CALIFORNIA Water Boards

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FROM: Patrick Pulupa, Acting Executive Officer
For Pamela C. Creedon, Executive Officer
CENTRAL VALLEY REGION
REGIONAL WATER QUALITY CONTROL BOARD

DATE: 1 June 2016

SUBJECT: **OWN MOTION REVIEW OF WASTE DISCHARGE REQUIEMENTS GENERAL ORDER NO. R5-2012-0116 FOR GROWERS WITHIN THE EASTERN SAN JOAQUIN RIVER WATERSHED THAT ARE MEMBERS OF THE THIRD-PARTY GROUP, CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD: COMMENTS TO SWRCB/OCC FILES A-2239 (A)-(C)**

The Central Valley Water Board (occasionally referred to herein as the "Board") appreciates the opportunity to submit written comments on the State Water Resources Control Board's ("State Water Board") proposed order reviewing Waste Discharge Requirements General Order No. R5-2012-0116 for Growers within the Eastern San Joaquin River Watershed that are Members of the Third-Party Group (the "Draft Order"). For the reasons stated below, the Central Valley Water Board respectfully requests that the State Water Board decline to issue the Draft Order in its current form.

Should the State Water Board desire changes to the existing regulatory strategy as implemented in General Order No. R5-2012-0116 (the "existing General WDRs"), the Central Valley Water Board would suggest that the State Water Board remand the existing General WDRs to the Central Valley Water Board with instructions on how to implement the desired changes. Doing so would give the Central Valley Water Board the opportunity to re-initiate its collaborative stakeholder process to address both the perceived deficiencies in the existing General Order as well as any new policy directives advocated by the State Water Board.

I. Executive Summary

As an initial matter, though these comments articulate significant concerns regarding the changes proposed in the Draft Order, it is evident that the Central Valley Water Board and the State Water Board share the same policy goal: an irrigated lands regulatory program that is fully protective of beneficial uses, fully cognizant of the importance of the agricultural sector to California's economy, and fully defensible in a court of law. Where it appears that the Draft Order mischaracterized aspects of the Central Valley Water Board's Irrigated Lands Regulatory Program ("ILRP") – particularly those aspects where the Central Valley Water Board contends

that the existing General WDRs do, in fact, establish feedback mechanisms to ensure the success of the program and require the coalitions[1] to provide the Board with sufficient information to allow for effective compliance auditing – we provide greater clarification.[2] Where the Central Valley Water Board disagrees with the policy perspectives in the Draft Order, we provide a rationale justifying our differing perspective.

The Draft Order, as currently written, proposes sweeping changes to the Central Valley Water Board's ILRP, a highly successful program that reflects more than 13 years of stakeholder outreach, a massive amount of diligent regulatory work by Board staff, and countless challenging and consequential policy determinations made by the Board itself in dozens of public hearings. The ILRP has been continuously subject to refinements and adjustments as water quality improvements have been achieved and as lessons have been learned. Regrettably, the changes proposed by the Draft Order would threaten to upend and undo the Board's significant progress in ensuring compliance from a regulated community comprising over 34,000 farming operations and spanning approximately 7 million acres.

The Central Valley Water Board views the proposed changes as unnecessarily disruptive because the Draft Order appears to disregard the carefully considered balance between the utility of mandating specific practices and reporting requirements and the cost and workload implications of those practices and requirements. When the Central Valley Water Board issued the existing General WDRs, it weighed these competing interests and determined that the coalitions could effectively assume a substantial amount of the work associated with implementing the ILRP, thereby leveraging local agricultural community resources to address critical water quality issues under close Board oversight. In so doing, the Board was able to recruit leaders from the agricultural community into helping their fellow growers implement the ILRP requirements and further the Board's water quality goals.

The Draft Order upsets this balance by putting the Central Valley Water Board in the position of duplicating, rather than overseeing, much of the work of the coalitions. Such workload redundancies would diminish the value of the coalitions and the coalition-based regulatory model and would place additional strain on already-stressed Board resources. Furthermore, imposing additional monitoring and reporting requirements on the growers and the coalitions will have very real consequences for both the ILRP program effectiveness and for the viability of California agriculture as a whole. Furthermore, the new mandates in the Draft Order are not necessary to ensure compliance with State Water Board's Nonpoint Source Policy, the State Water Board's Antidegradation Policy, and the Water Code, nor will they confer significant and ascertainable water quality benefits over the near or long term.

The Central Valley Water Board must also rebut the concern evinced in the Draft Order that the Central Valley Water Board is not acting with sufficient urgency to address issues related to nitrate contaminated aquifers. Consistent with AB 685, there is no issue that the Board takes more seriously than when discharges of pollutants result in a deprivation of safe, clean, affordable, and accessible water. The gravity of this concern is most evident in the Central Valley Water Board's continued leadership role in the Central Valley Salinity Alternatives for Long-term Sustainability ("CV-SALTS") effort, which is the only initiative statewide that is

[1] These comments use the term "coalitions" when referring to coalitions generally, and the "Coalition" when referring specifically to the Eastern San Joaquin Coalition.

[2] For reference, attached to these comments is a chronology summarizing changes to the existing General WDRs for East San Joaquin Coalition Members since they were adopted in 2012, as well as changes to the Central Valley Water Board's Irrigated Lands Regulatory Program ("ILRP") that may not be reflected in the text of the ILRP General WDRs.

seeking to comprehensively address the consequences of nitrogen over-application. In the Board's overarching strategy, the ILRP will provide effective nitrogen source control to ameliorate future contamination issues, while CV-SALTS will be the vehicle to address the immediate needs and long-term impacts associated with nitrate-contaminated aquifers. Therefore, the drinking water-related aspects of the Draft Order would be best addressed through the CV-SALTS process, which involves not only the agricultural community, but also a wider range of dischargers whose historic practices have contributed to existing water quality impairments.

While the Central Valley Water Board recognizes and respects the State Water Board's role in setting statewide policy, even where that policy may conflict with carefully considered positions taken by one or more regional water boards, in this instance, there are several aspects of the Draft Order that the Central Valley Water Board believes warrant serious reconsideration.

II. Central Valley Water Board ILRP Background

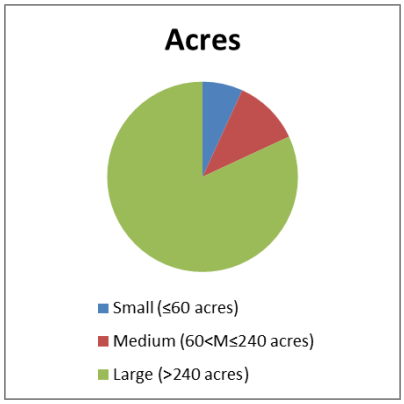
The ILRP was initiated in 2003 when the Central Valley Water Board adopted a conditional waiver to regulate discharges of waste from irrigated lands. The Board renewed the waiver in 2006 and directed staff to develop an environmental impact report for a long-term ILRP to comprehensively protect waters of the State (both groundwater and surface water). In 2008, the Central Valley Water Board completed an Existing Conditions Report for Central Valley irrigated agricultural operations, establishing baseline conditions for estimating potential environmental effects of long-term ILRP alternatives in a Program Environmental Impact Report (PEIR). The Final PEIR was certified by the Board in April 2011, and the first ILRP WDRs were adopted for the Eastern San Joaquin Watershed in December 2012. The PEIR included information regarding the size of the farms in the Central Valley region (see Table 1 below).

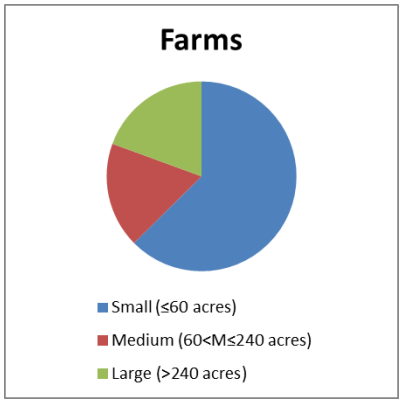
It is important to note that the number of small farms is almost *twice* that of medium and large farms *combined*. Smaller farms require more ILRP staff resources for compliance and outreach, especially when there are language barriers and if growers do not join the coalitions.

Table 1. Farm size in Central Valley Region

Size	Farms	Acres
Small (≤60 acres)	21,368	528,295
Medium (60<M≤240 acres)	6,132	871,150
Large (>240 acres)	6,627	6,347,150

*From Programmatic EIR; acreage estimates have changed but relative distribution should hold





III. The Draft Order's Heavy Reliance on the A/R Ratio is Misplaced

For decades, growers commonly applied nitrogen fertilizer in excess of crop demand, resulting in widespread nitrate contamination in some of the Central Valley's most productive agricultural areas. Although many growers now judiciously calibrate their nitrogen applications to crop demands, the State Water Board is correct to emphasize that one of the Central Valley Water Board's most critical responsibilities is to prescribe waste discharge requirements that prevent and rectify nitrate impairments caused by agricultural activities. Furthermore, the Central Valley Water Board agrees that careful accounting of both the nitrogen applied to fields and nitrogen removed by crops is a fundamental aspect of a strategy to regulate nitrates in groundwater.

However, the Central Valley Water Board does not agree that the A/R ratio should function as the primary regulatory tool to curb nitrate impacts. As described in more detail below, multiple components of the existing General WDRs work in concert to further the Board's objective of developing scientifically defensible benchmarks to evaluate whether or not grower practices are adequately protecting water quality. However, these benchmarks must be based on a thorough understanding of how various agricultural, chemical, biological, and geologic factors affect groundwater quality – and since these factors are not yet correlated in a meaningful way, imposing A/R benchmarks in accordance with the Draft Order's timeline would result in arbitrary compliance metrics that could harm the integrity of the Board's regulatory program.

That is not to say that the Board is using a lack of scientific information as justification for inaction; the Board's current regulatory process requires coalitions to assiduously track A/R trends and outliers, thereby informing the Board, coalitions, growers, and the public of how grower nitrate management practices are evolving. But reliance on A/R alone as a "proxy" for groundwater monitoring and compliance is not scientifically defensible and, in and of itself, will not ensure that groundwater quality is protected. As explained more fully, below, the Board's current regulatory approach relies on a combination of aggregated A/R reporting, development of groundwater quality management plans, and a science-based correlative analysis in the Management Practices Evaluation Program (MPEP). <u>The Central Valley Water Board proposes that the State Water Board, at a minimum, allow the existing regulatory program an opportunity to yield results before mandating a change in how the A/R ratio should be used to evaluate compliance.</u>

Currently, the coalitions are striving to develop accurate metrics for accounting for nitrogen removal and sequestration for all of the crops grown in the Central Valley. However, under the Draft Order, the coalitions will be tasked with developing even more robust metrics, and the Central Valley Water Board will be required to immediately begin developing target A/R ratios for use as regulatory benchmarks (the expectation of the Draft Order is that these benchmarks will be set within 3 years).[3] There are two problems with this rushed approach. First, the Board and the coalitions are still developing their understanding of which combination of nitrogen-related management practices are protective of water quality, and it would not be productive to develop benchmarks before the Board better understands the extent to which the growers can manipulate A/R Ratios without having significant adverse effects on crop yields. Second, there is still a significant knowledge gap between what occurs on the ground surface and the effects that are seen in groundwater. Fortunately, Central Valley Water Board recognized these issues

[3] "Commencing in May 2019, the Central Valley Water Board shall create and use a correlated set of field-level management practice implementation data, AR data, and water quality monitoring data to assist it with … developing, in coordination with the State Water Board and other regional water boards, acceptable ranges for multi-year A/R ratio target values." (Draft Order, p.62.)

during the development of the ILRP, and included requirements in the existing General WDRs that will enhance the Board's understanding of the dynamics of nitrogen management and its effect on groundwater quality.

With respect to developing the Board and the coalitions' understanding of how management practices should be utilized to keep nitrogen applications as low as possible, the Board has required the coalitions to develop Groundwater Quality Management Plans (GQMPs) where irrigated lands may cause or contribute to groundwater quality problem(s). These GQMPs must include member outreach, a schedule with milestones for implementing management practices, and measurable performance goals. Through the development of GQMPs, the implementation of Nitrogen Management Plans, and the tracking of A/R Ratios, the Board and the coalitions will better understand the parameters under which A/R Ratios can be calibrated to be protective of future water quality.

But more importantly, the Draft Order's shift towards the use of the A/R Ratio as a compliance metric for determining whether a grower is protecting groundwater is misplaced, because even the most efficient nitrogen applications may not yield appreciable water quality improvements in groundwater for decades.[4] Water quality effects are, after all, the result of multiple practices and site-specific conditions that generally take a long time to affect underlying groundwater. For example, some aquifers do not appear to have nitrate concerns even though the land above them has been intensively farmed, while other aquifers have been heavily impacted. Effective management practices in sandy soils for one commodity may be different from those implemented on clay soils for a different commodity (e.g., effective erosion controls would be very different in Kern County than Placer County), as illustrated by the Department of Pesticide Regulation's ("DPR") groundwater protection program. This program includes two different management areas – "runoff" and "leaching" – where pesticide management practices must be applied quite differently considering the type of pesticide and mode of transport to groundwater. DPR's program also institutes controlled sampling "verification" areas that look at the effectiveness of practices. Instead of attempting to gather data for every farm throughout the state, DPR has taken a targeted, representative approach that the Board is seeking to emulate.

In the Central Valley Water Board's view, the key to understanding the relationship between management practices and the underlying groundwater is the Management Practice Evaluation Program ("MPEP"), which shares some attributes with DPR's groundwater protection program. Pursuant to the Board's MPEP requirement, the coalitions are conducting an intensive inquiry to determine which crop-specific practices (in addition to careful nitrogen management) are most effective at reducing nitrate impacts under a broad variety of hydrogeologic settings. For example, one MPEP study may look at various irrigation methods for almonds to determine what is the most protective irrigation method under differing soil conditions. Another MPEP study may investigate whether differing fertilizer application methods and timing (e.g., fertigation/folier, split timing) may be implemented to protect groundwater quality. Fertilizer timing may be studied to determine the most efficient way to fertilize a particular crop, with the same overall acreage application rate, but in a manner that increases crop uptake and actually minimizes the amount of residual nitrate left within the root zone.

These MPEP studies must be completed in a 6-year timeframe, and annual status reporting requirements will allow for early distribution of initial results to both growers and the Board. This will allow growers to implement better practices as the program evolves, and will inform the Board on what additional practices need to be implemented by members based on crops and

[4] *See* Thomas Harter, Ph.D., *Comments on SWRCB Draft Order to revise R5-2012-0116* (May 17, 2016), *available at* http://www.swrcb.ca.gov/public_notices/petitions/water_quality/docs/a2239/workshops/harter.pdf.

site-specific conditions. As the program progresses, the grower-implemented practices would be refined to represent only the most protective practices for their particular crops and specific site conditions. When the management practices evaluation report ("MPER") is submitted to the Central Valley Water Board at the end of 6 years, the coalitions will have completed their studies and the Board will have acquired an inventory of reports detailing the range of practices that best protect groundwater quality. The Board will then have the means to consider developing benchmarks considering not only A/R ratios, but also soil types, depth to groundwater, irrigation practices, crop types, nutrient management practices, and hydrogeologic conditions.[5] Until the MPEP process reaches that point, however, A/R target ratios will lack a technically defensible link to actual improvements in groundwater quality.

Finally, to ensure that the combination of A/R reporting, GQMP implementation, and MPEP investigation results in meaningful water quality improvements, the Board is requiring the coalitions to undertake a Groundwater Quality Trend Monitoring Program (GQTMP) to help determine the overall effectiveness of the program, as well as identify what crop-related practices may need further improvements, thereby allowing more focused efforts to occur in those areas. In this way, the current program is designed to be able to adapt as existing farm management practices evolve and as new practices become available.

The current program's *early implementation of nitrogen management practices*, which is underway while the MPEP proceeds, warrants emphasis here. During the development of the ILRP, the Board recognized that the MPEP would require time to develop. However, the Board was also clear that growers must implement management practices immediately to reduce fertilizer leaching below the root zone. In this manner, the current program struck a balance between obtaining sound science to inform long-term management practices and short-term improvements in nitrogen management.

The following is a discussion of the groundwater elements that currently are being imposed in the existing General WDRs, along with how the information obtained will be utilized by the ILRP:

Groundwater element with currently available information

Groundwater Assessment Report, GAR (East San Joaquin Coalition received approval on 24 December 2014): The GAR includes an assessment of baseline conditions, review of current water quality data, models to determine vulnerability considering physiological characteristics and water quality data, and establishment of high and low vulnerability areas. The GAR and its vulnerability designations are used to differentiate reporting requirements for Coalition members as well as the area and constituents covered by the Groundwater Quality Management Plan. The GAR must be updated 5 years after the approval date.

Groundwater element with information available in the short-term

Nitrogen Management Plans and A/R Reporting (East San Joaquin Coalition nitrogen A/R Reporting started 30 May 2016): All growers are required to develop individual nitrogen management plans to account for nitrogen inputs and outputs and minimize excess nitrogen application relative to crop need. The Coalition will aggregate, analyze and report A/R ratios and identify outliers, and will conduct outreach to outliers. Board staff will conduct inspections of growers not responsive to coalition outreach and will follow up with additional compliance and enforcement activities as needed.

[5] This process of evaluating a discharge's effect on groundwater, and modifying WDRs in accordance with the result of that evaluation, is typical of the Board's other groundwater programs, and would be done as part of the MPEP under representative conditions.

Groundwater Quality Management Plan, GQMP (East San Joaquin Coalition provided GQMP on 23 February 2015): The GQMP is required where irrigated lands may cause or contribute to groundwater quality problem(s) and must include member outreach, a schedule with milestones for implementing management practices, and measurable performance goals. Initial management practices in the GQMP will include grower development and implementation of nitrogen management plans, wellhead protection, and Coalition assessment, and follow up on the nitrogen A/R reporting. Annual reporting on the status of GQMP is required, and new management practices will be required to be included in the GQMP and implemented once they are demonstrated to be effective through the MPEP. Board staff will review the GQMP status report each year to assess progress towards protecting groundwater quality and the need for additional management practices or any other changes to the GQMP. The Order requires that the GQMP time schedule for complying with receiving water limitations must not exceed 10 years.

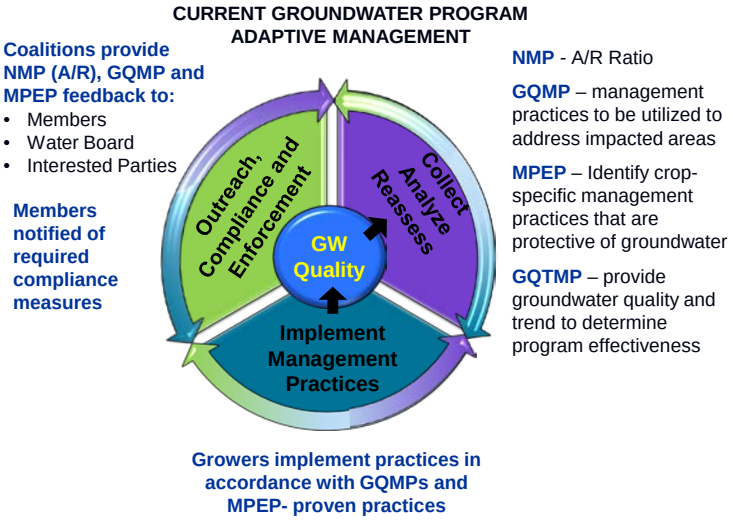
Groundwater element with information available in the medium-term

Management Practices Evaluation Program, MPEP (Work plan due 4 June 2016, first studies to begin in 2016): The MPEP will include focused studies, monitoring, and modeling to answer specific questions regarding agricultural management practices, including A/R ratios, and to provide the linkage to groundwater quality. Once crop-specific, effective management practices are identified for certain site conditions (soil texture and depth to groundwater, etc.), other growers with similar conditions will be required to implement those practices. Growers who do not implement the MPEP-proven practices as required will not be eligible for coverage under the Coalition Group General WDRs and would be required to implement an individual groundwater quality monitoring and reporting program.

Groundwater element with information available in the long-term

Groundwater Quality Trend Monitoring Program, GQTMP (Conditional approval of the Phase I GQTMP received on 4 December 2015, Coalition is working on final approval of the GQTMP): The GQTMP includes a network of wells positioned to determine long-term trends in groundwater quality to assess the effectiveness of the ILRP groundwater program over time. The trend monitoring data will also be used to identify areas in need of GQMPs.

Figure 1 below illustrates the adaptive and iterative nature of the ILRP groundwater (GW) program and the linkage between the elements discussed above.



For all of the foregoing reasons, mandating the A/R ratio as the primary regulatory tool for addressing nitrogen-related threats to water quality is inappropriate at this time. The Central Valley Water Board therefore urges the State Water Board to endorse the existing General WDRs approach of linking management practices, site-specific factors, and effects on groundwater quality, coupled with early implementation of measures to reduce nitrogen loading.

IV. Mandatory Field-Level Reporting to the Central Valley Water Board

A. The Draft Order's Correlation Approach Cannot Work and Is Not Needed

One of the biggest policy shifts proposed by the Draft Order is the switch towards mandatory reporting of field-level data to the Central Valley Water Board.[6] The Draft Order requires that the coalitions supply this information to the Central Valley Water Board because this would ostensibly allow the Board to corroborate field-level management practices with changes in water quality:

> The most direct manner in which to link management practice implementation at the field level with water quality data is to use location as the common identifier. In particular, identifying field-level data by location allows for *location-based analyses*, enabling *layering of multiple sets of data* geographically within the watershed, including water quality monitoring data and other data such as … nitrogen application data … . When such *correlation of management practice implementation data and surface water and groundwater quality data* is completed at a watershed, regional, or even statewide level, the water boards will be able to identify effective and ineffective management practices under a variety of conditions.[7]

However, though these requirements expand the volume of documents and data that must be reviewed and managed by the Board, the ability to correlate field-level management practices with water quality in the manner described by the Draft Order is illusory.

The Draft Order takes the field-level submissions that the existing General WDRs already require Members to report to the coalitions and requires the coalitions to relay this same information to the Board in raw form. These field-level submissions are extensive. For example, the Farm Evaluation template requires not only a "whole farm" evaluation, but also a "field specific" evaluation.[8] The provisions detailing "minimum" requirements for INMP Summary Reports similarly identify field-specific information "for each parcel enrolled."[9] In addition, the Draft Order requires each Member to prepare an INMP summary report for each "field, and for each crop within that field and provide all summary reports to the Coalition who must provide the INMP Summary Report data to the Board."[10]

If there was a way to draw meaningful conclusions about management practices employed at *one individual field* and what is seen in the groundwater at a certain point in the aquifer, perhaps field-level data could be useful. But this is not the case. Instead, the only scientifically supportable type of corroboration between management practices and water quality trends involves a comparison of broader surveys of what is occurring on a number of different fields in a localized area with aggregated groundwater data. And this is exactly what is underway with

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[6] *See, e.g.*, Draft Order, Att. A, Part VII.D, p. 29.

[7] Draft Order, pp. 28-29 (emphasis added).

[8] Draft Order, Appendix MRP-3, pp. 2-3.

[9] Draft Order, Att. B, Part VI.B, pp. 29-30; *see also* Appendix MRP-4. The State Water Board should revise the Draft Order to clarify when and how streamlining of the reporting will be allowed.

[10] Draft Order, Att. A, Part VII.D, pp. 28-29.

the Board's MPEP studies: they are designed to link aboveground management practices with protection of groundwater quality in a scientifically defensible manner.

There are two crucial differences between the MPEP and the type of correlative analysis described in the Draft Order. First, the MPEP is more efficient because it relies on targeted, cost-effective, science-based pilot studies that leverage local resources and the scientific community rather than relying on ILRP staff. From those pilot studies, experts can reasonably draw conclusions about one or a combination of management practices under a given set of conditions and report to the Central Valley Water Board accordingly. Second, the MPEP will actually succeed at its task because it accounts for all of the most relevant factors that affect nitrate pathways to groundwater, not just A/R. Including factors such as physiological characteristics (depth to groundwater, soil texture and health, etc.), fertilizer type, application and timing, and irrigation practices – in addition to A/R – is essential to understanding what effect management practices will have on groundwater under a variety of real world conditions.

The Draft Order's changes would impose an impossible task on ILRP staff: gathering thousands of data points from all Members – some of which may not be accurate or reliable – and conducting complex multi-variable correlative analyses that are technically incapable of providing meaningful information about protection of groundwater quality. The Central Valley Water Board does not agree that the Draft Order's proposed approach of correlating all available data points can even be accomplished in a scientifically supportable manner for the reasons discussed in more detail in the A/R section of these comments, above.[11]

B. Reporting field-level data to the Board will not enhance Accountability

The Draft Order also defends its mandate that requires reporting of field-level data to the Central Valley Water Board based on the expectation that it will increase accountability, both for individual Members and for the Coalition. The Draft Order provides:

> Because the multi-year A/R ratio will provide a concrete, measurable, and reliable benchmark by which progress in reducing groundwater nitrate impacts can be determined, we find that data should be reported to the Central Valley Water Board by field, identified by location.[12]

The Draft Order further states that transmitting field-level data to the Central Valley Water Board, identified by location,

> … allows for appropriate oversight by the Board. Access to the full field level data set enables auditing of the Third Party and allows the [Board] to verify the accuracy and completeness of the Third Party's calculations and analyses. Further, it facilitates responding to indications of over-application by any given Member. ... The [Board] *cannot exercise this type of oversight only with aggregated data*.[13]

The Central Valley Water Board is concerned that these statements display a lack of understanding regarding the existing General WDRs – specifically, how the Board *is* able to keep the Coalition and individual Members accountable, as well as provide adequate public access to meaningful data that can be used to evaluate the success of the Board's ILRP.

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[11] *See* p. 4, *supra*.

[12] Draft Order, p. 38.

[13] *Id.* at p. 39 (emphasis added).

As already explained in these comments,[14] the Draft Order is mistaken: A/R by itself is not an appropriate proxy for measuring an individual Member's progress toward reducing nitrate impacts to groundwater. Moreover, the Central Valley Water Board already has ample information and tools under the existing General WDRs to hold Members accountable with respect to nitrogen over-application. Coalition township summaries allow the Board to efficiently digest the data that are most relevant to water quality and quickly identify individual farming operations in need of additional scrutiny. These summaries are essential for program effectiveness.

Under the existing General WDRs, the Coalition provides a statistical summary of field-level nitrogen management data by crop type for each township.[15] These township-level summaries are *not just averages* of the field-level data. They show the range and distribution of nitrogen consumption ratios by crop or other equivalent reporting units, as well as the estimated crop nitrogen needs for the different crop types and soil conditions (e.g., nitrogen applied/removed ratios as required by the Executive Officer-approved nitrogen management plan templates). The summaries also call particular attention to field-level data points that are statistical outliers based on other growers with similar soil conditions and crops.[16] ILRP staff reviewing these township summaries can still see if an individual field's nitrogen data are abnormally high compared to similar fields in light of recommended agronomic application rates (i.e., CDFA/UC recommendations for fertilizer application). Significantly, members of the Expert Panel that presented before the State Water Board during workshops on this topic opined that data more granular than township data does not enhance the Board's understanding of water quality problems. Dr. Thomas Harter pointed out during his May 17, 2016 presentation at the State Water Board workshop, township-level data is preferable for another reason, as well: its spatial scale matches the scale at which a groundwater well's source area can be known.[17] Field-level data does not.

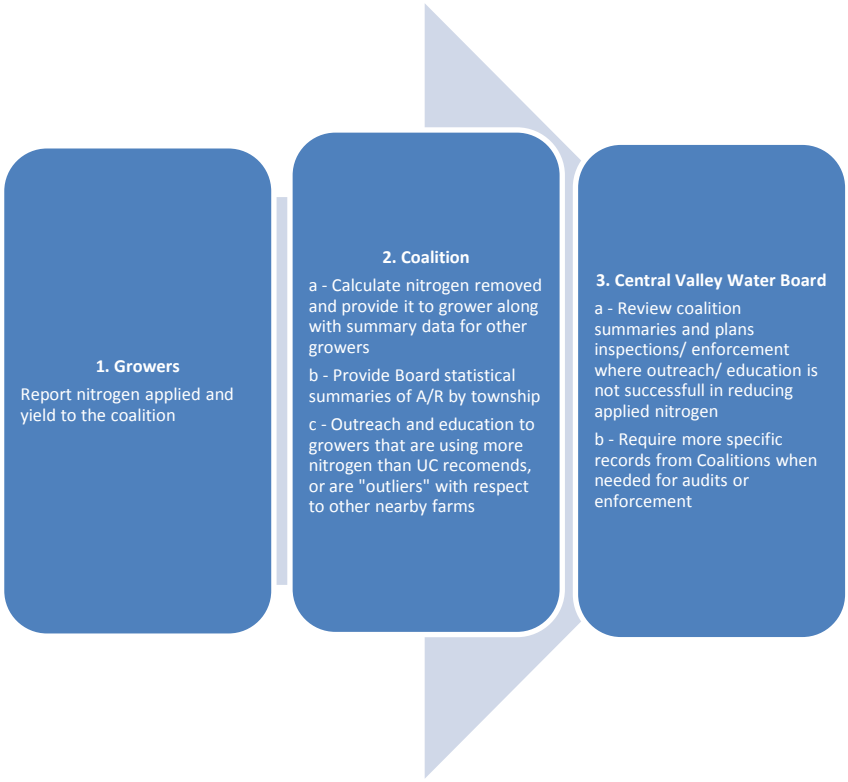
The existing General WDRs already give the Board adequate means to use the Coalition's township summaries to initiate follow-up actions such as outreach and education – and, if necessary, enforcement actions – when a Member's nitrogen application is consistently higher than recommended agronomic rates on the Coalition's township summary (i.e., outliers). This process, which is outlined in **Figure 2** below, is designed to ensure that meaningful reductions in nitrogen loading will occur in the short-term while coalitions develop and implement the longer-term, science-based MPEP process.

[14] *See* pp. 4−8, *supra*.

[15] General Waste Discharge Requirements for Growers within the Eastern San Joaquin River Watershed that are Members of a Third-Party Group, Order No. R5-2012-0116-R3 (hereinafter "ESJ General WDRs"), Att. B, Part V.C.17, p. 23.

[16] *Id*.

[17] *See* Thomas Harter, Ph.D., *Comments on SWRCB Draft Order to revise R5-2012-0116* (May 17, 2016), *available at* http://www.swrcb.ca.gov/public_notices/petitions/water_quality/docs/a2239/workshops/harter.pdf.



In addition to identifying outliers, the Central Valley Water Board also requires the Coalition to identify Members who do not submit the required nitrogen management plan summary reports or farm evaluations. The Board has thus far issued *hundreds* of Notices of Violation to growers who did not submit farm evaluations, and will be pursuing progressive enforcement against a subset of these growers for their failure to submit other reports as required by their WDRs.

In summary, the existing General WDRs already require that coalitions submit all that is needed for the Central Valley Water Board to ensure Member compliance with program requirements and to protect water quality. The WDRs also include a process by which the Central Valley Water Board will require individual Member-specific information as part of audits to verify the accuracy of coalition submittals. In contrast, the Draft Order short-circuits this process by requiring all data to be submitted to the Central Valley Water Board all the time, and further indicates that the Board must use this data to conduct technically infeasible analyses and correlations.

C. Field-level Reporting to the Board will Overwhelm Board Resources without Conferring Significant Water Quality Benefits

Submitting field-level data and documents to the Central Valley Water Board would threaten the ILRP's ability to operate effectively. As explained below, the proposed additional reporting requirements in the Draft Order would overwhelm Board staff, diminish the value of the coalitions, and unnecessarily increase grower costs.

Utilizing limited resources, the Board has obligated its ILRP staff to review and comment on Coalition reports (assessment, monitoring, management, and management practices evaluation), provide oversight of implementation activities, initiate compliance and enforcement actions against growers who have not enrolled or who have failed to comply with the WDRs, manage the significant amount of surface water monitoring data received for the program, and coordinate with governmental partners and other interested parties to further develop and refine

the ILRP. Without adding additional staff (which must be funded through regulatory fees), it would be impossible to add to this workload without neglecting some of these core regulatory functions. For example, under the Draft Order, each of the approximately 35,000 farming operations subject to the ILRP would be required to submit at least one Farm Evaluation and one INMP Summary Report to the Board each year.[18] The Board could not conduct even a cursory review of these hundreds of thousands of reports without impeding staff's ability to execute the rest of its program responsibilities effectively. Even if the kind of correlative, geographically-based analysis described in the Draft Order were theoretically possible (and the Board has shown that it is not), no ILRP staff would have time available to devote to that task.[19] ILRP's extensive staff responsibilities are precisely why coalitions were central to development of the ILRP for the Central Valley Water Board: running a robust program that is protective of water quality with limited staff requires the Board to rely on the coalitions for their administrative and outreach capabilities.

The coalitions are vital to the overall success of the Board's agriculture program, for two reasons.

1. First, coalitions serve a crucial translating function when it comes to turning Members' raw data entries into reliable, high quality information.
    - Coalitions are uniquely familiar with their Members and with local conditions in a manner that makes them best situated to identify or explain anomalies in Members' reports.
    - Coalitions can and do follow up on questionable information to ensure that the data that ultimately makes it to the Central Valley Water Board is accurate and reliable. Such follow-up is both invaluable and incredibly time-consuming, and ILRP staff would never have the time, knowledge, or necessary trust among the grower community to do it themselves.
2. Second, as discussed earlier, aggregating and summarizing Member information at the township level synthesizes water quality information for the Board in a format that is readily accessible and useful for evaluating compliance, ensuring accountability, and ultimately protecting water quality.
    - This function is *essential for program effectiveness*: it allows ILRP staff to devote its focus, time, and resources to actual analysis and oversight rather than to mere document review. This process optimizes staff time for maximum effectiveness and leverages the Coalition's resources.
    - Further, it provides necessary feedback mechanisms for the Board to determine if the program is meeting its established objectives and to respond appropriately without overwhelming the Central Valley Water Board with less relevant data.

Coalitions are voluntary organizations that can only survive with Member participation. Given the critical importance of the coalitions for the Central Valley ILRP, the Central Valley Water Board remains concerned that the "pass through" approach to field-level data in the Draft Order

[18] Additionally, growers without a multi-year INMP would be required to submit annual INMPs.

[19] Furthermore, properly manipulating hundreds of thousands of location-based data points and drawing sound conclusions from them requires not only the right data, but also advanced expertise in analytics. The Central Valley Water Board does not have anyone on staff with such sophisticated expertise, and the Board lacks the budget to contract out for that kind of work.

undermines the usefulness of the coalitions to the growers. The Draft Order requires the Coalition to annually submit all INMP Summary Reports it receives from Members to the Central Valley Water Board at the field/crop level (i.e., not aggregated or summarized),[20] effectively reducing the Coalition's role to a conduit for Member documents. Those INMP Summary Reports must be submitted to the Central Valley Water Board in PDF format until GeoTracker can accommodate them,[21] thereby creating additional document and data management challenges for ILRP staff. Additionally, the Coalition would be required to create and submit to the Central Valley Water Board an "electronic database table containing the individual data values reported from all of the INMP Summary Reports."[22] (Although the Draft Order frames this requirement as a temporary measure until GeoTracker can accommodate those data values, prior experience suggests updating GeoTracker and training its users accordingly may take much longer than the Draft Order anticipates.)

The Draft Order also adds redundant or unnecessary requirements regarding analysis and long-term retention of these field-level documents and data. Under the Draft Order, coalitions will be obligated to prepare and annually submit to the Central Valley Water Board an evaluation "comparing individual field data" from INMP Summary Reports.[23] This INMP Summary Report Evaluation would compare and correlate A/R values to irrigation method, soil conditions, and farming operation size, both between crops and within the same crop type.[24] This same evaluation would identify the A/R mean and standard deviation, and the Draft Order would require the Coalition to submit spreadsheets showing the calculations for each.[25] These requirements would appear to be duplicative of both the MPEP and the correlative analysis that the Draft Order would require the Central Valley Water Board to undertake. The Draft Order also requires the Coalition to propose a mechanism for backing up and storing all of the field-specific data submitted on Farm Evaluations and INMP Summary Reports in a "secure offsite location managed by an independent entity that specializes in the protection of data."[26] This mechanism would be used to maintain all Farm Evaluations, INMP Summary Reports, and electronic database tables created from INMP Summary Reports for a minimum of 10 years.[27] Although one or more coalitions within the ILRP already manage data similarly, this requirement represents a significant added cost for those that do not, with no discernible benefit to the Board.

If the coalitions' primary function is to simply relay the same raw field-level data and documents that they receive from Members to the Central Valley Water Board, it would be understandable if many Members stop seeing the value of coalitions entirely. Moreover, increased Coalition responsibilities under the Draft Order will almost inevitably result in Members having to pay higher Coalition fees. *The prospect of paying more to the Coalition for less value is likely to result in many growers opting to leave the Coalition.* Such a result would be calamitous for the ILRP; grower flight from coalitions would render the program outright unworkable.

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[20] Draft Order, Att. A, Part VII.D, p. 29.

[21] *See id.*

[22] Draft Order, Att. B, Part V.D, p. 23.

[23] Draft Order, Att. B, V.E.18, pp. 26-27.

[24] *Id.*

[25] *Id.*

[26] Draft Order, Att. A, Part X, p. 41.

[27] *Id.*

D. The existing General WDRs comply with the Nonpoint Source Policy

The Draft Order suggests that reporting field level data is needed to comply with the Nonpoint Source Policy. The Central Valley Water Board does not agree. The current approach of using township summaries provides ILRP staff a level of data that provides sufficient feedback to adequately assess Members' progress and compliance. Under the existing General WDRs, township-level summaries, together with the MPEP, trend monitoring, and other reporting requirements, will allow the Board to measure ILRP's success in meeting program objectives.

On March 15, 2015, Judge Timothy Frawley provided the most relevant judicial interpretation of the Nonpoint Source Policy to date in the context of the Central Coast Water Board's conditional waiver for irrigated agriculture.[28] The Petitioners in that case argued that the Central Coast ILRP violated the Nonpoint Source Policy because its monitoring and reporting provisions were inadequate and because its iterative process for improving water quality was insufficiently rigorous. Although the court concluded that the Central Coast ILRP's monitoring and reporting provisions fell short of what the Nonpoint Source Policy requires, it declined to require field-level monitoring and reporting. Instead, the court only required "some means to verify that implemented management practices are effectively controlling the relevant discharge," and "sufficient feedback mechanisms to ensure that the Waiver is achieving its stated purpose."[29] When ruling on the adequacy of the waiver's surface monitoring requirements under the Nonpoint Source Policy, the court even opined that, "[w]hile individual monitoring might provide more information, it would be *complicated, costly, and would threaten to overwhelm Regional Board staff*."[30]

Existing reporting requirements under the Central Valley Water Board's ILRP satisfy the standard articulated by Judge Frawley, and nothing in the Draft Order supports a contrary finding. As previous sections have shown, the existing General WDRs require the coalitions to expend significant resources to identify those types of management practices that are protective of water quality, require growers to implement those practices, require the identification of statistical outliers within individual townships, and require that the coalitions monitor groundwater trends to ascertain progress in meeting water quality objectives. Furthermore, under the existing WDRs, the Board can and will hold individual Members accountable; the Central Valley Water Board will continually assess township-level reporting of nitrogen management information (including A/R) and will bring its compliance and enforcement authority to bear on those growers who unjustifiably apply nitrogen in excess of their peers (outliers) or who fail to implement proven management practices.

In contrast, the Central Valley Water Board questions whether the Draft Order's approach of placing heavy reliance on A/R Ratios can comply with the Nonpoint Source Policy's imperative that the program have a "high likelihood of success." As has been shown, the Draft Order's approach of simply correlating aboveground practices with groundwater quality representing decades-old activities is incapable of providing a scientifically defensible link between management practices and groundwater quality.

In sum, the Central Valley Water Board disagrees that field-level reporting is necessary to comply with the Nonpoint Source Policy, and urges the State Water Board to reconsider imposing such new mandates.

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[28] *Monterey Coastkeeper v. California State Water Resources Control Board* (Super. Ct. Sac. County, No. 34-2012-80001324) (hereinafter "Frawley Order").

[29] Frawley Order, p. 36, n. 12.

[30] Frawley Order, p. 41 (emphasis added).

V. Drinking Water Well Monitoring Requirements

The Draft Order imposes a wholly new groundwater monitoring requirement for the Central Valley Region's ILRP pertaining to monitoring of on-farm drinking water wells for nitrates. Specifically, Members will be required to periodically monitor and test all drinking water supply wells "on their property" for nitrates (the frequency depends on the results of preliminary testing).[31] As currently written, the Draft Order requires the results of the drinking water supply well monitoring to be submitted electronically to the State Water Board's GeoTracker Database, but does not specify whether this task is the responsibility of the Member or the Third-Party. Additionally, the Third-Party is required to include the results of drinking water supply well monitoring in the annual Monitoring Report submittal to the Central Valley Water Board. When testing reveals an exceedance of a maximum contaminant level ("MCL") for nitrates, either the Coalition or the Member must notify the Central Valley Water Board within 24 hours of learning of the exceedance. If the Member is the property owner, the Member must notify all users of the affected well within 10 days. If the Member is not the property owner, the Draft Order requires the Central Valley Water Board to notify all users of the affected well "promptly."[32]

The Central Valley Water Board fervently supports the human right to water, as demonstrated by its recent Board resolution[33] directing staff to implement the human right to water as a core value. In support of that value, the Central Valley Water Board is committed to continuing its work with disadvantaged communities to secure safe, clean, affordable, and accessible water sources both in the short term and into the future. Therefore, the Board supports obtaining domestic drinking water well data to identify and quickly remedy MCL exceedances. However, the Draft Order obligates the Central Valley Water Board to take swift action to protect public health based on the results of this a massive new well sampling initiative – and the Board may not be able to fulfill these obligations with its limited resources. (For more details, see the cost discussion in the following section.)

The Central Valley Water Board's best estimate of the average number of on-farm drinking water wells region-wide is at least two per farm across approximately 35,000 farming operations, or about 70,000 data points. Additionally, communication with Central Coast Water Board staff has revealed that establishing contact with the users of a particular on-farm domestic well can prove both challenging and time-consuming. Partly for this reason, the Central Valley Water Board recommends that joint responsibility be assigned to landowners/farm operators for user notification related to MCL exceedances. This requirement is consistent with Finding 8 of the existing General WDRs, which states that both the landowner and operator are responsible for complying with the terms and conditions of the Order. Additionally, requiring communication between landowners and operators will allow future users to remain informed of water quality issues when a new tenant takes over farming operations.

The Central Coast Water Board's experience is instructive for another reason, as well. That region has benefited from a very cooperative and proactive county health department with programs and resources to help facilitate notice, conduct outreach, and provide well sampling. However, many parts of the Central Valley do not have local authorities with similar expertise, staffing, or willingness to take on this responsibility. Therefore, the Central Valley Water Board

[31] Draft Order, Att. A, Part VII.E, p. 31. The Draft Order's revised MRP only requires Members to test drinking water wells "on their property," suggesting that they are not required to test wells on property they farm but do not own. However, the MRP later distinguishes the notice requirements based on whether the Member that tested the wells is/is not the property owner. This discrepancy should be reconciled before final adoption of the order.

[32] Draft Order, Att. B, Section IV.A, pp. 14-15.

[33] Regional Water Quality Control Board, Central Valley, Resolution No, R5-2016-0018 (April 21, 2016).

would need to take on even more of a lead role than the Central Coast Water Board has taken on to ensure that its Members comply with monitoring and reporting requirements and that users have timely notice of MCL exceedances. Considering the number of small farms and anticipated difficulties obtaining information about land ownership and well users, the Central Valley Water Board simply does not have the capacity to handle this requirement effectively without additional resources.

If the State Water Board wishes to make monitoring and reporting for drinking water wells a priority, the Central Valley Water Board urges it to take a holistic approach that covers more than one industry, covers more than just one pollutant, and which leverages state and local public health resources. In many locations throughout the Central Valley Region, on-farm domestic drinking water wells are adjacent to communities that also rely on groundwater, but whose wells are not "on-farm," and thus would not fall within the Draft Order's requirements. The Central Valley Water Board believes that contamination of drinking water wells is worthy of action whether the wells happen to be situated on-farm or elsewhere. Additionally, while nitrates are among the most significant pollutants in drinking water supplies that threaten public health, there are others. Monitoring and reporting MCL exceedances for certain pesticides (e.g. simazine and atrazine), or arsenic, for example, would similarly help fulfill the State Water Board's commitment to the human right to water. In sum, the goal of ensuring safe drinking water from domestic wells throughout the state is worthy of implementation through a comprehensive, forward-looking policy.

VI. More Annual Deliverables under the Draft Order

A. New Requirements under the Draft Order

The Draft Order significantly increases the number of annual deliverables compared to the existing General WDRs, both for Members and for the Coalition. For example, under the Draft Order, all Members would be required to submit Farm Evaluations to the Coalition annually – a requirement that only used to apply every five years for Members outside of "high vulnerability areas."[34] As stated in the main body of the Draft Order:

> [The State Water Board finds] that annual updates to the Farm Evaluations are appropriate for all Members given that the Farm Evaluations are the mechanism for identification of the on-farm management practices implemented to achieve the General WDRs' management practice performance standards and that iterative updating of the management practices implemented is a key component of a nonpoint source program.[35]

All Members also must submit Irrigation and Nutrient Management Plan ("INMP") Summary Reports annually, documenting implementation of the previous year's INMP.[36] All Members would be required to participate in Coalition outreach events at least once per year and report their participation to the Coalition an annual basis.[37] The Draft Order's domestic drinking water well monitoring requirements also translate into additional annual deliverables for Members.

The Coalition would be required to submit all Farm Evaluations and INMP Summary Reports received from Members to the Central Valley Water Board annually. Unlike under the existing General WDRs, the Coalition would not be able to reduce or streamline reporting requirements

[34] Draft Order, Att. A, Part VII.B.1 (p. 26)

[35] Draft Order, p. 26.

[36] Draft Order, Att. A, Part VII.D, pp. 28-30.

[37] Draft Order, Att. A, Part IV.B.4, p. 20.

for Members that consistently showed positive results.[38] Until the GeoTracker database is updated to accommodate these uploads, coalitions would be required to submit Farm Evaluations to the Board in PDF format.[39] The Coalition also would be required to upload individual data values from the INMP Summary Reports to an electronic database each year.[40] Finally, the Coalition would be required to annually summarize the results of all Members' drinking water well monitoring data.[41]

B. Existing General WDRs Requirements

Under the existing General WDRs, Members whose farming operations are deemed to pose a lower threat to water quality (based on the high/low vulnerability distinction) generally are not required to report on an annual basis. So-called "low vulnerability Members" need only submit a Farm Evaluation every 5 years,[42] and their Nitrogen Management Plan ("NMP") does not have to be certified.[43] (An NMP Summary Report is not required at all for low-vulnerability Members.[44]) Although the existing General WDRs require all of these documents to be submitted annually for high-vulnerability Members, Members whose reports consistently demonstrate improved water quality may, with approval of the Executive Officer, be subject to less frequent or more streamlined reporting.[45] In addition, as noted already, the existing General WDRs contain no domestic drinking water well monitoring requirements.

C. Central Valley Water Board Response to New Requirements

As a preliminary matter, the Central Valley Water Board does not oppose abolishing the high/low vulnerability distinction and is not disputing the State Water Board's rationale for doing so. The Central Valley Water Board has found that the high/low vulnerability distinction in the existing General WDRs has become problematic because only Members within high vulnerability areas are required to participate and fund the MPEP and trend monitoring, even though the Board intended for these activities to be funded by all Members. Removing the designation would therefore allow the obligations to be funded in a more equitable manner.

However, it is important to recognize the crucial role the high/low vulnerability distinction has played in keeping the ILRP workload to a manageable level and in helping to marshal resources toward the greatest water quality threats. The existing General WDRs represent a finding that (1) discharges to high vulnerability areas are the more urgent threat to water quality, and (2) ILRP staff should focus scrutiny on the more urgent threats to water quality. Even if the first rationale fails, the second still holds. Program effectiveness depends on ensuring that the information reported to ILRP staff is of a manageable volume, in an accessible format, and the most relevant information to protecting water quality. By effectively transforming the entire East San Joaquin Coalition area into a high vulnerability area, the Draft Order's new and expanded annual reports dramatically exceed what ILRP staff can meaningfully review and analyze.

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[38] *See* Draft Order, Att. A, Part VII.D, p. 31 (strikeout text).

[39] Draft Order, Att. B, Part V.C, p. 23; *id.* Part V.D.

[40] Draft Order, Att. B, Part V.D, p. 23.

[41] Draft Order, Att. B, V.E.17, p. 26.

[42] ESJ General WDRs, Part VII.B.1, p. 24.

[43] *Id.* Part VII.D.2, p. 27.

[44] *Id.*

[45] *Id.*

Although the Draft Order allows the Board to continue using the high/low vulnerability distinction to prioritize its workload, it does not adequately address the tremendous increase in compliance costs for the regulated community because of this change. Currently, the Central Valley Water Board has ILRP staff totaling 18.7 personnel years ("PYs"). Given the additional requirements outlined in the Draft Order, the Board estimated the increased grower costs and Board staffing needs to meet the Draft Order's proposed requirements. Board personnel needs were approximated in two ways:

1. By direct comparison to the Central Coast Water Board based on the acreage covered;[46] and
2. By assigning hours to the individual Draft Order tasks, based on how long they have taken in the past or on anticipated levels of effort approximated from similar work that staff would need to perform under the Draft Order.

The PYs from these two estimates totaled 90 and 99 PYs, respectively (a 71.3 and 80.3 PY increase). 90 PYs is greater than the total staffing statewide for all regional boards' ILRPs. Based on calculations from the Board's Fees Unit, adding 1 PY is approximately equivalent to a 3.2 cent per acre per year increase in fees to the grower. Therefore, taking the lower of the two estimates, 71.3 PYs results in an increased cost to the grower of $2.28 per acre per year. Based on the total ILRP acreage in the East San Joaquin Coalition area, the Draft Order's proposed requirements represent an annual increase in costs to the growers of $1.6 million dollars per year. The program-wide cost to all growers within the Central Valley region would total $13 million.

Members and the Coalition would incur additional costs as a result of expanded monitoring and reporting. The increased costs resulting from implementation of the Draft Order are shown in Table 2 These costs were estimated based on the unit costs provided in the Programmatic EIR and based on eliminating reduced reporting for low-vulnerability growers. The costs presented in Table 2 do not include Water Board fees to the growers to support the ILRP, which would result in the Water Board fee increase already discussed.

Table 2 - Increases in grower and Coalition costs per acre/year (does not include Board staff.)

East San Joaquin	Current Cost	Post Order Cost	Change/yr (ESJ)	Change/yr (region)
Administration*	$ 0.85	$ 1.28	$ 300,000	$ 2.4 million
Education	$ 0.68	$ 1.23	$ 380,000	$ 3.1 million
Farm plans	$ 0.71	$ 0.84	$ 91,000	$ 730,000
Monitoring/reporting/tracking	$ 3.66	$ 5.79	$ 1.5 million	$ 12 million
Management practices	$ 113.34	$ 113.34	$ 0	$0
Total	$ 119.24	$ 122.48	$ 2.3 million	$ 18 million

* Assumes 50% increase in coalition administration costs, due to increased reporting and outreach from removal of focus on High Vulnerability Area, addition of domestic well monitoring, and other Draft Order requirements.

Resource constraints aside, annual reporting does not always provide useful information, particularly when there is no significant change in management practices from the previous year. The Draft Order's own rationale for requiring all Members to report annually (quoted above) assumes that all Members are constantly updating their farming operations. That

[46] The Central Coast Water Board currently requires domestic well monitoring similar to that proposed in the Draft Order. Therefore, staff resources needed for the Central Valley Water Board ILRP to implement the Draft Order would have to be at least comparable to that of the Central Coast Water Board.

assumption may not be warranted for the many farming operations where updates are not needed. The Central Valley Water Board therefore requests that the State Water Board consider alternative approaches that would allow the regional water boards flexibility to require such deliverables where they are needed. Practices on certain commodity groups do not change annually, and in some areas there is not the need for annual reporting. (For example, rice fields are demonstrated to be low threat with respect to nitrogen leaching, so the Board should have the flexibility to maintain current reduced reporting/certification requirements.) The Draft Order should allow the Central Valley Water Board to identify commodity types/areas where 5-year reporting and reduced A/Y reporting meets program goals.

VII. Adequacy of the Existing Surface Water Monitoring Program

The Draft Order requires the Central Valley Water Board to re-open its ILRP orders to revise its surface water monitoring programs. The Draft Order asserts that the monitoring data collected under the Central Valley Water Board's existing programs are not "of sufficient density (spatially and temporally) to identify general locations of possible pollution" and that the program is not likely to meet the Nonpoint Source Policy's mandate to "include sufficient feedback mechanisms so that the regional water board, dischargers, and the public can determine whether the program is achieving its stated purpose(s) …"[47] However, the Draft Order does not specify how the existing monitoring program under the Eastern San Joaquin General WDRs has fallen short of what is needed to "identify general locations of possible pollution"[48] or why the current feedback mechanisms are insufficient.

In fact, the Central Valley Water Board's existing surface water monitoring program has been highly successful at identifying locations and sources of surface water quality pollution. As summarized below, it is the product of more than 13 years of accumulated knowledge and experience – in particular, experience which includes previously requiring coalitions to monitor numerous water bodies throughout the watershed. After finding that such all-inclusive monitoring resulted in coalitions spending most of their funds on monitoring with little left over for implementation of actual water quality improvements, the Board refined its approach into the robust, effective, and science-based monitoring program that exists today. The Central Valley Water Board urges the State Water Board to reconsider the merits of the existing surface water quality monitoring program and how it might already fulfill the goals of the Agricultural Expert Panel Report.

A. Origins of the Existing Monitoring Program

The ILRP Monitoring and Reporting Program ("MRP") for surface water has undergone several iterations since 2003. Under the 2005 MRP, a three-phase monitoring process was required. Each phase monitored a different suite of constituents for at least two years at numerous water bodies and required upstream monitoring following any observed exceedances. This strategy was deemed ineffective because: (1) related constituents (e.g., pesticides and toxicity) were not being monitored concurrently; (2) follow-up monitoring does not work due to the rapid changes in surface water quality; (3) substantial periods of time between monitoring at different sites produces incomparable results due to changing crop patterns and climate; and (4) it resulted in a complex monitoring program schedule that was difficult to track, with unclear follow-up requirements.

[47] Draft Order, p. 45 (quoting Agricultural Expert Panel Report, p. 41); *id.* at p. 46.

[48] Agricultural Expert Panel Report, p. 41.

The Central Valley Water Board and stakeholders formed a Technical Issues Committee in response to several complex monitoring and reporting issues identified in the early years of the ILRP. The committee met from 2005 through 2010 to identify technical issues and the expertise needed to develop science-based recommendations for Board staff. The Technical Issues Committee was composed of Coalition representatives, consultants, laboratory representatives, the California Department of Pesticide Regulation, the California Department of Food and Agriculture, USDA-NRCS, and other entities with scientific expertise specific to surface water quality monitoring.

The 2008 MRP incorporated Technical Issues Committee recommendations. The strategy was revised based on many problems that arose under the 2005 MRP. Monitoring phases were eliminated and representative monitoring was allowed with adequate justification and at least one full year of monitoring at a site. The concept of Assessment and Core monitoring in a three-year rotation cycle was introduced, as was the identification of Core, Assessment and Special Project sites. The 2008 MRP included a static list of pesticides to be monitored.

Through numerous committee and focus group meetings and a structured, consensus-based process, the group submitted 15 recommendations for Central Valley Water Board to consider while developing the Monitoring and Reporting Program. Those recommendations underwent independent technical review by Dr. Brock Bernstein of the Southern California Coastal Water Research Project ("SCCWRP"). Dr. Bernstein collaborated with the Technical Issues Committee to prepare a Monitoring Design Guidance Document that would serve as guidance for coalitions when designing their monitoring programs. The Monitoring Guidance Document reflected one of the key findings of this multi-party re-evaluation of monitoring under ILRP: the need to allow program flexibility to account for the great diversity of environmental conditions within the Central Valley Region.

B. Structure of Existing Surface Water Monitoring Program

Based on the foregoing experience, the Central Valley Water Board crafted the existing surface water quality monitoring program for the Eastern San Joaquin River Watershed, which consists of the following elements:

- **Core Sites:** The Coalition area is divided up into 6 zones; the boundaries were drawn based on soils, climate, hydrology, and other relevant factors that distinguish them from other zones covered by the Coalition. With input and approval from the Executive Officer, the Coalition selects core monitoring sites in each zone that are determined to be representative of agricultural operations within the watershed based on cropping patterns, soil types, rainfall, cultural farming practices, and other conditions occurring within the area. The Coalition conducts surface water monitoring for a comprehensive suite of parameters on a regular, ongoing basis at those Core Sites. Exceedances at Core Sites trigger an evaluation of risk to water quality at Represented Sites in the same monitoring zone, including assessment of pesticide use data, cropping patterns, previous monitoring results and other relevant factors.
- **Represented Sites:** The Coalition identifies, with input and approval from the Executive Officer, approximately 25 "Represented Sites" in water bodies throughout their area that are represented by the Core Sites based on cropping patterns, pesticide use, and physical factors. One of the functions of Represented Sites is to focus follow-up efforts that the Board or the Coalition undertakes in response to an exceedance at a Core Site. Represented Sites represent a subset of the zone represented by a Core Site and provide additional spatial monitoring coverage. Focused monitoring occurs at the Represented Sites for at least two years if the risk evaluation finds there is a risk to water quality based on

local factors such as crop information, pesticide use records, and previous monitoring results.

- **Special Monitoring Projects:** For recurring or otherwise significant exceedances of water quality parameters, the existing monitoring program implements tailored monitoring projects that refine the Coalition's and the Board's understanding of the causes of identified water quality problems.
- **Management Plans:** A management plan is triggered when two exceedances of a parameter occur within three years. Once a water quality issue has been identified, the Coalition develops a Management Plan for the drainage areas where the water quality issue was identified as well as represented drainages that do not contain a monitoring site. In some cases, a drainage area within a zone has no accessible monitoring sites. Members in such areas must implement all management plan activities that occur in the representative Core site. Management plans include additional monitoring to determine the effectiveness of management practices implemented and determine whether the plan is working.
- **Pesticide Evaluation Protocol:** Due to rapidly changing chemical products and use patterns, staff determined that pesticide monitoring should be based on the Department of Pesticide Regulation and/or Agricultural Commissioner's pesticide use records for a given drainage area. This protocol is undergoing final public review steps and is anticipated to be issued in the latter half of 2016.

The Central Valley Water Board has found this monitoring strategy to be an effective way to ensure that surface water quality requirements are met while optimizing the costs of monitoring. The crucial finding from the collaborative stakeholder process that evaluated prior surface water monitoring requirements was that the Board does not have to monitor all reaches of the watershed to know what is happening throughout the watershed. Representative monitoring allows for sampling at locations that represent the effects of irrigated agriculture throughout a "represented" area. This approach is analogous, both in concept and in its success, to voter polling, surveys, and medicinal trials where a representative subset is analyzed to determine potential population level effects. Similar to these examples, representative monitoring in the ILRP considers water quality data collected at a representative site to determine water quality compliance for represented agricultural operations. Central Valley Water Board staff and scientific experts agree that representative monitoring is effectively able to determine compliance with the order, identify trends, and determine the effects operations have on surface water quality within the represented area. A comparison of management practices with monitoring results at Core Sites and Represented Sites provides the Coalition and the Board with an accurate picture of where water quality issues are occurring and identify the types of additional practices needed to solve the problems. This approach enables the Coalition to focus its surface water monitoring resources where they have the highest likelihood of detecting and addressing water quality issues. This approach also allows limited Coalition and grower resources to be expended on implementing management practices to solve water quality problems instead of gathering unnecessary additional data under a less efficient monitoring program.

C. Success of Existing Surface Water Monitoring Program

From 2003 through 2015, the East San Joaquin Coalition collected a total of 1,818 samples from 54 sites and obtained more than 61,720 measurements or analyses from water and sediment samples. As a result of this monitoring approach, around 151 active management plans currently exist in the Coalition region. Since 2003, the representative monitoring program has successfully identified 217 water quality problems (Figure 3) (i.e., management plans for 217 unique water body plus pollutant combinations have been triggered) and 78 of those have

been completed. Management plans are approved for completion when there have been water quality monitoring data (minimum three years) demonstrating compliance, documented Coalition outreach to applicable members, and implementation of practices and demonstration of practice effectiveness.

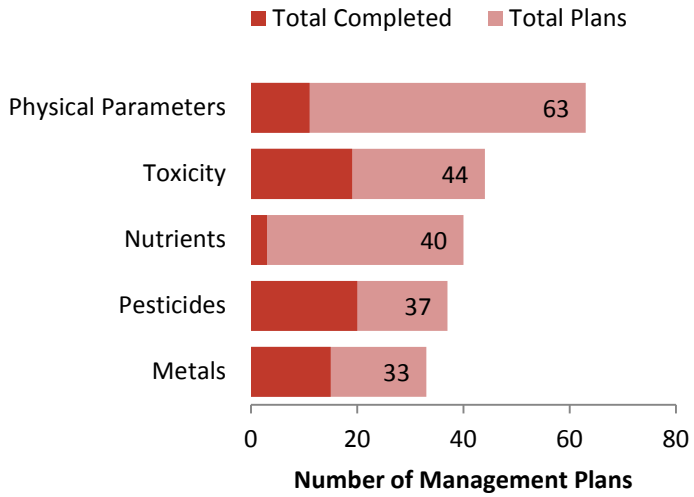

Figure 3. 217 total management plans triggered in Eastern San Joaquin River Watershed area from 2003 to present. About one-third have been completed. Pesticides and toxicity comprise nearly two-thirds of completed management plans.

The Coalition prioritizes their management plan implementation activities to focus most of their resources on resolving toxicity and pesticide problems that can easily be linked to irrigated agriculture operations. These focused activities include the identification of members who may be sources of the problem. Information obtained through pesticide use records, agricultural commissioners, and commodity groups provide a way to target their outreach efforts. On-site farm visits and focused grower surveys help the Coalition work with their members to identify new practices that will prevent discharge of the identified constituents of concern. Implementation of new practices frequently addresses multiple management plans at the same time (e.g., many sediment-bound pesticides and metals have been addressed simultaneously).

Although other management plan constituents have not received the same highly focused outreach efforts, they have not been ignored. The Coalition conducts Annual Outreach meetings and disseminates educational materials electronically to address all identified water quality issues. The Coalition is also preparing preliminary evaluations and work plans for source identification studies to address constituents that are not as easily linked to specific agricultural practices, but are influenced by multiple factors and land uses (e.g., dissolved oxygen, pH, *E. coli*).

Intensive management plan development and implementation activities generally began in 2006, although the organophosphate pesticides diazinon and chlorpyrifos were targeted water quality problems from the very beginning of the program. Improved water quality was demonstrated as early as 2007-2008 and was especially apparent beginning in 2010-11, with management plan completion approvals starting in 2012 (Figure 4). From 2012 to 2016, the Coalition successfully completed 78 of 217 (or 34%) Management Plans.

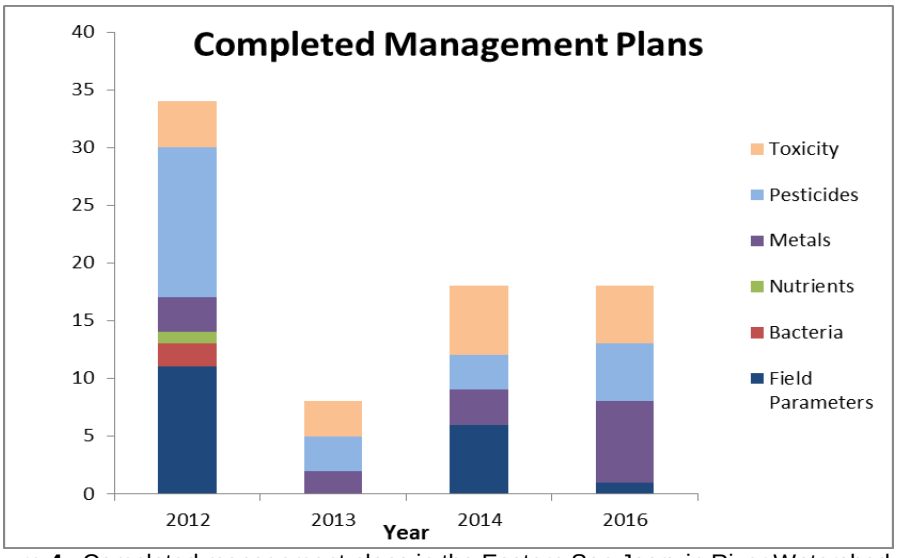

Figure 4. Completed management plans in the Eastern San Joaquin River Watershed area. Implementation began early in the program, completion approvals began in 2012.

The vast majority of completions were due to demonstration of improved water quality based on analytical results, as well as documentation of outreach and implementation of effective management practices.

All newly implemented management practices have been documented by the Coalition (Figure 5). The specific location and implementation date of each management practice is recorded. The results show a suite of different management practices have been implemented for most of the successful management plans. In general, the use of tailwater recirculation systems, sedimentation ponds, spray management practices, vegetative filtration practices, drip/microspray systems, and modification of pesticide application practices have led to significant water quality improvement.

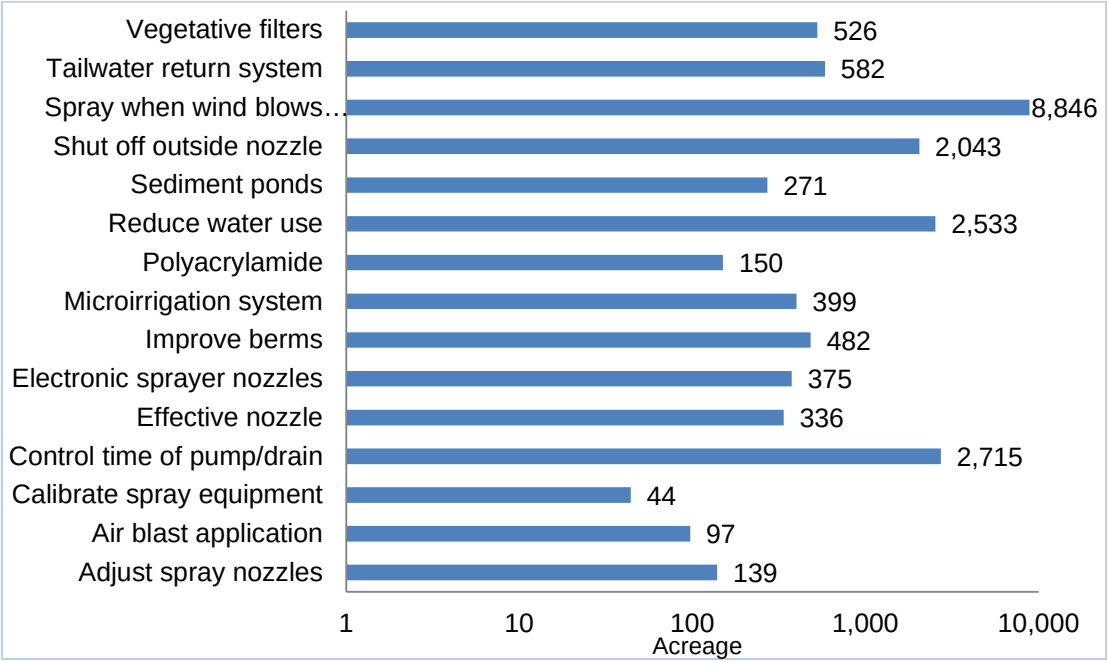

Figure 5. Summary of management practices implemented in response to management plans (with acreages of implementation). Note that the horizontal axis is on a logarithmic scale.

The data obtained in the existing surface water monitoring program has allowed the Coalition and Central Valley Water Board's ILRP staff to track implementation of new management practices by growers with improvements in surface water quality.

D. Central Valley Water Board Response to Draft Order's Directive

The Draft Order asserts that the Central Valley Water Board's existing surface water monitoring program does not monitor frequently enough and/or at enough locations, but does not base that conclusion on any specific findings or analysis regarding the existing program. The Draft Order's vague directive to "go back and do it again" raises a few significant concerns for the Central Valley Water Board.

First, as already noted, the Board already has experience requiring coalitions to monitor surface water regularly at locations throughout the watershed – with unsatisfactory results. Additional monitoring locations come at a cost, and that cost must be reasonably weighed against the probable value of the information to be gained. The existing surface water monitoring program joined this principle with science-based representative monitoring to arrive at a program that optimizes scarce Coalition resources yet still achieves measurable water quality benefits. The Central Valley Water Board urges the State Water Board to re-think, or at least articulate in its final order, what informational and/or water quality gains it seeks that the Board's past experience with more omnipresent monitoring has not already ruled out.

Second, the State Water Board should bear in mind that increased monitoring by the coalitions translates into increased fees for Members. The more the coalitions increase the number of surface water monitoring locations and the frequency of sampling, the more Members will find that farming in the Central Valley has ceased to be profitable. The Central Valley Water Board strongly urges the State Water Board to carefully consider the possibility and the implications of coalitions collapsing as fewer and fewer Members are burdened with the cost of an expanded surface water monitoring program that is not significantly better at identifying water quality issues than the current program.

Finally, should the State Water Board nonetheless conclude that the existing surface water quality monitoring program is inadequate, the Central Valley Water Board respectfully requests that the final Order contain much more specific direction regarding how the Board should revise its existing program. The Draft Order recites the general standard articulated in the Agricultural Expert Panel Report, but it does not in fact apply that standard to the existing monitoring program and explain how it falls short. Moreover, directing the Central Valley Water Board in a precedential order to revise its ILRP orders to "do more" creates a significant risk that third parties will challenge the Board's revised monitoring program as failing to comply with a legally binding State Water Board decision.

E. Compliance with the Nonpoint Source Policy

The Central Valley Water Board also wishes to clarify that the East San Joaquin General WDRs' existing surface water monitoring program fully complies with the State Water Board's Nonpoint Source Policy. As already noted, the Nonpoint Source Policy does not specify how the regional boards must structure their monitoring and reporting programs so as to ensure rigorous and timely enforcement of water quality objectives. Rather, that policy only requires a sufficient feedback mechanism to identify whether management practices are in fact achieving anticipated reductions in water quality pollution.[49]

[49] Frawley Order, p. 36, n. 12.

The existing surface water quality monitoring program fully complies with this standard. The program's historical success at both identifying water quality issues and identifying management practices that remedy them demonstrates that it is the "sufficient feedback mechanism" that the Nonpoint Source Policy requires, as demonstrated by the water quality improvements associated with 78 completed management plans. The ILRP management plan completions contributed significantly to the de-listings of diazinon in reaches of the San Joaquin, Feather and Sacramento Rivers from the CWA Section 303d list of impaired waterbodies. Furthermore, Board staff will be pursuing additional de-listings of diazinon, chlorpyrifos and diuron in reaches of the San Joaquin and Sacramento Rivers, the Sacramento/San Joaquin Delta and their tributaries in response to reduced concentrations of those pesticides in the waterways due in large part to the ILRP management plan efforts. Based on 13 years of monitoring results, the current representative strategy identifies water quality issues at Core Sites that will also require Represented Site monitoring. This strategy will result in identification of water quality problems at Represented Sites, as evidenced by existing management plans for many of the same constituents throughout the Coalition area. Persistent wide-spread problems have been identified and addressed under the current strategy. The General WDRs' surface water monitoring strategy is scientifically sound, based on data collected over more than a decade, represents multiple stakeholder and scientific review iterations, and fully complies with the Nonpoint Source Policy.

VIII. Considerations Regarding Transparency, CEQA & Water Code section 13267

A. Transparency and Availability of Individual Data

Since the inception of the ILRP, the Central Valley Water Board has been committed to a transparent regulatory process. This commitment extends to the information that the Central Valley Water Board receives pursuant to the requirements of the existing General WDRs; the primary purpose of the coalitions was never to obfuscate grower information from public scrutiny. Furthermore, the Central Valley Water Board has never shied away from mandating the submittal of any and all information it deems necessary to fulfill its statutory responsibility to protect beneficial uses of waters of the state.

Under the existing General WDRs, the Board does not require that individual farm data be submitted to the Board as a matter of course. Nevertheless, should there be a demonstrated need for any of the raw data maintained by the coalitions to verify or audit Coalition submittals, including individual member data, the Executive Officer has the authority to request such information directly from the coalitions:

> … The Executive Officer will request information, as necessary, from Members and the third-party to audit the quality and accuracy of information being submitted. The Executive Officer will regularly report to the board on the results of any audits of the information reported by the third-party, the outcome of any field verification inspections of information submitted by the Members, and make recommendations regarding changes to the reporting requirements and the information submittal process, if needed.

While this provision is specific to audits, the Board (and the Executive Officer) has broad authority to require the submittal of individual information in support of its regulatory programs, including the ILRP. Should a member of the public demonstrate to the Executive Officer that there is a need for individual information for reasons related to the Board's regulatory activities – the Executive Officer certainly has the discretion to request such information from the coalitions.

What is more, once individual grower information enters the Central Valley Water Board's offices, it will be treated as public record subject to the requirements of the California Public

Records Act (CPRA).[50] The regulatory process outlined in the existing General WDRs neither abrogates nor extinguishes any requirement or exemption provided by California public records law. This means that, to the extent that the records in the Board's offices are subject to disclosure under the CPRA, the Board will promptly make such records available upon request.

B. CEQA Considerations

The Central Valley Water Board conducted an extensive environmental and economic analysis as part of the environmental impact report ("EIR") developed to support the ILRP. This analysis was critical for the Board to arrive at a workable balance that would protect water quality while optimizing ILRP staff time and local resources. From the Central Valley Water Board's perspective, it is unclear whether the newly proposed requirements of the Draft Order, and the statewide environmental and economic impacts that are likely to follow, fall within the scope of the analysis conducted in that EIR. The Central Valley Water Board urges the State Water Board to examine the Board's EIR, including its alternatives analysis, since this EIR proved an invaluable resource for the Board's decision-making process.

The range of alternatives considered in the EIR include scenarios where individual farms would submit data and plans directly to the Central Valley Water Board for analysis, as well as scenarios where all information would go to a coalition for summary reporting. The EIR indicated that there would be significant trade-offs in choosing among these alternatives, which would likely include increased monitoring and reporting costs and the conversion of prime farmland to non-agricultural uses.[51] These trade-offs, while not determinative, certainly informed the Board's evaluation of the available alternatives for regulating an industry that is a way of life for thousands of Central Valley communities.

In considering the alternatives described in the EIR, the Board was required to weigh factors such as:

- Need for the information to protect water quality
- Compliance with the Nonpoint Source and Antidegradation Policies, as well as the Water Code
- Cost of obtaining the information
- Program effectiveness
- Need to leverage local resources
- Board staffing to implement the program
- Need to collect accurate, reliable data

To illustrate one such consideration, the Central Valley Water Board weighed the need for direct nitrogen management plan, farm evaluation, and farm-specific data reporting for each operation versus the reporting and processing costs associated with direct reporting. In considering these factors, the Board found that the least impactful means of developing the information necessary to meet legal mandates and the requirements of existing policies was to require that specific individual data (such as nitrogen applied/yield ratios and farm evaluations) be transmitted to the coalitions and summarized for the Board. This approach leveraged local resources in gathering reliable data, kept costs down, and yet still provided the information needed to monitor compliance and protect water quality.

[50] Gov't. Code § 6250 et seq.

[51] Central Valley Water Board, Irrigated Lands Regulatory Program EIR, Section 6.2.2.8, p. 6-4.

Although the Central Valley Water Board recognizes and respects the State Water Board's prerogative to weigh these trade-offs differently, the Board urges the State Water Board to revisit the EIR and the economic analysis for the ILRP to ensure that the Draft Order is consistent with the analysis provided therein.

C. Water Code Section 13267 Considerations

Before the State Water Board requires field-level reporting to the Central Valley Water Board and increases annual deliverables as described in the Draft Order, it should reconsider whether those reporting requirements are legally supported by Water Code section 13267. Section 13267 provides the legal basis for all required monitoring and reporting under the ILRP. That section provides, in pertinent part:

> The *burden, including costs*, of [required monitoring or technical] reports *shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports*. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.[52]

As already discussed, the Central Valley Water Board does not have nearly enough staff to review annual field-level submissions from growers, and it lacks the budget or the in-house expertise to conduct or contract out for the kind of sophisticated correlative analytics that the Draft Order says justify requiring information at that level of granularity.[53] ILRP staff, in all likelihood, would continue to review information aggregated at the township level as a method of streamlining and managing its workload. The vast majority of field-level submissions would never be reviewed, with limited exceptions when they are needed for targeted audits. In contrast, if the Board's ILRP were allowed to continue its current approach of requiring field-level data only on an as-needed basis, that reporting would, in each case, be directly justified by a specific need and benefit in accordance with section 13267.

At the very least, the Draft Order should not require field-level reporting directly to the Central Valley Water Board until the GeoTracker database has *in fact* been updated, users have received training in how to properly upload field-level information, and any outstanding public records controversies pertaining to this database have been resolved. The Draft Order provides a 3-year delay before field-level data must go to the Central Valley Water Board – via the database or in PDF form – apparently based on the assumption that 3 years will be enough time to roll out the public database. Based on past experience and on the complexity of the issues still to be resolved, the Board is concerned that this ambitious timeline may not be technically or administratively achievable.

IX. Miscellaneous Issues and Requested Revisions

In addition to the foregoing concerns, the Central Valley Water Board also would like to bring the following issues in the Draft Order to the State Water Board's attention, as they bear on the feasibility of implementing the Draft Order's directives:

- ***Timing and Deadlines***. The Draft Order directs the Central Valley Water Board to reopen the General WDRs by **March 1, 2017**, to adopt a revised surface water quality

[52] Cal. Water Code § 13267, subd. (b)(1) (emphasis added).

[53] These obstacles should not distract from the already-discussed fundamental issue with this requirement: that it is technically incapable of providing scientifically defensible correlations between agricultural practices and groundwater quality.

monitoring program consistent with the Draft Order's direction.[54] Given the complexity, technical expertise, and extensive outreach required to create the existing surface water monitoring program, the Central Valley Water Board believes that meeting the Draft Order's deadline is logistically impossible. If the State Water Board determines that such revisions are indeed necessary, the Central Valley Water Board requests that it be allowed a minimum of 5 years to develop and alternative program.

The Draft Order also requires that, by **May 2019**, Central Valley Water Board staff begin using correlated data sets of field-level data to (1) verify Coalition compliance with the Order, (2) evaluate the effectiveness of management practices in reducing nitrogen applications, and (3) develop acceptable multi-year A/R target ratios. Assuming *arguendo* that the State Water Board adopts a Final Order that continues to rely on the A/R metric as a proxy for groundwater protection, complying with these mandates first requires that all relevant data values be uploaded to an updated GeoTracker database. If that database has not yet been updated by May 2019, the Central Valley Water Board would have no feasible way to comply with these State Water Board's directives. The Central Valley Water Board requests that, if these directives remain in the State Water Board's Final Order, they take effect only after the GeoTracker database has in fact been updated such that it can accommodate the necessary data values. The Board also requests that the State Water Board revise the deadlines on page 33 of the Draft Order, which have already passed.

- ***Certification of INMPs***. The Draft Order requires INMPs to be certified for all Members. Although the California Department of Food and Agriculture ("CDFA") provides Certified Crop Advisor training, at this time it is not clear that this training is adequate to encompass the new irrigation component included in the Draft Order. If the training and minimum expertise of Certified Crop Advisors is not adequate with respect to the irrigation component, there is concern that Certified Crop Advisors certifying INMPs could open themselves up to potential liability. Also, the current number of available Certified Crop Advisors with expertise in nitrogen management that includes irrigation practices is too few to adequately serve the number of growers in the Central Valley Region. The Central Valley Water Board requests that the State Water Board allow additional time to confer with CDFA and the coalitions to determine whether changes to Certified Crop Advisor training are necessary, and if so, what those changes might be. The Central Valley Water Board also requests that the definition of "Certified Nitrogen Management Specialist" in Attachment E ("Definitions and Acronyms") be revised to reflect that such specialists' expertise should extend to irrigation practices as they relate to nitrogen management.

- ***Grower Calculation of Nitrogen Removed***. Under the Draft Order, individual fields' A/R calculations are based on the Member's calculation of nitrogen removed. Based on the Central Valley Water Board's experience and familiarity with the grower community, the Board believes that relying on Members for this important information raises a significant possibility of injecting error into the process. Although some growers are technically sophisticated, the majority of the Central Valley Region's farmers are small family farmers without the expertise to properly calculate nitrogen removed. The Central Valley Water Board requests that the Draft Order be revised to maintain the current process of having the coalitions calculate nitrogen removed.

[54] Draft Order, p. 62.

X. Conclusion

The Central Valley Water Board maintains that the ILRP is a robust, effective, and transparent regulatory program that mandates compliance with all applicable regulatory policies on an aggressive, but reasonable, timeline. Rather than the entirely new approach proposed in the Draft Order, the Central Valley Water Board believes that, to the extent that the policy goals of the State Water Board are not coextensive with those of the Central Valley Water Board, it would only take minor changes to the existing General WDRs to effectuate those goals.

Where the State Water Board believes that the existing General WDRs could better explain how the existing regulatory process, audits, and feedback mechanisms will be implemented and linked, the Central Valley Water Board is more than willing to integrate such explanations into the existing General WDRs. Where the State Water Board believes that the MPEP or other data collection and reporting requirements in the existing General WDRs are insufficient to meet regulatory and legal requirements, the Central Valley Water Board can reconvene its stakeholder process to develop modified reporting requirements to increase transparency and accountability, perhaps by developing more robust auditing and data management procedures. And where State Water Board believes that the ILRP is inadequate to meet the state's long-term policy goals, including rectifying the plethora of water quality problems faced by disadvantaged communities within the Central Valley, the Central Valley Water Board is up to the challenge of partnering not only with the agricultural community, but with all dischargers, NGOs, local communities, and other governmental entities to redouble its efforts to address the full spectrum of water quality challenges faced by the Valley's communities. However, we respectfully urge you not to implement these changes in a manner that would be destructive to the significant and substantial progress that the Central Valley Water Board has made in regulating the Valley's agricultural community under the existing General WDRs.

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Attachment to Central Valley Water Board Comments on SWRCB/OCC FILES A-2239 (a)-(c)

Chronology of revisions adopted by the Central Valley Water Board to the ESJ Coalition General Order (R5-2012-0116):

- Provided a 1-year extension for preparation of Nitrogen Management Plans and Summary Reports. (3 October 2013).
- Modified the reporting requirement to allow the third-party to aggregate individual data records along with the summary of nitrogen reports by township. (3 October 2013)
- Added language to clarify individual data records used to prepare the annual summary of management practices. (3 October 2013)
- Required quality assessment to the nitrogen management and management practice information collected from Members. (3 October 2013)
- Added background information to describe the approach for implementing and enforcing the Order. (3 October 2013)
- Clarified discussion of reports and plans to allow any interested person to request the Board to review decisions or approvals made by the Executive Officer. (3 October 2013)
- A number of sections were edited for clarity and ease of reading without making significant changes to the substance of the General Order. (3 October 2013)
- Provided a 2-month extension for submittal of the first Farm Evaluations and summary of management practices collected as part of Farm Evaluations.(27 March 2014)
- Allowed additional time for the third-party to submit the Comprehensive Groundwater Quality Management Plan.(17 April 2015)
- Changed the northern boundary of the East San Joaquin Water Quality Coalition (Coalition) from the Stanislaus River Watershed to Stanislaus River. (17 April 2015)
- Provided a 1-year extension for certification of Nitrogen Management Plans in high vulnerability areas. (17 April 2015)
- Clarified expectations for grower implementation of Nitrogen Management Plans. (17 April 2015)
- Added language to the Monitoring and Reporting Program providing the third-party an opportunity to participate in an Executive Officer approved Regional Monitoring Program. (17 April 2015)
- Allowed Growers to comply with the annual outreach requirement by having a designated representative participate in outreach events. (2 October 2015).
- Allowed the use of a Managed Wetland Evaluation Template. (19 February 2016)*
- Removed requirements for managed wetlands and irrigated pastures that do not use fertilizers to develop Nitrogen Management Plans and Nitrogen Management Plan Summary Reports. (19 February 2016)
- Removed requirement for managed wetlands to develop Sediment and Erosion Control Plans. (19 February 2016)

*Revisions in red were not included in the Draft Order

The following are clarifications of the ESJ Coalition General Order (R5-2012-0116).

Requirements for coalitions to provide A/R

Requirement for growers to include nitrogen removed in their Nitrogen Management Plan (NMP) was incorporated in the NMP template, issued by the Executive Officer on 23 December 2014. The NMP template was publicly noticed and discussed during the 4 December 2014 Central Valley Water Board Meeting.

Requirement for coalitions to include A/R in their reporting of nitrogen management data was discussed during the 11 December 2015 Central Valley Water Board Meeting during the item regarding the NMP Summary Report template. The NMP Summary Report template, issued by the Executive Officer on 23 December 2015, requires growers submit to the coalitions, the following information for each crop: total acres, total nitrogen applied, total nitrogen and nitrogen applied/actual yield. The coalition would provide the nitrogen removed to the growers and the A/R information to the Central Valley Water Board.

Requirement to monitor for pyrethroid pesticides and Hyalella azteca toxicity in sediment

Pyrethoid pesticides are required to be monitored in accordance with the Eastern San Joaquin Watershed Monitoring and Reporting Program (MRP) Order Table 2. *Hyalella azteca* is required to be monitored in accordance with section 3.C.4.b of the MRP Order.