be required as a condition, but it seems confusing to call it an offset. Offsets are a tool to achieve compliance.

Commented [??5]: Same comment

¹⁷ California Water Code §13263(i); examples: WDRs issued to the dairy industry or various agricultural coalitions.

¹⁸ Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program. State Water Board Resolution No. 2004-0030, May 20, 2004.

¹⁹ State Water Board Water Quality Order 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 (see pg. 6).

- 6) When the proposed offset project will provide substantially greater and more immediate public health protection (e.g., real risk reduction) than is expected to result if the discharger was-were required to comply with the applicable WDRs at the point-of-discharge or the non-compliant discharge was-were prohibited completely.
- 7) When the proposed offset project is an integral part of and facilitates a larger strategic plan designed to ultimately achieve attainment of water quality standards through a phased program of implementation that has been reviewed and approved by the Central Valley Water Board.
- 8) Other “factors” the Central Valley Water Board will consider when deciding whether to approve a proposed offset program/project include, but are not limited to: Relative location of the discharge and offset project and potential impacts on downgradient waters, reliability of the recharge, whether recharge-based offsets constitute genuine “new” groundwater recharge, impacts on the vadose zone over time, mixing assumptions, brine disposal, and whether the offset is proposed as a temporary or permanent alternate compliance strategy.

What implementation requirements should apply to Offsets?

- 1) Offsets should be consistent with the local plan to manage salt and nitrate. And, in general, it is desirable to encourage offsets in the same groundwater basin or sub-basin where the discharge occurs. However, the Offsets Policy is also intended to incentivize implementation of some large-scale projects such as a regional regulated brine line or a Mitigation Bank established to provide safe drinking water.
- 2) When there is no assimilative capacity available in the receiving water, the offset must result in a net improvement in water quality (e.g., the offset ratio must be > 1:1) compared to baseline regulatory requirements. Offset ratios < 1:1 may be authorized only in accordance with the state’s antidegradation policy unless an exception is granted or Time Schedule Order (TSO) allows a less stringent interim ratio to apply.
- 3) Offsets must be for substantially the same pollutant. Cross-pollutant trading (e.g., total dissolved solids (TDS) for nitrate, nitrate for arsenic, etc.) should not be construed as true “offsets.” However, such “trading” may be permissible when there is assimilative capacity available for the pollutant being discharged and the discharger proposes to significantly reduce a different pollutant in the receiving water in a manner that provides “maximum benefit to the people of the state.”
- 4) The proposed package (discharge + offset project) cannot result in unmitigated localized impairments (e.g., “hotspots”) to sensitive areas (especially drinking water supply wells). This situation can best be addressed by implementing offsets within Management Zones that provide other mechanisms to assure water users remain protected. Downgradient well owners must be notified and encouraged to participate in the offset approval process. Additional mitigation may be required.
- 5) Offsets must be approved by the Central Valley Water Board. The Board may elect to pre-approve specific offset projects (a 1-step process) or authorize the general use of offsets within a given order and then approve individual offset projects in subsequent Board actions (e.g., a 2-step procedure). All terms and conditions governing

implementation of the proposed Offsets Policy must be enforceable through a WDR, Waiver or other enforcement order. Failure to comply with the terms and conditions of an offset approved by the Central Valley Water Board could constitute a violation of the underlying permit or enforcement order.

- 6) Offsets apply to a specific discharge for a defined period. Offsets can be renewed but must be periodically reviewed and reauthorized by the Central Valley Water Board. The length of that period will be specified by the Central Valley Water Board when the offset is approved.
- 7) The terms and conditions governing an approved Offset should specify the remedial actions that must be undertaken by the discharger, and the metric(s) used to trigger such obligations, in the event that the offset project fails for some reason.
- 8) The offset project must include a monitoring and reporting program sufficient to verify that the pollution reduction credits are actually being generated as projected and that these credits are adequate to meet offset the discharge loads in the ratio approved by the Central Valley Water Board. Pollutant removal, reduction, neutralization, transformation and dilution may all be acceptable means of generating offset credits (subject to appropriate verification).

Commented [??6]: Should this be reasons outside the control of the discharger?

Hypothetical Examples to Illustrate the Offset Concept²⁰

Offset Example #1: Equivalent Discharge Concentration

Company X is seeking to discharge 10,000 gallons/day with an average TDS concentration of 1,200 mg/L to a groundwater basin with a TDS objective of 900 mg/L and a current average quality of 2,000 mg/L. Because there is no assimilative capacity available, the Central Valley Water Board intends to issue a WDR that restricts TDS concentrations in the discharge to no more than 900 mg/L. To meet this requirement, Company X would need to reduce the TDS in its discharge by 11.4 kg/day.

Company X proposes to construct and operate stormwater recharge basins in the area overlying the same groundwater basin. The new basins are expected to increase the total amount of precipitation that percolates to groundwater by 6 acre-foot/year (approximately 2 million gallons). The captured runoff has an estimated average TDS of 100 mg/L. The combined effect of the wastewater discharge and stormwater capture is 5.6 million gallons/year of recharge with a total volume-weighted average TDS concentration of 807 mg/L. The estimated offset ratio = 1.32:1 (Note: Long-term averaging required to implement this approach).

Offset Example #2: Equivalent Mass Reduction

Company X is seeking to discharge 10,000 gallons/day with an average TDS concentration of 1,200 mg/L to a groundwater basin with a TDS objective of 900 mg/L and a current average quality of 2,000 mg/L. Because there is no assimilative capacity

²⁰ These examples are not being proposed as archetypes. They are offered solely to stimulate discussion regarding potential application of the Offsets Policy and identify the key issues and concerns related to using offsets.

available, the Central Valley Water Board intends to issue a WDR that restricts TDS concentrations in the discharge to no more than 900 mg/L. To meet this requirement, Company X would need to reduce the TDS in its discharge by 11.4 kg/day.

Company X proposes to construct and operate a desalter in the worst area of the same groundwater basin where the average TDS concentration is 4,000 mg/L. They will pump and treat 1,000 gallons/day for the benefit of a nearby community. The reverse osmosis treatment system will reduce the average TDS concentration in the product water to 200 mg/L (effectively removing 3,800 mg/L or about 14.4 kg/day). The estimated offset ratio = 1.25:1.

Offset Example #3: Alternate Load Reduction - Eliminate Septic System

A municipal discharger operates a wastewater treatment facility using a series of unlined ponds that overlie a groundwater basin with no assimilative capacity for nitrate-nitrogen. The average nitrate concentration in the discharge is 14 mg/L. As the city grows, the discharger plans to replace the present treatment with an activated sludge system that will reduce the average nitrate concentration to < 10 mg/L. However, this upgrade is not scheduled to begin until 2024. In lieu of accelerating the construction plans to meet the current WDRs, the discharger proposes to expand the existing collection system to provide sewer services in an adjacent, upgradient community and to install additional aeration at the ponds to reduce the average Total Inorganic Nitrogen (TIN) concentration from 14 mg/L down to 13 mg/L. Mass balance calculations show that intercepting and treating sewage currently going to septic systems in that community and upgrading aerators will reduce the combined TIN load by 2% more than building the activated sludge system early. Expanding the collection system is estimated to cost less than one-third what it will cost to build the new wastewater treatment plant and will expand the utility's rate base by 10%. It will also result in the current pond system reaching capacity one year sooner than would occur under normal growth conditions. Therefore, the discharger also intends to begin the plant upgrade one year earlier than previously planned (i.e., 2023 instead of 2024). This project might also be implemented thru a traditional compliance schedule or TSO.

Offset Example #4: Planning & Design Work for Large Regional Projects

A coalition of agricultural dischargers, operating under a common set of categorical WDRs, are discharging salts to the underlying groundwater basin where the average TDS concentration is 1,100 mg/L and no assimilative capacity exists. The agricultural operators are using the best available water supply (TDS = 175 mg/L) to irrigate their fields; but, with a 15% leaching fraction, the recharge quality averages approximately 1,050 mg/L. This is slightly better than the receiving water quality but slightly worse than the "Upper" end of the acceptable TDS range specified for the Secondary Maximum Contaminant Levels.²¹ However, TDS concentrations in the drinking water wells throughout the area are generally less than 700 mg/L. In lieu of increasing the leaching fraction, the dischargers are proposing to fund the first phase of the proposed long-term salt mitigation strategy identified in SSALTs, i.e., construction of a regulated brine line. This effort would focus primarily on preliminary engineering analysis (e.g., siting

²¹ California Water Code 22 §64449, Table 64449-B.

priorities), initial CEQA review, and regulatory permitting. The dischargers also propose to support the outreach efforts needed to secure the federal and state grant funding needed to pay for the capital construction anticipated in some subsequent phase of the program. This “offset” might also be approved as a condition for authorizing an exception to WDRs.

Offset Example #5: Alternate Water Supply

An industrial discharger disposes of its wastewater by a land application system that irrigates silage crops grown in a 500 acre parcel. This parcel overlies a groundwater basin where the average nitrate concentration is 30 mg/L (no assimilative capacity). There is an economically-disadvantaged community immediately adjacent to and upgradient from the discharger's property. The community draws its drinking water from the same basin and the groundwater is contaminated by both nitrate and naturally-occurring arsenic. In lieu of reducing nitrate in the discharge, the discharger proposes to construct and operate a well-head treatment system that will reduce nitrate and arsenic levels in the upgradient community's drinking water so that it easily complies with state and federal drinking water standards.

Offset Example #6: Nitrate Mitigation Bank

A Non-Governmental Organization (NGO) seeks and receives significant grant funding from the HP Foundation to develop an independent, non-profit corporation with a charter to construct and operate small drinking water supply systems for economically-disadvantaged communities. However, the initial grant funding is sufficient to address only a small fraction of the total problem. The HP Foundation encourages the non-profit corporation to leverage the available resources by establishing a Nitrate Mitigation Bank. The NGO does so and the Central Valley Water Board formally recognizes the mitigation bank as an acceptable offset program (subject to continuing verification of nitrate credits by state authorities and independent auditors).

- a. A coalition of dairy operators, governed by a common set of categorical WDRs, is discharging nitrate to groundwater at a number of widely separated locations. Some of these dairies are proximate to economically-disadvantaged communities with wells impaired by excess nitrate and some are not. Rather than attempting to discern the relative priority and develop appropriate offset projects for each dairy facility, the dischargers propose to make regular payments to the Nitrate Mitigation Bank.
- b. A separate crop coalition, governed by its own common set of categorical WDRs, is also dispersed over a wide area with varying proximity to economically-disadvantaged communities with nitrate-impaired wells. The coalition proposes to establish and collect an annual fertilizer use fee from its own members and to remit the proceeds to the Nitrate Mitigation Bank as an Alternate Compliance Program. The dischargers request that the Central Valley Water Board deem remission of said fees as an acceptable offset under their WDR.

In both cases, the mitigation bank would be responsible for assessing needs and coordinating with the community water systems to select a cost-effective solution. Contributions from the dischargers would be used to meet “matching requirements.”

operation and maintenance costs, or other expenses not normally covered by state and federal grants.

Offset Example #7: Alternate Load Reduction - Fallow Cropland

A small municipality relies on a pond system to treat its wastewater. Recharge water from the ponds presently has an average nitrate concentration of 15 mg/L. Small, low cost operational improvements are expected to reduce their nitrate concentration to about 13 mg/L. Meeting a WDR of 10 mg/L would require the city to construct and operate a modern activated sludge process that would cost several tens of millions of dollars. To offset the remaining nitrate the city proposes to purchase, annex, and retire 1,000 acres of active farmland on its border. The land will be re-zoned for multi-use purposes and will have ordinances and/or covenants severely restricting the use of nitrogen-based fertilizers in this area. Mass balance analysis confirms that the load reduction which results by fallowing the farmland is functionally-equivalent to that which would be achieved by building a new wastewater treatment plant. However, the offset approach would cost 30% less and, eventually, the acquisition expense would be recovered when the land was re-sold for development. The ordinances and covenants would remain in place in perpetuity. Some sort of formal load allocation process may be needed to implement this type of offset project.

CASA Comments

7-22-16

Draft Policy No. X: Secondary Maximum Contaminant Levels

1.0 Problem Statement

Secondary Maximum Contaminant Levels (SMCL) established by Title 22 of the California Code of Regulations (22 CCR)²² ([the drinking water regulations](#)) are incorporated by reference in the Chemical Constituent sections in the Water Quality Objectives Chapter of the Water Quality Control Plan for the Sacramento and San Joaquin River Basins (SRSJR Basin Plan) and the Water Quality Control Plan for the Tulare Lake Basin (TLB Basin Plan) (collectively referred to hereafter as “Central Valley Basin Plans” or “Basin Plans”). [The drinking water regulations include both numeric values and explanatory text and guidance for how to apply these values.](#) The only portions of 22 CCR related to SMCLs and incorporated into the Basin Plans are Tables 64449-A and 64449-B, which includes “Recommended”, “Upper”, and “Short Term” concentrations for Total Dissolved Solids (TDS), Specific Conductance (or Electrical Conductivity [EC]), chloride and sulfate. [While the SMCLs were included in the Basin Plans for the purpose of protecting the drinking water use, neither the text providing context for the tables nor guidance for utilizing the “Recommended”, “Upper”, or “Short Term” concentrations were included during the when the incorporation of the 22 CCR tables, because they were not were adopted as water quality objectives. This dual use has led to confusion and inconsistencies between intent and application of the values provided.](#)

Unlike primary MCLs that are set at levels to protect public health, SMCLs are drinking water standards based on [consumer acceptance levels, or in other words, based on consumer acceptance with respect to taste and odor and other aesthetic considerations \(such as color\).](#) ~~When determining a~~ Attainment with SMCLs in drinking water, as it is served to consumers, ~~attainment~~ is measured in the groundwater source or at distribution system entry points. This essentially means that the drinking water standard applies after the water has been treated, which in many cases means that water has been filtered. [In addition, the drinking water regulations allow for exceptions from compliance with SMCLs.](#) Comparatively, when SMCLs are used as water quality objectives, these values have been applied directly to the [entire](#) water body, which has not been treated or filtered. As a practical matter, this means that a water body, such as a river, must meet the SMCL in its raw water state even though the water itself would not be served to consumers without some form of treatment or filtration. Further, and as indicated above, SMCLs are based on consumer acceptance ~~and are not set at levels for the~~ protection of public health.

The purpose of this recommended SNMP Policy is to clarify in the Basin Plans how SMCLs ~~would are to~~ be interpreted and used as water quality objectives in Central Valley

²² ~~California Code of Regulations Title 22 – Social Security; Division 4 – Environmental Health; Chapter 15 – Domestic Water Quality and Monitoring Regulations, Article 16 Secondary Drinking Water Standards.~~

Regional Water Quality Control Board (Central Valley Water Board) actions that implement the objectives, such as when the Board is developing Waste Discharge Requirements (WDRs)²³ or Conditional Waivers²⁴ (“Waivers”) that authorize discharges to surface water or groundwater. In general, there are two types of SMCLs addressed in this recommended policy: Those associated with salinity (e.g., TDS or EC), and those associated with other types of constituents (e.g., metals). The salinity based SMCLs are expressed in ranges, which has created some confusion as to how the values in the various ranges should be applied to waters of the state when used as water quality objectives. With respect to the SMCLs associated with metals, there has been significant discussion with respect to apply the SMCLs to water samples that measure the amount of total metals in the water, or against dissolved water samples that would measure the amount of metals that would essentially exist if the water sample was served to consumers as filtered water.

1.1 Existing Regulatory Requirements

Chemical Constituents Water Quality Objective

The Central Valley Basin Plans state the following with regards to chemical constituents and the protection of surface and ground waters designated with a Municipal and Domestic Supply (MUN) beneficial use:²⁵

At a minimum, water designated...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) and 64431-B (Fluoride) of Section 64431, Table 64444-A (Organic Chemicals) of Section 64444, and Tables 64449-A (Secondary Maximum Contaminant Levels-Consumer Acceptance Limits) and 64449-B (Secondary Maximum Contaminant Levels-Ranges) of Section 64449. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect...The Regional Water Board acknowledges that specific treatment requirements are imposed by state and federal drinking water regulations on the consumption of surface waters under specific circumstances.²⁶

The above referenced SMCL tables, Tables 64449-A and 64449-B from 22 CCR are provided below. These tables list the chemical constituents along with their respective

²³ Water Code, section 13263.

²⁴ Water Code, section 13269.

²⁵ (a) Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (SRSJR Basin Plan). Fourth Edition. Central Valley Water Quality Control Board. Revised October 2011. See p. III-3.00 for inland waters and p. III-10.00 for groundwater; (b) Water Quality Control Plan for the Tulare Lake Basin (TLB Basin Plan). Second Edition. Central Valley Water Quality Control Board. Revised October 2011. See p. III-3 for inland waters and p. III-7 for groundwater.

²⁶ The last sentence regarding consumption of surface waters is found only in the Chemical Constituent water quality objectives section for inland waters.

maximum contaminant levels for Table 64449-A or “Recommended”, “Upper”, and “Short Term” levels for Table 64449-B.

While the 22 CCR §64449 tables are referenced in the Central Valley Basin Plans, the associated text contained in 22 CCR §64449 (d) and (e), which provides context for the listed values, is not currently included or referenced in the Basin Plans. Attachment A to this policy provides the full text of §64449. Additionally, for surface waters, text in the Basin Plans as provided above references the applicability of state and federal drinking water regulations to water served for human consumption, but provides no guidance on its implementation.

Related Water Quality Objectives

In addition to the TDS and EC values included in Table 64449-B, the SRSJR Basin Plan also establishes water body-specific objectives for EC and TDS in Table III-3. Per the SRSJR Basin Plan, where any conflict exists between the Table III-3 objectives and chemical constituents water quality objectives, as referenced in 22 CCR Table 64449-B, the more stringent objectives shall apply.²⁷ Similarly, the TLB Basin Plan establishes water body-specific objectives for EC and TDS in Tables III-2 and III-3.²⁸ All of these water body-specific objectives are lower than the SMCLs referenced in Table 64449-B.²⁹ Accordingly, the proposed recommendations in this policy would not affect the applicability of these water body-specific objectives, and the SNMP does not propose to make any recommendations otherwise that would affect the water body-specific objectives for TDS and EC as established in the Basin Plans.

Table 64449-A
Secondary Maximum Contaminant Levels
“Consumer Acceptance Contaminant Levels”

| Constituents | Maximum Contaminant Levels/Units |
|---|---|
| Aluminum | 0.2 mg/L |
| Color | 15 Units |
| Copper | 1.0 mg/L |
| Foaming Agents (MBAS) | 0.5 mg/L |
| Iron | 0.3 mg/L |
| Manganese | 0.05 mg/L |
| Methyl- <i>tert</i> -butyl ether (MTBE) | 0.005 mg/L |

²⁷ SRSJR Basin Plan. See p. III-6.02 and Table III-3 on p. III-7.00.

²⁸ TLB Basin Plan. pp. III-5 and III-6.

²⁹ Table III-3 in the SRSJR Basin Plan and Tables III-2 and III-3 in the TLB Basin Plan include explanatory text or table notes that provide additional information regarding application of water body-specific objectives. These notations are critical for making a determination of compliance with a water body-specific objective.

| | |
|------------------|------------|
| Odor – Threshold | 3 Units |
| Silver | 0.1 mg/L |
| Thiobencarb | 0.001 mg/L |
| Turbidity | 5 Units |
| Zinc | 5.0 mg/L |

Table 64449-B
Secondary Maximum Contaminant Levels
“Consumer Acceptance Contaminant Level Ranges”

| Constituents, Units | Recommended | Upper | Short Term |
|--|-------------|-------|------------|
| Total Dissolved Solids (TDS), mg/L, or | 500 | 1,000 | 1,500 |
| Specific Conductance, $\mu\text{S}/\text{cm}^{30}$ | 900 | 1,600 | 2,200 |
| Chloride, mg/L | 250 | 500 | 600 |
| Sulfate, mg/L | 250 | 500 | 600 |

Other Relevant Regulatory Requirements

Natural Background Concentrations

Consideration of the natural background concentration of a constituent relative to a water quality objective is addressed in each Basin Plan as follows:

- The TLB Basin Plan states that, “*The objectives of this plan do not require improvement over naturally occurring background concentrations.*”³¹ This finding applies to both inland surface water and groundwater quality objectives.³²
- The SRSJR Basin Plan states that, “*These objectives do not require improvement over naturally occurring background concentrations.*”³³ To date, this statement has only been applied to ground waters.³⁴
- Both the SRSJR and TLB Basin Plans include the following text within Chapter 4 of the Basin Plans (Policy for Application of Water Quality Objectives): *However, the water quality objectives do not require improvement over naturally occurring background*

³⁰ For the purposes of this policy, Specific Conductance is expressed as Electrical Conductivity.
³¹ TLB Basin Plan, p. III-2.
³² This Basin Plan language is superseded by the State Implementation Plan, which specifies how to derive effluent limitations for NPDES dischargers for priority pollutants in surface waters. Also, for surface waters the EPA only allows consideration of natural background for aquatic life constituents and not human health constituents.
³³ SRSJR Basin Plan, p. III-9.00.
³⁴ See previous footnote.

*concentrations. In cases where the natural background concentration of a particular constituent exceeds an applicable water quality objective, the natural background concentration will be considered to comply with the objective.*³⁵

Per the above Basin Plan statements, natural background should be considered when establishing WDRs. Consideration of natural background concentrations of TDS or EC is important in many areas of the Central Valley. The TLB Basin Plan also includes specific salinity implementation provisions in Chapter 4 governing consumptive use and controlled degradation. In particular:

- Discharges to Navigable Waters “...shall not exceed the quality of the source water plus 500 micromhos per centimeter or 1,000 micromhos per centimeter, whichever is more stringent....”³⁶
- For Discharges to Land “...maximum EC shall not exceed the EC of the source water plus 500 micromhos/cm.”³⁷
- Water quality objectives for groundwater salinity are based on a maximum average annual increase measured as electrical conductivity, recognizing that, “no proven means exist at present that will allow ongoing human activity in the Basin and maintain ground water salinity at current levels in the Basin.”³⁸

State Water Quality Control Board Policies

Statement of Policy with Respect to Maintaining High Quality of Waters in California (State Antidegradation Policy, Resolution 68-16)

The State Water Resources Control Board’s (State Water Board) Antidegradation Policy applies to both surface waters and groundwaters.³⁹ This policy generally prohibits the Central Valley Water Board from authorizing discharges that will degrade “high quality waters,” unless the Central Valley Water Board first finds that (1) the degradation is consistent with the maximum benefit to people of the state; (2) the discharge will be controlled through the use of “best practicable treatment or control” methodologies; and (3) the discharge will not unreasonably affect present and potential beneficial uses. High quality waters are those waters that are generally better than applicable water quality objectives. A determination of high quality is made on a constituent-by-constituent basis.

Sources of Drinking Water Policy (Resolution 88-63)

The Sources of Drinking Water Policy establishes a policy whereby all waters are considered suitable or potentially suitable to support the MUN beneficial use, with certain exceptions.⁴⁰ The Central Valley Basin Plans implement this policy by generally assigning an existing or potential MUN beneficial use to all surface waters and

³⁵ SRSJR Basin Plan, p. IV-17.00; TLB Basin Plan, p. IV-21.

³⁶ TLB Basin Plan, p. IV-10.

³⁷ TLB Basin Plan, p. IV-11.

³⁸ TLB Basin Plan, p. IV-20.

³⁹ State Water Board Resolution 68-16. Statement of Policy with Respect to Maintaining High Quality of Waters in California (Antidegradation Policy). 1968.

⁴⁰ State Water Board Resolution No. 88-63. Sources of Drinking Water Policy, May 19, 1988, as revised by Resolution No. 2006-0008.

groundwaters in the Central Valley unless those waters have already been identified as not supporting the MUN use in the Basin Plans or met the exceptions as of 1989 when the Policy was adopted into the Basin Plans. One of the exception criteria is that TDS exceeds 3,000 mg/L (5,000 µS/cm, EC) in the water body and it is not reasonably expected by a Regional Board that the water body would be used as a public water supply. These TDS or EC exception criteria are much higher than the range of acceptable SMCLs for TDS or EC in Table 64449-B (“Short Term” acceptable contaminant level of 1,500 mg/L TDS or 2,200 µS/cm EC), and would be unacceptable for drinking water.

1.2 Challenges with Application of Existing Basin Plan Language

Total Dissolved Solids or Electrical Conductivity

In the mid-1990s, the Central Valley Water Board modified its Chemical Constituents objective language in the Basin Plan, which incorporates water quality objectives for salinity, either as TDS or EC (Specific Conductance in Table 64449-B), to protect the MUN beneficial use. As described above, this new objective was established by reference to state SMCL drinking water standards identified in 22 CCR Table 64449-B. None of the other associated text from §64449, i.e., §64449(d) or (e), explaining how the SMCLs were supposed to be implemented, was incorporated with the table values. For example, 22 CCR Table 64449-B indicates three “Consumer Acceptance Contaminant Level Ranges”. For TDS, the “Recommended” value is 500 mg/L, but per the associated text found in 22 CCR §64449(d)(2), concentrations ranging up to an “Upper” value of 1,000 mg/L are also “acceptable,” if it is neither reasonable nor feasible to provide more suitable waters.⁴¹

In September 2007, the Central Valley Water Board issued a WDR and a Master Reclamation Permit to the City of Lodi.⁴² Subsequently, in October 2007, the California Sportfishing Protection Alliance (CALSPA) filed a petition with the State Water Board seeking review of the aforementioned permit.

In June 2009, the Central Valley Water Board submitted written comments to the State Water Board opposing CALSPA's claim that only the “Recommended” values at the lower end of the range of SMCLs for drinking water⁴³ can be used as water quality objectives when developing WDRs or effluent limits. The Central Valley Water Board noted that such an approach would be more stringent than, and inconsistent with, the manner in which the California Department of Health Services (now the Division of Drinking Water [DDW]) implements these same standards ~~on~~ for treated drinking water systems. The Central Valley Water Board also stated that there should be some exception made when the natural background concentration of one or more constituents in the receiving water exceeds the SMCL.

Commented [??]: Much of this discussion seems to be background which would be more appropriate in a fact sheet or staff report than in the text of the policy.

⁴¹ 22 CCR §64449(d)(2).

⁴² Central Valley Water Board Order No. R5-2007-0113; NPDES No. CA0079243.

⁴³ See “Recommended” column in Table 64449-B from 22 CCR.

In July 2009, the State Water Board adopted Order WQ 2009-0005,⁴⁴ which remanded in part the Lodi permit, and directed the Central Valley Water Board to consider further if releases of wastewater from the unlined storage ponds have caused groundwater to exceed applicable Basin Plan objectives for nitrate⁴⁵ and electrical conductivity.⁴⁶ In the adopted order, the State Water Board noted that the Chemical Constituents narrative water quality objective in the SRSJR Basin Plan⁴⁷ incorporates only the [SMCLs specified in tables from 22 CCR §64449 with their SMCL](#) numeric values and does not specifically reference the monitoring, reporting, waiver or other provisions that provide context for application of the values in those tables (e.g., see Attachment A to this policy, in particular the provisions contained in §64449(d) and (e)). The State Water Board also found that the “Short Term” value of 2,200 µS/cm EC (1,500 mg/L TDS) is not appropriate (as an applicable water quality objective) because it is “intended to apply only on a temporary basis pending construction of water treatment facilities or the development of new water sources”.⁴⁸

While the focus of the State Water Board decision was on the SRSJR Basin Plan, the TLB Basin Plan also provides limited additional context for application of the relevant 22 CCR §64449 tables. Consequently, neither of the Central Valley Basin Plans provides much guidance or policy on implementation when the Central Valley Water Board is developing WDRs to implement these particular objectives. Without this information, implementation of the water quality objectives for chemical constituents in Table 64449-B as related to SMCLs creates significant challenges for the following reasons:

- In the State Water Board’s Rancho Caballero decision, the State Water Board declared that when receiving water quality already exceeds a particular water quality objective, and there is no assimilative capacity available, discharge limits must be set to a concentration at or below the objective contained in the Water Quality Control Plan.⁴⁹ Therefore, where TDS in the receiving water exceeds 500 mg/L TDS (900 µS/cm EC) or 1,000 mg/L TDS (1,600 µS/cm EC), the Central Valley Water Board may not allow discharges to those receiving waters to exceed 500 mg/L or 1,000 mg/L (or equivalent EC values) even if the TDS concentration in the discharge is actually less than the TDS concentration in the receiving water and would improve receiving water quality.⁵⁰
- The CV-SALTS Initial Conceptual Model project developed an estimate of the median TDS concentration in the upper (shallower) portion of the 22 Central Valley Initial Analysis Zones (IAZs) based on water quality data recorded for the period 2003 to 2012

⁴⁴ Order WQ 2009-0005 was later amended by Order WQ 2012-0001. The amendments adopted to Order WQ 2009-00005 were unrelated to the salinity provisions discussed herein. However, to ensure proper citations to the relevant order, we have provided citations to Order WQ 2009-0005, as amended by Order WQ 2012-0001.

⁴⁵ Note that nitrate has a primary maximum contaminant level (22 CCR §64431, Table 64431-A) and is not affected by this policy.

⁴⁶ State Water Board Order WQ 2012-0001, p. 23.

⁴⁷ SRSJR Basin Plan, See Pg. III-3.00 for inland surface waters and Pg. III-10.00 for groundwater.

⁴⁸ State Water Board Order WQ 2012-0001, p. 15.

⁴⁹ State Water Board Order 73-4, p. 7.

⁵⁰ Note that in groundwater the objective applies at the groundwater table; changes to water quality may occur between the surface and first encountered groundwater, e.g., as a result of soil interactions.

(see Section X.Y of the SNMP).⁵¹ This study found that in the shallow portion of 17 of the 22 IAZs, the median TDS concentration already exceeds 500 mg/L TDS (900 μ S/cm EC).⁵² Therefore, if 500 mg/L TDS (900 μ S/cm EC) was used as the water quality objective, then only five of the IAZs are likely to have any significant assimilative capacity available for additional TDS loads if the shallow portion is used to determine total available assimilative capacity. Discharges to the other 17 IAZs would likely have to comply with WDRs prohibiting TDS discharges in excess of 500 mg/L TDS (900 μ S/cm EC). In contrast, if 1,000 mg/L TDS (1,600 μ S/cm EC) was used as the water quality objective (“Upper” level in Table 64449-B), then 17 of the 22 IAZs would likely have at least some assimilative capacity available for additional TDS loads.⁵³

- The current regulatory approach that relies primarily on the “Recommended” concentration of 500 mg/L TDS (900 μ S/cm EC) (Table 64449-B) for the purpose of establishing WDRs makes it nearly impossible to recharge groundwater basins with recycled water unless there is significant assimilative capacity available in the aquifer (TDS < 500 mg/ or < 900 μ S/cm EC). This outcome complicates and inhibits statewide efforts to promote the use of recycled water for landscape irrigation and to recharge groundwater storage – water management strategies that are particularly important during times of regional or statewide drought.
- The current regulatory approach that relies primarily on the “Recommended” TDS concentration of 500 mg/L (900 μ S/cm EC) (22 CCR Table 64449-B) for the purpose of establishing WDRs also poses significant challenges for agricultural discharges. Assuming a relatively common leaching fraction of 15%, agricultural operators must start with a TDS concentration no greater than 75 mg/L in the irrigation supply water in order to ensure percolation below the root zone does not exceed 500 mg/L (900 μ S/cm EC) at the point of compliance at the groundwater table. Similarly, to avoid discharging TDS at concentrations greater than 1,000 mg/L (1,600 μ S/cm EC) at the groundwater table, TDS in the irrigation supply water must be less than 150 mg/L.⁵⁴
- Similarly, applying the “Recommended” TDS value of 500 mg/L as a maximum “not-to-exceed” value immediately below the root zone at the groundwater table discourages the use of high efficiency drip irrigation systems with very low leaching fractions. This outcome conflicts with statewide efforts to promote greater water conservation through more efficient irrigation practices.

Finally, it is important to consider that the State Water Board has established a policy that all surface and ground waters of the state should be presumed to support an existing or potential MUN use unless the water body meets one of the exception criteria established

⁵¹ *Initial Conceptual Model Final Report: Task 7 and 8 - Salt and Nitrate Analysis for the Central Valley Floor and a Focused Analysis of Modesto and Kings Subregions*. December 2013.

⁵² See Table 7-7 in: *Initial Conceptual Model Final Report: Task 7 and 8 - Salt and Nitrate Analysis for the Central Valley Floor and a Focused Analysis of Modesto and Kings Subregions*. December 2013.

⁵³ See previous footnote reference; Table 7-7 also shows how the estimate of available assimilative capacity would likely change if the water quality objective is set to 700 mg/L or 1,000 mg/L.

⁵⁴ These are provided as examples only as the actual concentration of TDS or EC at the point of compliance at the groundwater table is influenced many factors, e.g., the type of irrigation system used and precipitation.

in the Sources of Drinking Water Policy.⁵⁵ The exception criterion relevant to this policy is criterion 1(a), which states that a basis for removing the MUN use from a surface water or groundwater is the TDS exceeds 3,000 mg/L (or 5,000 µS/cm, EC) and the water body is not reasonably expected by a Regional Board to supply a public water system. These TDS and EC values exceed even the “Short Term” “Consumer Acceptance Contaminant Level Ranges” (1,500 mg/L TDS or 2,200 µS/cm EC) established in Table 64449-B, yet it is State policy that waters with TDS or EC concentrations up to these high values may still be considered suitable to supply public water system and be protected as such.

Other Regulatory Challenges

In addition to the need to provide context for application of the Table 64449-B values, this recommended policy is also intended to provide clarity to the application of the chemical constituent water quality objectives in the following areas:

- *Measuring Compliance with SMCLs* - Neither 22 CCR nor the Basin Plans provide guidelines with regard to the appropriate sampling method for evaluating compliance through WDRs with the SMCLs in Tables 64449-A and 64449-B. Historically, wastewater dischargers’ compliance with the SMCLs has been determined using the total recoverable metals fraction. This approach is inconsistent with federal law that requires most community water systems to filter surface water prior to delivery.⁵⁶ Moreover, per 22 CCR and federal regulations,⁵⁷ SMCLs are intended to apply to finished water delivered to a community water system. Many of the SMCLs are primarily intended to address aesthetic qualities, such as taste and odor, or minimize risk of corrosion of pipes; they are not intended to address human health concerns.⁵⁸ Continuing to rely on total recoverable metals to assess compliance with SMCLs in the receiving water may overestimate the potential aesthetic impact on the actual quality of downstream drinking water delivered to consumers after treatment. In addition for groundwater, filtration through natural soils or man-made systems significantly reduces the concentration of total suspended solids, including aesthetically objectionable minerals such as iron, manganese, and aluminum.
- *Consideration of Natural Background* - It is known that some areas in the Central Valley have natural background TDS or EC concentrations that exceed the “Recommended” or higher values in Table 64449-B. While both the SRSJB and TLB Basin Plans contain provisions for considering natural background concentrations when applying water quality objectives in general, the means for implementing these provisions in WDRs with regards to SMCLs has not always been clear notwithstanding the water code’s requirement to have implementation plans for all water quality objectives.

⁵⁵ State Water Board Resolution No. 88-63. Sources of Drinking Water Policy, May 19, 1988, as revised by Resolution No. 2006-0008.

⁵⁶ USEPA. *National Primary Drinking Water Regulations: Long Term 2 Enhanced Surface Water Treatment Rule*. 71 Federal Register: 654-786. January 5, 2006.

⁵⁷ Federal Register 44, July 19, 1979, page 42199.

⁵⁸ See Final Draft CV-SALTS White Paper: *Salinity Effects on MUN-Related Uses of Water*; <http://www.cvsalinity.org/index.php/docs/agendas-notes-and-materials/meeting-materials/1012-cv-salts-mun-tech-memo070612/file.html>.

- *“Specific Treatment Requirements” - Language for Inland Surface Waters* - As noted above, the existing Chemical Constituents water quality objective for inland surface waters includes the following statement: *“The Regional Water Board acknowledges that specific treatment requirements are imposed by state and federal drinking water regulations on the consumption of surface waters under specific circumstances.”*⁵⁹ While the Basin Plans acknowledge that specific treatment requirements are imposed by state and federal drinking water regulations, the Basin Plans provide no implementation provisions for this text.
- *Compliance Assessment Time Period* – Per 22 CCR §64449, compliance with SMCLs is based on a long-term average rather than the results of an individual grab sample. Specifically, 22 CCR §64449 (c)(1) states that compliance with Table 64449-A constituents shall be determined based on a running annual average of four quarterly samples. 22 CCR §64449 does not provide a compliance assessment time period for Table 64449-B constituents. The Basins Plans currently do not provide guidelines for an appropriate compliance assessment time period for the SMCLs incorporated by reference from 22 CCR.

2.0 New Regulatory Approach to Implement SMCLs as Chemical Constituents

2.1 Total Dissolved Solids or Electrical Conductivity

~~When the SMCLs were incorporated by reference as water quality objectives, only Tables 64449 A and 64449 B were explicitly referenced in the Basin Plan. Other relevant text for Table 64449 B from 22 CCR §64449 (d) and (e) was not specifically referenced or included as text in the Basin Plan. The omission of contextual information interferes unnecessarily constrains with the Central Valley Water Board's ability discretion to develop appropriate WDRs based on the values enumerated in Tables 64449-A and 64449-B. For example, the “Recommended” levels specified in Table 64449-B have been construed as “not-to-exceed” values in WDRs and NPDES permit limits. Such an approach is not consistent with the full text of §64449(d), which states:~~

*“(d) For the constituents shown on Table 64449-B, **no fixed consumer acceptance contaminant level has been established.***

(1) Constituent concentrations lower than the Recommended contaminant level are desirable for a higher degree of consumer acceptance.

(2) Constituent concentrations ranging to the Upper contaminant level are acceptable if it is neither reasonable nor feasible to provide more suitable waters.

(3) Constituent concentrations ranging to the Short Term contaminant level are acceptable only for existing community water systems on a temporary basis pending construction of treatment facilities or development of acceptable new water sources.”

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⁵⁹ SRSJR Basin Plan, page III-3.00, and TLB Basin Plan, page III-3.

Thus, the numeric values were not intended as fixed maximums even for drinking water served to consumers. Given the importance of the contextual information contained in 22 CCR §64449(d), the Central Valley Water Board should consider the full range of “Consumer Acceptance Contaminant Levels” described in Table 64449-B when establishing reasonable and appropriate WDRs to protect water supplies that may be affected by the discharge.⁶⁰ This would include use of the “Short Term” level on a temporary basis in those situations where construction of new facilities or connection to new water sources is pending as specified in 22 CCR §64449(d)(3). Accordingly, the Central Valley Region Basin Plans should be amended to incorporate implementation provisions recognizing the contextual information in 22 CCR §64449 *et seq.*, as appropriate to support this policy. Additional findings that support these potential Basin Plan amendments include:

- 22 CCR §64449(a) specifies that: *“The secondary MCLs shown in Tables 64449-A and 64449-B shall not be exceeded in the water supplied to the public by community water systems”*. Compliance is evaluated by requiring such systems to monitor their *“groundwater sources or distribution system entry points representative of the effluent of source treatment every three years and its approved surface water sources or distribution system entry points representative of the effluent of source treatment annually....”*⁶¹ Revising the Basin Plans to incorporate the provisions associated with the implementation of 22 CCR §64449 will allow the Central Valley Water Board, when developing appropriate WDRs for the SMCLs, to take into consideration any dilution or other attenuation that may occur between the point of discharge and any intake to a downstream (surface water) or down-gradient (groundwater) water supply system. The Board is not necessarily obligated to authorize the full waste assimilation capacities of the receiving waters.⁶² However, the recommended Basin Plan amendments will preserve the Board’s discretion to regulate SMCL constituents based on what is necessary, reasonable, and feasible to protect public water supplies.
- Federal and state regulations do not require adoption of the SMCLs as formal water quality objectives. Several other California Regional Water Quality Control Boards have not adopted SMCLs as water quality objectives in their respective Basin Plans.⁶³ Instead, these other Boards rely on narrative water quality objectives to regulate mineral concentrations where necessary to protect water supply systems that may be adversely affected by a given discharge. The values shown in 22 CCR Tables 64449-A and 64449-B, along with the associated text in §64449, are used to inform the process of translating narrative objectives into appropriate WDRs.
- The SMCLs are primarily intended to address aesthetic qualities, such as taste and odor, or minimize risk of corrosion of pipes; they are not intended to address human health

⁶⁰ It should be noted that reference to “full range” includes potential use of “Short Term” levels, but per §64449(d)(3), these levels are acceptable only on a temporary basis pending other actions to establish an acceptable new water source.

⁶¹ 22 CCR §64449(b).

⁶² See §13263(b) of the California Water Code.

⁶³ See Basin Plans for the Regional Water Quality Control Boards in Region 3 (Central Coast Water Board); Region 6 (Lahontan Water Board); Region 7 (Colorado River Water Board); Region 8 (Santa Ana Water Board); and Region 9 (San Diego Water Board).

concerns.⁶⁴ Consumer acceptance is highly subjective and complicated by factors such as the form and combination of specific constituents (e.g., sodium-sulfate vs. calcium-sulfate) and the presence or absence of other major anions and cations.⁶⁵ The current numeric water quality objectives for SMCLs do not adequately account for the influence of these other variables.⁶⁶ Revising the Basin Plans will afford the Central Valley Water Board more flexibility to consider all relevant factors that may affect consumer acceptance of these constituents in drinking water, which is separate from effluent.

- The SRSJR and TLB Basin Plans establish site-specific water quality objectives for selected water bodies (see Section 1.1 of this policy). Incorporation of the full range of “Consumer Acceptance Contaminant Levels”, as described in 22 CCR Table 64449-B, into the Basin Plans does not supersede or replace these site-specific water quality objectives.
- Water recycling and groundwater recharge may increase the concentration of mineral salts. Using the lowest value from the range of consumer acceptance levels to establish numeric water quality objectives for TDS or EC (see 22 CCR Table 64449-B) discourages dischargers from increasing the use of recycled water or implementing groundwater recharge projects. Moreover, such disincentives can occur even where the discharges may actually improve overall quality in the receiving water. The Central Valley Water Board should have the legal flexibility to develop WDRs that balance the public benefits of water recycling and groundwater recharge against any potential impact on receiving water quality.
- The Central Valley Water Board’s on-going obligation to issue WDRs consistent with State Water Board Resolution No. 68-16⁶⁷ and §13370 of the California Water Code provides adequate protection against water quality degradation for the constituents identified in 22 CCR Tables 64449-A and 64449-B. Lowering water quality for high quality waters is only permissible where the Board has issued, through the proscribed public process, waste discharge requirements which will result in 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. Amending the Basin Plans does not create a license to discharge the SMCL constituents at will or authorize public nuisance. These amendments will, however, clarify the Board’s full range of authority to regulate these constituents in a manner consistent with the original purpose and intent of 22 CCR §64449.

2.2 Other Regulatory Issues

⁶⁴ See Final Draft CV-SALTS White Paper: *Salinity Effects on MUN-Related Uses of Water*; <http://www.cvsalinity.org/index.php/docs/agendas-notes-and-materials/meeting-materials/1012-cv-salts-mun-tech-memo070612/file.html>.

⁶⁵ See Final Draft CV-SALTS White Paper: *Salinity Effects on MUN-Related Uses of Water*; <http://www.cvsalinity.org/index.php/docs/agendas-notes-and-materials/meeting-materials/1012-cv-salts-mun-tech-memo070612/file.html>.

⁶⁶ See Federal Register 44:42195, July 19, 1979 for establishment of SMCLs; page 42201 for discussion of sulfate.

⁶⁷ State Water Board Resolution 68-16. *Statement of Policy with Respect to Maintaining High Quality of Waters in California* (Antidegradation Policy).

Section 1.2 above identified four areas where clarification is recommended with regards to implementation of the chemical constituents water quality objectives for surface waters and groundwater:

- *Measuring Compliance with SMCLs* – The Basin Plan implementation sections should be amended to include language that describes how compliance SMCLs in Table 64449-A and 64449-B will be determined. Specifically, compliance would be determined from a filtered sample (water passed through a 0.45 micron filter) for all constituents in Table 64449-B and all the following selected constituents in Table 64449-A: Aluminum, Color, Copper, Iron, Manganese, Silver Turbidity and Zinc. All of these constituents can be natural elements in the environment or are a characteristic of water influenced by the presence of these elements (i.e., color or turbidity). Compliance with the remaining SMCLs in Table 64449-A would be determined from a non-filtered sample: foaming agents (MBAs; surfactants), Methyl-tert-butyl ether (MTBE) (gasoline additive), Odor Threshold and Thiobencarb (pesticide). None of these constituents is an element or quality found in the natural environment.
- *Consideration of Natural Background* - The Basin Plans should be amended to make the language in both Basin Plans consistent and clarify that the language applies to both surface and ground waters. In addition, the Basin Plans should be amended to include language for the Chemical Constituents water quality objective section for cases where the natural background concentration of a particular chemical constituent exceeds the highest level specified in 22 CCR Table 64449-A or “Upper” level specified in Table 64449-B. In such cases, the water body shall not exceed that natural background concentration due to controllable anthropogenic sources. The Basin Plan should include language that states that constituents ranging to the “Short Term” level in Table 64449-B may be authorized on a temporary basis consistent with the provisions of 22 CCR §64449(d)(3). It may be appropriate to develop guidelines regarding how this determination would be made.
- *“Specific Treatment Requirements” Language for Inland Surface Waters* - Guidelines should be developed to support the Basin Plans’ implementation sections to describe how the following existing Basin Plan language would be considered when developing WDRs for discharges to inland surface waters: “*The Regional Water Board acknowledges that specific treatment requirements are imposed by state and federal drinking water regulations on the consumption of surface waters under specific circumstances.*”
- *Compliance Assessment Time Period* – Language should be added to the implementation section of the Basin Plans to state that an evaluation of compliance with SMCLs in Tables 64449-A and 64449-B shall be determined from an annual average of collected samples. This approach is similar to 22 CCR §64449(c)(1) as it applies to Table 64449-A. 22 CCR §64449 does not provide a compliance determination approach for Table 64449-B constituents; regardless, the same approach be used for both Table 64449-A and 64449-B constituents.

3.0 Implementation of SMCLs in Discharge Permits

As noted in the previous section, to implement this SMCL policy, it is recommended that the supporting regulatory language at 22 CCR §64449(d) and (e) ~~should~~ be incorporated into the SRSJR and TLB Basin Plans. This outcome will allow the Central Valley Water Board to consider the full range of “Consumer Acceptance Contaminant Levels” described in Table 64449-B when establishing reasonable and appropriate WDRs to protect water supplies that may be affected by a proposed discharge. In addition, when developing discharge permit language:

- The Central Valley Water Board shall consider a number of site-specific factors when developing appropriate WDRs consistent with the intent of 22 CCR §64449, including, but not limited to:
 - The availability of assimilative capacity in the receiving water based on compliance with the antidegradation policies;
 - Naturally occurring background concentrations;
 - Background concentrations due to prior anthropogenic activities where it is not feasible or practicable to remediate the effect of these past discharges;
 - The net effect of discharges that improve receiving water quality;
 - The chemical form/species of TDS or EC;
 - The presence or absence of other minerals (e.g., anion-cation balance) that may mitigate or aggravate aesthetic acceptability;
 - The application of appropriate long-term averaging periods to evaluate compliance with WDR monitoring requirements;
 - The potential impact on downstream beneficial uses (surface water and groundwater), including potential to impact water quality at the nearest downstream intakes for a drinking water facility or drinking water wells;
 - Economic factors including the practicality and feasibility of achieving compliance with the SMCLs at the point-of-discharge (including consideration of cost for achieving compliance, ability to pay, and cost of non-compliance);
 - Potential effect on drinking water treatment costs for downstream water suppliers;
 - Potential for salt loads to the Bay-Delta to increase, which may affect the ability to meet existing Bay-Delta water quality objectives⁶⁸ and thus may require some form of mitigation;
 - Demonstration that direct users of a water supply within the area of influence of the WDR are adequately protected. This may include showing that the local water supply is not impacted (e.g., high TDS may occur in the groundwater, but the local water supply comes from a surface water surface) or ensuring a safe temporary water supply is provided while long-term improvements to drinking water facilities are completed; and
 - Other environmental considerations.
- The Central Valley Water Board shall consider the State Water Board’s Recycled Water Policy and the Central Valley SNMP’s goals to increase the use of recycled water, increase stormwater use, and increase water conservation as mechanisms to increase

⁶⁸ Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, State Water Board, December 13, 2006.

drought protection when determining how to implement the range of TDS or EC values provided in 22 CCR Table 64449-B.

- CCR Title-22 §64449(d)(2) states that TDS concentrations up to 1,000 mg/L TDS (1600 µS/cm EC) are “acceptable if it is neither reasonable nor feasible to provide more suitable waters”. Accordingly, the Central Valley Water Board should be able to implement the range of TDS or EC values provided in 22 CCR Table 64449-B in the same manner as currently implemented for water supply agencies by referencing the full text and tables of 22 CCR §64449. However, granting the authority to allow TDS concentrations up to 1,000 mg/L in a discharge (1600 µS/cm EC) or higher⁶⁹ is not an ~~an~~ automatic categorical authorization for such discharges to occur.⁷⁰ All of the normal antidegradation requirements (Resolution No. 68-16), as they apply to high quality waters, would continue to apply when developing WDRs and effluent limitations for TDS or EC. If a discharge is likely to lower downstream water quality, it will still be necessary to demonstrate that any such change in high quality water quality:⁷¹
 - Will be consistent with maximum benefit to the people of the State;
 - Will not unreasonably affect present and anticipated beneficial uses of such water; and
 - Will not result in water quality less than that prescribed by state policies, e.g., water quality objectives established in the Basin Plans.
- Where waste discharges have the potential to affect source water quality in water supply intakes/wells located downstream/downgradient, the Central Valley Water Board may require a discharger, or dischargers collectively if in an approved management zone or as part of general order,⁷² to develop a more detailed fate and transport analysis prior to authorizing a permit.⁷³ The purpose of this analysis is to determine how the permitted discharge affects the concentration of constituents identified in 22 CCR Tables 64449-A and 64449-B at water supply intakes or water supply wells to ensure a safe drinking water supply for users.
- If being allocated assimilative capacity, dischargers individually, or collectively within a management zone, will still be required to meet WDRs resulting in the best practicable treatment or control of the discharge necessary to assure that (a) a condition of 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. To the extent practicable, given the facts known at the time that the WDR is developed, the Central Valley Water Board also should consider the long-term cumulative impact of all discharges to the same receiving water (and any other significant influences and/or trends) before authorizing a discharge that may further lower water quality. In addition,

⁶⁹ 22 CCR §64449(e) allows for application of “short term” “Consumer Acceptance Contaminant Levels” where specific criteria have been met (see Attachment A to this policy).

⁷⁰ Note that any authorized upper limit would be based on an averaging period as appropriate and determined by the Central Valley Water Board staff considering site-specific factors.

⁷¹ Questions and Answers, State Water Resources Control Board Resolution No. 68-16; February 16, 1995.

⁷² See Management Zone Policy and or Section X in the Central Valley SNMP for more information regarding Management Zones.

⁷³ A request for additional information prior to authorizing a permit shall be consistent with CWC §13627.

even if TDS or EC in the upper SMCL range is acceptable, it remains desirable to manage water resources toward attaining the recommended SMCL range where feasible, practicable, and reasonable to do so.

- Since the TDS and EC values shown in 22 CCR Table 64449-B are drinking water standards, for groundwater, it is appropriate to track the net effect of permitted discharges at downgradient well locations upgradient of where groundwater is extracted for domestic and municipal drinking water use. The potential to impact groundwater that is extracted for domestic and municipal drinking water use may trigger additional management activities.

4.0 Proposed Modifications to the Basin Plans to Support SNMP Implementation

To implement this SMCL Policy, the Central Valley Water Board should adopt changes to the SRSJR and TLB Basin Plans as summarized in the subsections below.

4.1 Chapter II - Existing and Potential Beneficial Uses

No changes to this section of the SRSJR and TLB Basin Plans are anticipated.

4.2 Chapter III - Water Quality Objectives

Following is a summary of proposed changes to the Water Quality Objective Chapter of each Central Valley Water Board Basin Plan.

Water Quality Control Plan for the Sacramento River and San Joaquin River Basins

To implement this SMCL Policy, the following changes to *Chapter III. Water Quality Objectives* will be made to the SRSJR Basin Plan:

- Page III-3.00, Chemical Constituents section will be modified as follows (*Note: Additions to the existing text are indicated by underline and deletions of existing text are indicated by ~~strikeout~~*):

Chemical Constituents

Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses...

At a minimum, surface water designated for use as 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) and 64431-B (Fluoride) of Section 64431, and Table 64444-A (Organic Chemicals) of Section 64444., ~~and Tables 64449-A (Secondary Maximum Contaminant Levels - Consumer Acceptance Limits) and 64449-B (Secondary Maximum Contaminant Levels Ranges) and of Section 64449.~~ This incorporation by reference is prospective, including future changes to the incorporated provisions as the changes take effect...

In addition, for surface waters designated MUN the concentration of chemical constituents shall not exceed the “maximum contaminant level” specified in 22 CCR Table 64449-A or the “Upper” level specified in 22 CCR Table 64449-B, unless otherwise authorized by the Regional Water Board in accordance with the provisions of 22 CCR Section 64449 et seq. Constituent concentrations ranging to the “Upper” level in Table 64449-B are acceptable if it is neither reasonable nor feasible to provide more suitable waters; in addition, constituents ranging to the “Short Term” level in Table 64449-B may be authorized on a temporary basis consistent with the provisions of §64449(d)(3). In cases where the surface water natural background concentration of a particular chemical constituent exceeds the highest level specified in 22 CCR Table 64449-A or “Upper” level specified in Table 64449-B, the surface water shall not exceed that natural background concentration due to controllable anthropogenic sources, unless the Regional Board authorizes it consistent with State Antidegradation Policy”.

- Page III-10.00, Chemical Constituents section will be modified as follows (*Note: Additions to the existing text are indicated by underline and deletions of existing text are indicated by ~~strikeout~~*):

Chemical Constituents

Ground waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses.

At a minimum, ground waters designated for use as 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) and 64431-B (Fluoride) of Section 64431, and Table 64444-A (Organic Chemicals) of Section 64444, and Tables 64449-A (Secondary Maximum Contaminant Levels Consumer Acceptance Limits) and 64449-B (Secondary Maximum Contaminant Levels Ranges) of Section 64449. This incorporation by reference is prospective, including future changes to the incorporated provisions as the changes take effect...

In addition, for ground waters designated MUN, concentration of chemical constituents shall not exceed the “maximum contaminant level” specified in 22 CCR Table 64449-A or the “Upper” level specified in 22 CCR Table 64449-B unless otherwise authorized by the Regional Water Board in accordance with the provisions of 22 CCR Section 64449 et seq. Constituent concentrations ranging to the “Upper” level in Table 64449-B are acceptable if it is neither reasonable nor feasible to provide more suitable waters; in addition, constituents ranging to the “Short Term” level in Table 64449-B may be authorized on a temporary basis consistent with the provisions of §64449(d)(3). In cases where the natural background concentration of a particular chemical constituent exceeds the highest level specified in 22 CCR

Table 64449-A or “Upper” level specified in Table 64449-B, the ground water shall not exceed that natural background concentration due to controllable anthropogenic sources, unless the Regional Board authorizes it consistent with State Antidegradation Policy.

Water Quality Control Plan for the Tulare Lake Basin

To implement this SMCL Policy, the following changes to *Chapter III. Water Quality Objectives* will be made to the TLB Basin Plan:

- Page III-3, Chemical Constituents section will be modified as follows (*Note: Additions to the existing text are indicated by underline and deletions of existing text are indicated by ~~strikeout~~*):

Chemical Constituents

Waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses...

At a minimum, surface water designated for use as 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) and 64431-B (Fluoride) of Section 64431, and Table 64444-A (Organic Chemicals) of Section 64444, and Tables 64449-A (Secondary Maximum Contaminant Levels Consumer Acceptance Limits) and 64449-B (Secondary Maximum Contaminant Levels Ranges) of Section 64449. ~~This incorporation by reference is prospective, including future changes to the incorporated provisions as the changes take effect...~~

In addition, for surface waters designated MUN, concentration of chemical constituents shall not exceed the “maximum contaminant level” specified in 22 CCR Table 64449-A or the “Upper” level specified in 22 CCR Table 64449-B unless otherwise authorized by the Regional Water Board in accordance with the provisions of 22 CCR Section 64449 et seq. Constituent concentrations ranging to the “Upper” level in Table 64449-B are acceptable if it is neither reasonable nor feasible to provide more suitable waters; in addition, constituents ranging to the “Short Term” level in Table 64449-B may be authorized on a temporary basis consistent with the provisions of §64449(d)(3). In cases where the surface water natural background concentration of a particular chemical constituent exceeds the highest level specified in 22 CCR Table 64449-A or “Upper” level specified in Table 64449-B, the surface water shall not exceed that natural background concentration due to controllable anthropogenic sources, unless the Regional Board authorizes it consistent with State Antidegradation Policy.

- Page III-7, Chemical Constituents section will be modified as follows (*Note: Additions to the existing text are indicated by underline and deletions of existing text are indicated by ~~strikeout~~*):

Chemical Constituents

Ground waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses...

At a minimum, ground waters designated for use as 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) and 64431-B (Fluoride) of Section 64431, and Table 64444-A (Organic Chemicals) of Section 64444, and Tables 64449-A (Secondary Maximum Contaminant Levels Consumer Acceptance Limits) and 64449-B (Secondary Maximum Contaminant Levels Ranges) of Section 64449. This incorporation by reference is prospective, including future changes to the incorporated provisions as the changes take effect...

In addition, for ground waters designated MUN, concentration of chemical constituents shall not exceed the “maximum contaminant level” specified in 22 CCR Table 64449-A or the “Upper” level specified in 22 CCR Table 64449-B unless otherwise authorized by the Regional Water Board in accordance with the provisions of 22 CCR Section 64449 et seq. Constituent concentrations ranging to the “Upper” level in Table 64449-B are acceptable if it is neither reasonable nor feasible to provide more suitable waters; in addition, constituents ranging to the “Short Term” level in Table 64449-B may be authorized on a temporary basis consistent with the provisions of §64449(d)(3). In cases where the natural background concentration of a particular chemical constituent exceeds the highest level specified in 22 CCR Table 64449-A or “Upper” level specified in Table 64449-B, the ground water shall not exceed that natural background concentration due to controllable anthropogenic sources, unless the Regional Board authorizes it consistent with State Antidegradation Policy.

4.3 Chapter IV - Implementation

Following is a summary of planned changes to the Implementation Chapter of each Central Valley Water Board Basin Plan.

[Note: The proposed implementation language makes reference to “...additional guidelines designed to achieve “Recommended” values....” It is assumed that these guidelines would be developed in parallel with the Basin Plan amendment process, after SNMP submittal. The purpose of these guidelines is to guide permit writers in development of WDRs, e.g., evaluation of natural background, presence or absence of other minerals that may mitigate/aggravate aesthetic acceptability; development of an appropriate averaging periods, etc.]

Water Quality Control Plan for the Sacramento River and San Joaquin River Basins

To implement this SMCL Policy, the following changes to Chapter IV. Implementation of the SRSJR Basin Plan are proposed:

- To support implementation of SMCLs, the following paragraphs are proposed for addition to the SRSJR Basin Plan's *Chapter IV. Implementation* at a location in the Chapter to be determined. (Note: Additions to the existing text are indicated by underline and deletions of existing text are indicated by ~~strikeout~~):

For the chemical constituents identified in 22 CCR §64449 (Table B) the water quality objectives shall be set as described in Chapter III-3.0 of this water quality control plan. Because lower concentrations of these chemical constituents are desirable for promoting greater consumer confidence and acceptance of public water supplies, the Regional Water Board has established additional guidelines designed to achieve the "Recommended" values in 22 CCR §64449 (Table B) where it is reasonable and feasible to do so. These "Recommended" concentrations are not water quality objectives per se but should be considered water resource management goals similar to other public policy goals established by the Regional Water Board and State Water Board to encourage greater water conservation, increased use of recycled water, more stormwater harvesting, additional groundwater recharge and storage, and better drought protection.

To implement the SMCLs in the Chemical Constituents section of the surface water and groundwater quality objectives, the Regional Water Board shall consider, as appropriate, a number of site-specific factors when developing WDRs, including, but not limited to:

- The availability of assimilative capacity in the receiving water based on compliance with the antidegradation policies.
- Naturally occurring background concentrations.
- Background concentrations due to prior anthropogenic activities where it is not feasible or practicable to remediate the effect of these past discharges.
- The net effect of discharges that improve receiving water quality.
- The chemical form/species of TDS or EC.
- The presence or absence of other minerals (e.g., anion-cation balance) that may mitigate or aggravate aesthetic acceptability.
- The application of appropriate long-term averaging periods to evaluate compliance with WDR monitoring requirements.
- The potential impact on downstream beneficial uses, including potential to impact water quality at the nearest downstream intakes for a drinking water facility or drinking water well.
- Economic factors including the practicality and feasibility of achieving compliance with the SMCLs at the point-of-discharge (including consideration of cost for achieving compliance, ability to pay, and cost of non-compliance).
- Potential effect on drinking water treatment costs for downstream water suppliers;

- Potential for salt loads to the Bay-Delta to increase, which may affect the ability to meet existing Bay-Delta water quality objectives⁷⁴ and thus may require some form of mitigation;
- Demonstration that direct users of a water supply within the area of influence of the WDR are adequately protected. This may in some cases include ensuring a safe temporary water supply is provided while long-term improvements to drinking water facilities are completed;
- Potential for the permitted discharge to affect the concentration of constituents identified in 22 CCR Tables 64449-A and 64449-B at downgradient water supply intakes or water supply wells to ensure a safe drinking water supply for users.
- Need for additional monitoring to track the net effect of permitted discharges at locations upgradient of downgradient well locations where groundwater is extracted for water supply and to determine the need for additional management requirements to protect the supply.
- The State Water Board's Recycled Water Policy and the Central Valley SNMP's goals to increase the use of recycled water, increase stormwater use, and increase water conservation as mechanisms to increase drought protection.
- The long-term cumulative impact of all discharges to the same receiving water.
- Other environmental considerations.

Compliance with any chemical constituent in Tables 64449-A of 64449-B shall be determined from the annual average of sample results based on the techniques in (a) and (b) below.

(a) Compliance with the chemical constituent water quality objective shall be determined from a filtered water sample (0.45 micron filter) for the following constituents identified in 22 CCR §64449 (Table A): Aluminum, Color, Copper, Iron, Manganese, Silver Turbidity and Zinc.

(b) Compliance with the chemical constituent water quality objective shall be determined from an unfiltered water sample for the following constituents identified in 22 CCR §64449 (Table A): Foaming Agents (MBAs), Methyl-tert-Butyl Ether (MTBE), Odor-Threshold and Thiobencarb.

Water Quality Control Plan for the Tulare Lake Basin

To implement this SMCL Policy, the following change to *Chapter IV. Implementation Plan* will be made to the TLB Basin Plan:

- To support implementation of SMCLs, the following text will be added to the TLB Basin Plan's *Chapter IV. Implementation Plan* at a location to be determined, but potentially in association with "Policy for Application of Water Quality Objectives (Pg. IV-21 ff.) (*Note: Additions to the existing text are indicated by underline and deletions of existing text are indicated by ~~strikeout~~*):

For the chemical constituents identified in 22 CCR §64449 (Table B) the water quality objectives shall be set as described in Chapter III-10.0 of this

⁷⁴ Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, State Water Board, December 13, 2006.

water quality control plan. Because lower concentrations of these chemical constituents are desirable for promoting greater consumer confidence and acceptance of public water supplies, the Regional Water Board has established additional guidelines designed to achieve the “Recommended” values in 22 CCR §64449 (Table B) where it is reasonable and feasible to do so. These “Recommended” concentrations are not water quality objectives per se but, rather, should be considered water resource management goals similar to other public policy goals established by the Regional Water Board and State Water Board to encourage greater water conservation, increased use of recycled water, more stormwater harvesting, additional groundwater recharge and storage, and better drought protection, etc.

To implement the SMCLs in the Chemical Constituents section of the surface water and groundwater quality objectives, the Regional Water Board shall consider, as appropriate, a number of site-specific factors when developing WDRs, including, but not limited to:

- The availability of assimilative capacity in the receiving water based on compliance with the antidegradation policies.
- Naturally occurring background concentrations.
- Background concentrations due to prior anthropogenic activities where it is not feasible or practicable to remediate the effect of these past discharges.
- The net effect of discharges that improve receiving water quality.
- The chemical form/species of TDS or EC.
- The presence or absence of other minerals (e.g., anion-cation balance) that may mitigate or aggravate aesthetic acceptability.
- The application of appropriate long-term averaging periods to evaluate compliance with WDR monitoring requirements.
- The potential impact on downstream beneficial uses, including potential to impact water quality at the nearest downstream intakes for a drinking water facility or drinking water well.
- Economic factors including the practicality and feasibility of achieving compliance with the SMCLs at the point-of-discharge (including consideration of cost for achieving compliance, ability to pay, and cost of non-compliance).
- Potential effect on drinking water treatment costs for downstream water suppliers;
- Potential for salt loads to the Bay-Delta to increase, which may affect the ability to meet existing Bay-Delta water quality objectives⁷⁵ and thus may require some form of mitigation;
- Demonstration that direct users of a water supply within the area of influence of the WDR are adequately protected. This may in some cases include ensuring a safe temporary water supply is provided while long-term improvements to drinking water facilities are completed;

⁷⁵ Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, State Water Board, December 13, 2006.

- Potential for the permitted discharge to affect the concentration of constituents identified in 22 CCR Tables 64449-A and 64449-B at downgradient water supply intakes or water supply wells to ensure a safe drinking water supply for users.
- Need for additional monitoring to track the net effect of permitted discharges at locations upgradient of downgradient well locations where groundwater is extracted for water supply and to determine the need for additional management requirements to protect the supply.
- The State Water Board's Recycled Water Policy and the Central Valley SNMP's goals to increase the use of recycled water, increase stormwater use, and increase water conservation as mechanisms to increase drought protection.
- The long-term cumulative impact of all discharges to the same receiving water.
- Other environmental considerations.

Compliance with any chemical constituent in Tables 64449-A of 64449-B shall be determined from the annual average of sample results based on the techniques in (a) and (b) below.

- (a) Compliance with the chemical constituent water quality objective shall be determined from a filtered water sample (0.45 micron filter) for the following constituents identified in 22 CCR §64449 (Table A): Aluminum, Color, Copper, Iron, Manganese, Silver Turbidity and Zinc.
- (b) Compliance with the chemical constituent water quality objective shall be determined from an unfiltered water sample for the following constituents identified in 22 CCR §64449 (Table A): Foaming Agents (MBAs), Methyl-tert-Butyl Ether (MTBE), Odor-Threshold and Thiobencarb.

**Policy No. X: Secondary Maximum Contaminant Levels
Attachment A**

**Title 22. Social Security
Division 4. Environmental Health
Chapter 15. Domestic Water Quality and Monitoring Regulations**

Article 16. Secondary Drinking Water Standards

§64449. Secondary Maximum Contaminant Levels and Compliance.

(a) The secondary MCLs shown in Tables 64449-A and 64449-B shall not be exceeded in the water supplied to the public by community water systems.

Table 64449-A

Secondary Maximum Contaminant Levels

“Consumer Acceptance Contaminant Levels”

| Constituents | Maximum Contaminant Levels/Units |
|---|----------------------------------|
| Aluminum | 0.2 mg/L |
| Color | 15 Units |
| Copper | 1.0 mg/L |
| Foaming Agents (MBAS) | 0.5 mg/L |
| Iron | 0.3 mg/L |
| Manganese | 0.05 mg/L |
| Methyl- <i>tert</i> -butyl ether (MTBE) | 0.005 mg/L |
| Odor – Threshold | 3 Units |
| Silver | 0.1 mg/L |
| Thiobencarb | 0.001 mg/L |
| Turbidity | 5 Units |
| Zinc | 5.0 mg/L |

Table 64449-B
Secondary Maximum Contaminant Levels
“Consumer Acceptance Contaminant Level Ranges”

| Constituents, Units | Recommended | Upper | Short Term |
|------------------------------|-------------|-------|------------|
| Total Dissolved Solids, mg/L | 500 | 1,000 | 1,500 |
| or | | | |
| Specific Conductance, µS/cm | 900 | 1,600 | 2,200 |
| Chloride, mg/L | 250 | 500 | 600 |
| Sulfate, mg/L | 250 | 500 | 600 |

(b) Each community water system shall monitor its groundwater sources or distribution system entry points representative of the effluent of source treatment every three years and its approved surface water sources or distribution system entry points representative of the effluent of source treatment annually for the following:

- (1) Secondary MCLs listed in Tables 64449-A and 64449-B; and
- (2) Bicarbonate, carbonate, and hydroxide alkalinity, calcium, magnesium, sodium, pH, and total hardness.

(c) If the level of any constituent in Table 64449-A exceeds an MCL, the community water system shall proceed as follows:

- (1) If monitoring quarterly, determine compliance by a running annual average of four quarterly samples;
- (2) If monitoring less than quarterly, initiate quarterly monitoring and determine compliance on the basis of an average of the initial sample and the next three consecutive quarterly samples collected;
- (3) If a violation has occurred (average of four consecutive quarterly samples exceeds an MCL), inform the Department when reporting pursuant to Section 64469;
- (4) After one year of quarterly monitoring during which all the results are below the MCL and the results do not indicate any trend toward exceeding the MCL, the system may request the Department to allow a reduced monitoring frequency.

(d) For the constituents shown on Table 64449-B, no fixed consumer acceptance contaminant level has been established.

- (1) Constituent concentrations lower than the Recommended contaminant level are desirable for a higher degree of consumer acceptance.

(2) Constituent concentrations ranging to the Upper contaminant level are acceptable if it is neither reasonable nor feasible to provide more suitable waters.

(3) Constituent concentrations ranging to the Short Term contaminant level are acceptable only for existing community water systems on a temporary basis pending construction of treatment facilities or development of acceptable new water sources.

(e) New services from community water systems serving water which carries constituent concentrations between the Upper and Short Term contaminant levels shall be approved only:

(1) If adequate progress is being demonstrated toward providing water of improved mineral quality.

(2) For other compelling reasons approved by the Department.

(f) A community water system may apply to the Department for a waiver from the monitoring frequencies specified in subsection (b), if the system has conducted at least three rounds of monitoring (three periods for groundwater sources or three years for approved surface water sources) and these analytical results are less than the MCLs. The water system shall specify the basis for its request. A system with a waiver shall collect a minimum of one sample per source while the waiver is in effect and the term of the waiver shall not exceed one compliance cycle (i.e., nine years).

(g) Nontransient-noncommunity and transient-noncommunity water systems shall monitor their sources or distribution system entry points representative of the effluent of source treatment for bicarbonate, carbonate, and hydroxide alkalinity, calcium, iron, magnesium, manganese, pH, specific conductance, sodium, and total hardness at least once. In addition, nontransient-noncommunity water systems shall monitor for the constituents in Tables 64449-A and B at least once.