

To:

State Water Resources Control Board

Office of Chief Counsel

Jeanette L. Bashaw, Legal Analyst

1001 "I" Street, 22nd Floor

P O Box 100

Sacramento, CA 95812-0100

Date: August 26, 2012



Petition Under California Water Code Section 13320 for Review of the State Water Resources Control Board of Various Actions and Failures to Act by the Central Valley Regional Water Quality Control Board Regarding Sweeney Dairy and Administrative Civil Liability Complaint No. R5-2012-0542.

A. Introduction.

We are James G. Sweeney and Amelia M. Sweeney, doing business as Sweeney Dairy, and are the "Dischargers" named under the Central Valley Regional Water Quality Control Board's Administrative Civil Liability Complaint R5-2012-00542 (Complaint). Our address is 30712 Road 170, Visalia, CA 93292. Our telephone number is (559) 280-8233 and our email address is japlus3@aol.com.

Pursuant to Section 13320 of the California Water Code, we hereby appeal to the State Water Resources Control Board (State Board) regarding the following decisions, actions, and failures to act by the Central Valley Regional Water Quality Control Board (Regional Board) and petition the State Board to review the same and to grant us the relief we hereinafter request.

B. Statement of Facts.

1. We operate a small dairy at 30712 Road 170, Visalia, CA. We milk around 300 cows on a site where a dairy has continuously been conducted for over eighty years.
2. The Regional Board's Order No. R5-2007-0035 (2007 Order) compelled us, along with all other dairymen, to prepare and file all of the following reports with the Regional Board by July 1, 2009. The Regional Board amended the 2007 Order in 2009 with Order

No. R5-2009-0029 (2009 Order) in which the filing date for these reports was extended for one year, to July 1, 2010. The 2009 Order cited financial distress in the dairy industry as the justification for the extension. The 2009 Annual Report, due on July 1, 2010, consisted of an Annual Dairy Facility Assessment for 2009, and a Waste Management Plan (WMP), which consisted of the following reports:

- (a) Retrofitting Plan for needed improvement to storage capacity, flood protection or design of the production area.
- (b) Dairy site and Cropland maps.
- (c) Wastewater lagoon capacity evaluation.
- (d) Flood protection evaluation.
- (e) Dairy and cropland design and construction evaluation.
- (f) Cross-connection assessment report.

The 2010 Annual Report, due on July 1, 2011, consisted of the following reports:

- (a) Nutrient Monitoring Element:
 - (1) Waste Water, amounts and test results
 - (2) Manure, amounts and test results
 - (3) Crop, amounts and test results
- (b) Groundwater Monitoring Element (domestic and ag wells), test results.
- (c) Certification of Nutrient Monitoring Program "retrofitting."
- (d) Certification of storage capacity "retrofitting."
- (e) Certification of flood protection "retrofitting."
- (f) Certification of housing and manure storage area "retrofitting."

The 2007 Order required most of the 2009 and 2010 reports, technical and otherwise, to be prepared by licensed professionals/engineers and consultants, with all of the sample testing to be done by licensed laboratories, all of which are very expensive.

- 3. During 2008 and 2009, the dairy industry suffered through a dreadful period due to a combination of low milk prices and high feed costs that were unprecedented in recent memory. Virtually all dairies, large and small, had to borrow substantially in order to remain in business. It was a period from which most dairymen have not yet financially recovered. Indeed, the Regional Board's 2009 Order (R5-2009-0029) acknowledged the seriousness of the situation, and recited that "CARES points out that the cost of the report can be as high as \$30,000.00 per facility." As a result, the Order postponed for a year the filing of these reports. In this manner, the Board accepted the notion not only that these reports were very expensive, but that their costliness was a justifiable reason for postponement of the filing of the reports. (Exhibit 1)
- 4. This year, the dairy industry has returned to a period of low milk prices and high feed and energy costs. For most, there is insufficient revenue to pay all bills, and because of seriously depleted equity, lenders are unwilling to loan additional funds to most dairies to make up the shortfall. In many cases, we are buying feed for our cows, but are unable to pay the farmers supplying us.

5. Environmental groups have often been critical of large dairies, referring to them as “mega dairies” and “factory farms.” Larger dairies discharge larger volumes of waste and generally pose a greater potential threat to our groundwater. Yet, in adopting the 2007 Order, the Regional Board imposed very costly monitoring and reporting requirements that are pretty much the same for all dairies, regardless of size. Because smaller dairies have fewer cows over which to spread these fixed regulatory costs, it is much more burdensome, and puts them at an even greater competitive disadvantage. In some cases it is fatal, and we know of a number of small dairies who told us that they sold out because they could not afford the costs of complying with the new reporting requirements imposed by the 2007 Order.
6. The Regional Board’s staff supplied us with data (broken down by herd size) that show the number of dairies that filed reports in the Fresno Office in 2010, as compared to 2007. While there was less than a 1% decline in the number of large dairies (over 700 cows) filing reports between 2007 and 2010, there were 36% fewer medium sized dairies (between 400 and 700 cows), and 46% fewer small dairies (less than 400 cows) that filed reports in 2010 than did in 2007. So the evidence is not just anecdotal; it shows that the smaller dairies that were disappearing in much larger measure during this financially stressful period. While the Regional Board staff likes to claim that 95% of the smaller dairies filed the 2010 reports, they suppress the inconvenient truth that almost half of those filing in 2007 had gone out of business by 2010. There should be no dispute that the Regional Board’s costly reporting requirements as set forth in the 2007 Order are a contributing reason why large dairies are growing even larger, and are taking over the production lost by the small dairies going out of business.
7. As a result of the financial situation in which we found ourselves in 2009 and 2010, we wrote a letter dated March 28, 2010 to the Regional Board’s staff – more than three months before the July 1, 2010 filing deadline - in which we asked for a waiver from submitting these reports. (Exhibit 2) We wrote a follow-up letter dated April 7, 2010 to the Regional Board staff in which we requested a one-year suspension of filing the reports. (Exhibit 3) Anticipating that the staff would refuse to grant said relief, we stated in both of these letters that if the staff was unable to grant our request, to please schedule the matter for a face-to-face hearing before the Regional Board at a future meeting so that we could present our request for relief to the Board.
8. The Regional Board’s staff replied to our March 28 and April 7 letters by a letter dated June 15, 2010, in which they did not agree to our request to a one-year suspension, and they did not schedule a hearing before the Regional Board as we had asked. Instead, they advised us that we could address the Board during the “Public Forum” section of their agenda. Such presentations are limited to three (3) minutes. (Exhibit 4)
9. Concluding that three minutes were completely inadequate to present all of our evidence and arguments, we again asked the staff in a letter dated June 27, 2010 to schedule a full hearing before the Regional Board, and it was ignored. (Exhibit 5)

10. On August 20, 2010, we received a Notice of Violation dated August 16, 2010 from the Regional Board staff charging us with failing to file the July 1, 2010 reports.
11. In a letter to the Regional Board's staff dated August 22, 2010 we again mentioned our request for a hearing before the Regional Board. (Exhibit 6) Again, the staff continued to ignore our request. We later found out why. At the July 14, 2011 hearing before the Hearing Panel, Mayumi Okamoto, one of the Regional Board's legal counsel, stated that "the decision to place a matter on the agenda remains with the discretion of your [Regional Board's] management in consultation with the Executive Officer as the *gatekeeper*." (Exhibit 7) Regional Board staff member, Clay Rodgers, also testified that "Mr. Sweeney did approach us to ask for an extension. We decided that an extension, as the *gatekeepers* to the Board, that the extension of the Waste Management Plan had already been granted. ... And we did not feel that the extension of the annual report would be appropriate." (Exhibit 8)

While the Regional Board may delegate some of its powers and duties, some cannot be delegated. Section 13223 (a) of the California Water Code provides that modification of any waste discharge requirement is one of those powers and duties that cannot be delegated. It is the Regional Board's exclusive duty and responsibility to hear and decide upon our request for a modification of the waste discharge requirements contained in the 2007 Order. Since Section 13223 (a) grants only the Regional Board the authority to make such determinations, Ms. Okamoto and Mr. Rodgers both admitted that the staff operated outside their legal authority.

12. On May 10, 2011 an Administrative Civil Liability Complaint, R5-2011-0562, (2011 Complaint) was served on us for failing to file the July 1, 2010 reports. It sought civil penalties against us in the amount of \$11,400.00. Oddly, the Complaint prejudicially failed to mention our multiple efforts to schedule a hearing before the Regional Board to seek relief.
13. On July 1, 2011, the 2010 Annual Reports became due, but we did not file them as we were still seeking a hearing before the Regional Board to obtain relief from having to file them.
14. On September 21, 2011, we emailed Alex Mayer, one of the Regional Board's legal counsel, wherein we again asked that a hearing be scheduled before the Regional Board where we could ask the Board for a modification of the reporting requirements of the 2007 Order. (Exhibit 9)
15. We were advised by Mr. Mayer's email dated September 29, 2011 that he had no authority to schedule the hearing we requested before the Board, but that we could appear before the Board as "a member of the public" and would be allowed only three minutes to speak during their "public forum" section of their agenda. (Exhibit 10)
16. On October 2, 2011, eleven days before the Regional Board's October 13, 2011 hearing, we submitted our written testimony and all of our arguments to the Regional Board by

sending it to its counsel, Mr. Mayer. This thirteen-page document included another written request for a hearing before the Regional Board where we could request a modification of the reporting requirements. The document included a great deal of evidence and all of our arguments opposing the ACL Complaint and supporting our request. (Exhibit 11)

17. On October 13, 2011, we appeared at the hearing before the Regional Board on the 2011 Complaint. As shown by the transcript of the hearing, Mr. Mayer mentioned our October 2 document, but recommended that it not be accepted into the record. Chair Hart, without asking for our response, immediately ruled that it would not be accepted. She then informed us that we would only be given five minutes and that I was limited to testifying only about the dairy herd size data (not a particularly significant issue). (Exhibit 12) I began reading a two-page presentation, beginning with an introduction. One minute into the presentation, just as I was beginning to request a specific hearing for a modification of the 2007 Order's reporting requirements, Board legal counsel Okamoto interrupted me and objected to what I was beginning to request. Chair Hart responded by telling me the following untrue statement: "We are fully advised what your position is." Chair Hart then ordered me to limit my comments to just the herd size data. (Exhibit 13) I began commenting on the herd size data. However, the hearing transcript shows how, during that time, the Chair, Mr. Landau and both legal counsel interrupted me, debated the herd size issue, and ended up taking up much of my five minutes. Then Chair Hart stopped me and said "Thank you Mr. Sweeney and your time is up." The Regional Board then went ahead and moved, seconded and voted to adopt the proposed order for civil liability against us in the amount of \$11,400.00.
18. We were sent an email on October 25, 2011 by Ken Landau, Assistant Executive Officer of the Regional Board, in which he listed the documents that had been "made available to the Board members for their consideration at the 13 October hearing." (Exhibit 14) Although I had expected my October 2 written testimony/argument document to have been given to the Regional Board members to read before the hearing, Mr. Landau's email revealed that our October 2 document was not on the list of documents given to the Board, confirming that its counsel and staff had withheld it from them. Therefore, the record is clear that our request and the supporting reasons for a modification hearing was neither read, nor considered, nor acted upon by the Regional Board as part of the action it took against us at the October 13 hearing.
19. On November 9, 2011, we appealed all of the Regional Board's decisions at its October 13, 2011 hearing by filing a Petition with the State Water Resources Control Board (A-2190). Said petition/appeal is still pending decision before the State Board.
20. On May 9, 2012 an Administrative Civil Liability Complaint, R5-2012-0542 (2012 Complaint), was mailed to us for failing to file the reports due on July 1, 2011. The Complaint sought civil penalties against us in the amount of \$7,650.00. The Complaint failed to mention our efforts to secure a hearing before the Regional Board to obtain relief from these reporting requirements. It also failed to note that the Regional Board did

not act on our request for such a hearing, and that this failure to act is currently under appeal by us to the State Water Board.

21. The Regional Board held their hearing on the 2012 Complaint on August 2, 2012, and it voted to adopt Order no. R5-2012-0070, imposing an administrative civil liability penalty of \$7,650.00 on us for failing to file the Annual Reports due July 1, 2011. (Exhibit 15)

C. Legal Arguments and Analysis.

We presented and tried to present all of the hereinafter issues, testimony, evidence and arguments to the Regional Board at the August 2, 2012 hearing.

1. We were deprived of due process and a fair hearing at the August 2, 2012 hearing before the Regional Board.

Having been informed that we would be limited to 30 minutes to testify during the August 2 hearing, and knowing that our evidence and arguments were too detailed and extensive to fully present within 30 minutes, we prepared a 16-page document (plus attached exhibits) dated July 20, 2012 and entitled "Written Testimony." On July 20, (twelve days before the hearing) we mailed nine copies of the "Written Testimony" to the Advisory Team counsel, Alex Mayer, and three copies to the Prosecution Team counsel, Ellen Howard. The document contained the following instructions: "We are sending enough extra copies to be delivered by you to each Regional Board member. Please get it to them sufficiently ahead of time so that they may read it before hand. And we ask that a copy also be introduced into the record of this proceeding." [This July 20 "Written Testimony," is appended last as Exhibit 30. Because of its length, we have left off its exhibits. When the State Board is ready to consider this appeal, please inform us and we will deliver a version of this July 20 document with all exhibits attached.]

At the August 2 hearing I asked Chair Longley if every board member had received a copy of the July 20 Written Testimony. Board member Hart immediately interjected with "Each member of this board has read their agenda packet and their submittals." Chair Longley added, "And I have, too. But I don't think it's appropriate for you to be examining this Board. Would you go on with your testimony." Unsure whether the board had been given my July 20 Written Testimony, and confronted by an irritated Chair who seemed more interested in chastising me than clarifying the situation, I then said "I'd like to present this [meaning my July 20 Written Testimony] just to make sure it gets into the record." As I stepped forward to give a copy to the Board clerk, Counsel Mayer said "We already have that in the record." (Exhibit 16, Hearing Transcript [HT] 32-33) Relying on Mr. Mayer's representation, and led to believe that the board had been given the document, I brought my presentation to a close.

We have since looked at the Regional Board's website. Under "Agenda Items" for the August 2 board hearing, all of the documents in the record for our matter are listed. However, our July 20 Written Testimony document was not listed. (Exhibit 17) The

evidence, therefore, is that Attorney Mayer did not give copies of our July 20 document to the board members before the hearing, and despite his false representation to the contrary, he had not submitted it to be made part of the record. Hence, when the board voted to adopt the civil liability order against us, they did so without being fully informed of our evidence and arguments. Because of the suppression of this testimony, evidence and arguments, and because both the board and we were grievously misled, we were deprived of due process and denied a fair hearing. Indeed, the entire proceeding was a shameful and repugnant travesty.

Water Code section 13292 requires the State Board to ensure that the adjudicative proceedings held by the regional board are fair and provide fair access to participants. Since Attorney Mayer is an employee of the State Board, it is clearly the State Board's responsibility and duty to examine his conduct in this matter and take whatever action is appropriate.

2. **The 2012 Administrative Civil Liability Complaint (R5-2012-0542) is legally defective because it is premature and is the result of us being deprived of due process.**
 - (a) The 2007 Order declares that it "serves as general waste discharge requirements of waste from existing milk cow dairies ... of all sizes." (2007 Order, p.1) The Order describes the procedures where a Discharger makes a request for a modification of the Order or of any of its general waste discharge requirements. (2007 Order, SPRR-2) The reporting requirements, including the filing deadlines for annual and technical reports, are part of the Order's general waste discharge requirements for which someone like us may seek modification, exemption or other similar relief.
 - (b) Addressing waste discharge requirements, Section 13263 (e) provides that "(e) Upon application by any affected person, or on its own motion, the regional board may review and revise requirements ..." Therefore, we, as affected persons, have the right to apply to the Regional Board for a *modification* or *revision* of the general waste discharge requirements, including the reporting requirements contained in the 2007 Order.
 - (c) Section 13269 (a) (1) and (2) of the Water Code goes on to say that a regional board may *wave* waste discharge requirements (dealt with in section 13263) as they apply to the performance of an individual, such as ourselves.
 - (d) Section 13223 (a) of the Water Code specifies that the regional board may not delegate modification of waste discharge requirements. It is the regional board's exclusive duty and responsibility to hear and decide our request for relief from these waste discharge requirements. The staff cannot appoint itself as the "gatekeepers" in these matters, and the board is prohibited under section 13223 (a) and other applicable law to appoint the staff as "gatekeepers." This is why it is curious that the Prosecution's counsel so readily admitted in her rebuttal statement that the Regional

Board's staff and Executive Officer can act as "the gatekeepers" in matters concerning requests for modification of waste discharge requirements.

We have a right to appear before the Regional Board to ask for a modification or waiver from any of the Order's WDRs. Even a decision to not grant us a hearing on our request for relief would have to be made by the Regional Board - not by its staff, or by its Chair alone.

- (e) Had the Regional Board granted us a full hearing prior to the issuance of the 2012 Complaint, as we had requested over and over, there is the possibility that the Board would have granted us relief from some or all of those reporting requirements, including the July 1, 2011 deadline, in which case, we would not be in violation of the reporting requirements. The Regional Board cannot contend that we have violated the 2007 Order's reporting requirements due on July 1, 2011 until such time as the Regional Board has heard and denied such a request and after we have exhausted our appeal and all other legal remedies afforded us under the Water Code. (Water Code Sections 13320, 13325, and 13330) Thus, the filing and serving of the 2012 Complaint is premature.
- (f) During my oral presentation at the August 2 hearing, I asked the Board if it would grant us a hearing in the future wherein we could fully present all of our evidence and arguments in support of modifying the 2007 Order's reporting requirements as it applied to us. (Exhibit 16, HT-29) Without giving me an opportunity to further explain why the granting of such a hearing would be justified, and without discussing it with the other board members, or having the board vote on it, Chair Longley simply declared "My answer to that would be no," and then he moved on. (Exhibit 16, HT-29)

In preventing us from presenting our evidence and arguments for the appropriateness of giving us such a hearing in the future, and in not allowing the Board members to participate and vote on the issue, the Chair issued a unilateral, arbitrary and capricious edict, one that clearly violated Water Code section 13223 (a) and deprived us of due process.

3. Order R5-2007-0035 is unlawful and unenforceable against us because it fails to comply with applicable law, including provisions of the Water Code and Government Code.

(a) **The need for the 2007 Order is not supported by substantial evidence.** No rule or regulation of a state agency is valid and enforceable unless the administrative record shows that it is supported by substantial evidence. We have reviewed all 34,000 pages of the administrative record of the hearings held in connection with the adoption of the 2007 Order, and we found no substantial evidence – in fact, no evidence whatsoever – that supports the need to replace the former reporting requirements with the new reporting requirements adopted in the 2007 Order. We have encountered no evidence in the record that the data, reports and information that

the Regional Board staff obtained from or about dairies prior to the 2007 Order were inadequate, insufficient, unreliable or otherwise flawed. And we have encountered no evidence or testimony in the record that claimed or demonstrated that the new reporting requirements were necessary or needed to replace the former.

We made the argument in our June 19, 2012 Evidence and Policy Statement that the need for the 2007 Order reporting requirements were not supported by substantial evidence. This argument went unchallenged; the Regional Board's Prosecution Team entirely failed to dispute or rebut it.

(b) The Regional Board has not shown the need for the reports specified in the 2007 Order and has not justified their burden. The "Monitoring and Reporting Program" of the 2007 Order recites that it is issued pursuant to Water Code Section 13267. (2007 Order, p. MRP-1) Section 13267 (b) (1) states that "the regional board may require that any person who ... discharges ... waste within its region ... shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires."

But Section 13267 (b) (1) goes on to say that "The burden, including costs, of the reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring these 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."

The Regional Board has failed to comply with Section 13267 in that the 2007 Order does not contain "a written explanation with regard for the need for the reports," and it fails to "identify the evidence that supports requiring [us] to provide the reports." In addition, the Regional Board never provided us with "a written explanation with regard for the need for the reports," and it did not "identify the evidence that supports requiring [us] to provide the reports."

Over the years, the Regional Board's staff visited our dairy site to inspect and obtain information about it. For example, staff member Ken Jones visited our dairy in 2003 and spent one day gathering information. He measured and calculated the storage capacity of our three waste water lagoons and concluded that our storage capacity exceeded what the Regional Board required. In fact, it was 128% of what was required. He also concluded that we had sufficient cropland for application of waste water. We have his letter dated April 17, 2003, confirming that our dairy was in full compliance with all Regional Board requirements. (Exhibit 18) We are prepared to submit evidence that our dairy has essentially the same number of animals, the same lagoon capacity and even more cropland now than we had in 2003.

The 2007 Order, at page MRP-7, orders dairymen to "sample each domestic and agricultural supply well," and to submit the laboratory analysis for nitrate-nitrogen to

it on an annual basis. In 2003, 2007 and 2010, we submitted to the Regional Board staff test results from water samples taken from our supply wells:

Our 2003 groundwater supply well test results:

| | | |
|--------------------|---------------|----------|
| Irrigation Well #1 | Nitrate (NO3) | 2.0 mg/L |
| Domestic Well | “ “ | 3.2 mg/L |

Our 2007 groundwater supply well test results:

| | | |
|--------------------|---------------|----------|
| Irrigation Well #1 | Nitrate (NO3) | 1.1 mg/L |
| Irrigation Well #2 | “ “ | 1.2 mg/L |
| Domestic Well | “ “ | 3.2 mg/L |

Our 2010 groundwater supply well test results:

| | | |
|--------------------|---------------|----------|
| Irrigation Well #1 | Nitrate (NO3) | 1.1 mg/L |
| Irrigation Well #2 | “ “ | .2 mg/L |
| Domestic Well | “ “ | 1.4 mg/L |

As stated earlier, a dairy has continuously operated on our site for over eighty years, but as can be seen above, these supply well test results have ranged between .2 and 3.2 mg/L. They are all incredibly low levels, well below the state's maximum contaminant level (MCL) of 10.0 mg/L.

We have argued to the Regional Board staff that the above test results are compelling evidence that our operation was and is not adversely impacting ground water, and therefore the cost of filing these reports due July 1, 2011 did not and do not, in the words of Section 13267, “bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.” But the Regional Board recently brushed off these results by telling us in a letter dated May 23, 2012 that “Groundwater supply wells are typically screened in deeper aquifer zones ... groundwater quality data collected from the Dairy's on-site supply wells do not necessarily represent the quality of first encountered groundwater beneath the Dairy.”

The Regional Board has the audacity to tell us this after demanding for years that we test our supply wells and send them these costly results. And now they tell us that they are meaningless. Absolutely outrageous!

It is actually worse than that. The Regional Board has recently been advising dairymen, including us, that as an alternative we can join a “Representative Monitoring Program,” (RMP) and the results from RMP monitoring wells can be submitted and will be treated as satisfying the monitoring well requirement. (Exhibit 19) I then asked the Regional Board staff what RMP they would accept for my dairy. Clay Rodgers responded with an email dated May 27, 2012 in which he informed me that I could join the Central Valley Dairy Representative Monitoring Program (CVDRMP) administered by CARES in Sacramento. (Exhibit 20) I checked with CARES and was advised by email dated May 29, 2012 that it would accept my

application to join the program. (Exhibit 21) I also discovered that the nearest CVDRMP monitoring wells are many, many miles away from my dairy. After being admonished by the Regional Board staff that my supply well test results “do not necessarily represent the quality of first encountered groundwater beneath the Dairy,” they then tell me they will accept the results from monitoring wells that are miles and miles away from my dairy as meaningful information! This is insanity of the highest level. One cannot imagine a more egregious example of the worthlessness of the reports that the 2007 Order and the staff require.

In conclusion, the reports due on July 1, 2011 were, for the most part, redundant, duplicative, unneeded, unjustified and added nothing useful or valuable, besides being terribly costly. In this regard, the Regional Board’s refusal to accept already available information in its files ignores Section 13267’s requirement that the reports should “bear a reasonable relationship to the need for the reports.”

(c) The 2007 Order fails to implement the most modern and meaningful scientific findings and technologies. Section 13263 (e) of the Water Code provides that “any affected person may apply to the regional board to review and revise its waste discharge requirements. All requirements shall be reviewed periodically.” If new and more cost effective ways can accomplish the same purpose, we contend that the above section imposes on the Regional Board a legal duty to review such issues and revise its requirements accordingly. New and old research and advanced technologies presently exist which may provide less expensive means for evaluating groundwater contamination risk, of determining non-contamination of groundwater, and of using less expensive practices that can still prevent such contamination.

For example, Lawrence Livermore National Laboratory published two papers in 2007 in *Environmental Science Technology*, (2007) 41, 753-765, (Exhibits 22 and 23) in which they stated that they discovered that soil bacteria break down and eliminate nitrates in dairy waste water in a substantial if not complete degree. They have also ascertained that there are certain compounds and gasses in manure water that can be used to determine whether water from dairy lagoons or from waste applied in irrigation water has infiltrated into first encountered groundwater. There are also simple and inexpensive ways to show the amount of highly compacted clay layers sitting beneath a dairy site and whether they constitute an impervious barrier between the dairy and the groundwater. Yet, the 2007 Order contains a “one-size-fits-all” approach, and generally requires reports that provide little to no meaningful information. Indeed, some of these reports are ludicrous and unnecessary. One example is that we are required to provide monthly photos of our lagoons to show that the water level was not too high during the month. This is as absurd as requiring us to photograph our speedometer to prove we didn’t drive over the speed limit during the month.

In short, most of the Order’s reporting requirements are primitive, antiquated, obsolete, and provide nothing of real value, except for lining the pockets of engineers, consultants and laboratories. The Regional Board has not continued to sufficiently

examine and consider recent research results and advanced testing technologies, and it has not modified its Order accordingly.

We made this argument in our June 19, 2012 Evidence and Policy Statement that the 2007 Order fails to implement the most modern and meaningful findings and technology, and the Prosecution Team has entirely failed to dispute or rebut it.

- (d) **The 2007 Order fails to take into account economic considerations.** Small dairies are under much greater economic stress than larger, more efficient dairies and, therefore, are less able to handle the high costs of complying with the 2007 Order's reporting requirements. The 2007 Order's waste discharge requirements as they relate to water quality objectives must take into account economic considerations. (Water Code Sections 13241 and 13263) The 2007 Order does not do so. It specifically fails to set or implement water quality objectives that are within the economic means of smaller dairies – operations that have to deal with disproportionately higher per cow reporting costs. Indeed, the Order fails to address the special economic circumstances of smaller dairies in any way whatsoever.

The administrative record (AR) of the 2007 Order consists of 34,000 pages of documents and testimony. A great deal of testimony was presented concerning how expensive the new reporting requirements would be, and how especially unbearable it would be for smaller dairies:

(1) Ms Asgill, an agricultural economist, testified that because of these regulations, “we are probably looking at the smaller dairies going under. Probably those dairies that we [are] usually fond of protecting – dairies under 500 milking cows - will be going out.” (AR 000444)

(2) A letter from the State Department of Food and Agriculture Board mentioned that Governor Schwarzenegger “made a commitment to reject new regulations that unfairly impact small business. ... It is expected that new and existing regulations will be reviewed for economic impact to small business. ... we encourage the RWQCB to review your proposal ... propose alternatives that are less burdensome.” (AR 007297)

(3) The Federal government presented input: The EPA's Small Business Advocacy Panel submitted its recommendation to streamline the reporting requirements and that operations under 1000 animal units should be exempted from certain requirements. (AR 02397)

(4) The State Water Board expressed concern in its submission during the hearings that the proposed requirements “may have significant adverse economic impact on small business.” The State Board went on to recommend “different compliance or reporting requirements ... which would take into account the resources available to small business ... [and] exemption or partial exemption from regulatory requirements for small business.” (AR 019632)

(5) Even Regional Board member Dr. Longley expressed concern: “Whereas larger dairies, a 10,000 cow dairy, would be able to absorb the costs, a 100 cow dairy is going to be faced with possible disaster.” (AR 002163)

(6) In response to a written question submitted by Baywatch, Sierra Club, California Sportfishing Protection Alliance and Waterkeeper Alliance, the Regional Board staff gave them assurances that “the Board has the option of limiting the application of this order based on the *size of herd*,” and that “waste discharge requirements or a *waiver* of waste discharge requirements would be adopted for facilities that are not covered by the order.” (AR 000583)

(7) No economic analysis or evidence was presented into the record that disputed the testimony that the proposed 2007 Order would be harmful, even fatal, to smaller dairies.

As mentioned earlier, CARES of Sacramento estimated that the costs of these reports could be as high as \$30,000.00 per facility. The Regional Board incorporated this comment in its 2009 Order as part of its justification for postponing the filing of these expensive reports.

As another example of how the 2007 Order adversely affects smaller dairies, CARES of Sacramento has also estimated that the average cost for a dairy to install their own individual monitoring well system would be \$42,000.00, and thousands of dollars each year thereafter for ongoing sampling, testing and reporting. The cost of monitoring well programs, both the installation and the periodic reporting costs, are for the most part the same for large dairies as they are for small dairies. (Exhibit 24)

We requested data from the Regional Board staff that would reveal the report filing compliance rate of dairies, broken down by herd size. In response to our request, Jorge Baca, from the CVRWQCB, provided us with data concerning the dairies dealt with by its Fresno office. But the compliance rate is not what is most meaningful in this data. Rather it is the rate of loss of dairies, by herd size, since the adoption of the 2007 Order. This data shows the following with respect to the dairies that provided reports to the Fresno office:

| <u>Herd Size</u> | <u>2007</u> | <u>2010</u> | <u>Attrition</u> |
|--------------------|-------------|-------------|-----------------------------|
| Less than 400 cows | 56 | 30 | -26 = 46% attrition |
| 400 to 700 cows | 92 | 62 | -30 = 32% attrition |
| Over 700 cows | 485 | 455 | -30 = .6% attrition |
| Total | 633 | 547 | -86 = 13% overall attrition |

In other words, only about half the number of smaller dairies filed reports in 2010 as compared to the number of smaller dairies that filed reports in 2007.

Prosecution's counsel claims on page 5 of her rebuttal statement that "In 2007 evidence existed to show that small dairies pose a threat to water quality." Yet, she does not state what that evidence was or where it appeared in the administrative record of the 2007 Order.

Not only have we shown that small dairies are less able to deal with the high regulatory costs, we can also show that they pose a dramatically smaller threat to the groundwater. The above numbers roughly show that the number of cows in 2007 in dairies under 400 cows represented only about 3/10 of 1% (.3%) of all cows in the region. Since then, California DHIA data now shows that DHIA dairies in the San Joaquin Valley of our size or smaller represent less than 1/10 of 1% (.09%) of all DHIA cows in the San Joaquin Valley. (Exhibit 25) This means that only one out of every 1000 cows is located in a smaller dairy.

Other agencies recognize these facts. Both the North Coast Regional Water Quality Control Board and the San Francisco Bay Regional Water Quality Control Board have recognized how smaller dairies have a much smaller impact on groundwater, and how they are less able to bear the same regulatory expenses and burdens that larger dairies can. These Regional Boards saw fit to adopt special performance and reporting relief for dairies under 700 cows (See Orders R1-2012-003 and R2-2003-0094, respectively).

In the case of the North Coast Region's Order R1-2012-0003, it declares that "this Order applies to dairies that pose a low or insignificant risk to surface water or groundwater." The Order goes on to say that "economics were considered, *as required by law*, during the development of these objectives," and "that a waiver of WDRs [waste discharge requirements] for a specific type of discharge is in the public best interest."

In the case of the San Francisco Bay Region, it requires smaller dairies to complete and file a two-page "Reporting Form" which does not require the involvement of expensive engineers. (Exhibit 26)

It should also be noted that the SJ Valley Air Pollution Control District exempts smaller dairies from many of its requirements.

Despite the foregoing, the CVRWQCB refused to adopt any waivers, or make any special provisions for, or grant any reporting relief, to smaller dairies, and none appear in its 2007 Order. In conclusion, its refusal/failure to do so violates sections 13241 and 13263 (a) of the Water Code. Moreover, it puts smaller dairies in the Central Valley region at a greater competitive disadvantage with larger dairies in the Central Valley, and at a competitive disadvantage with small dairies in the North Coast and San Francisco Bay regions.

We made all of these arguments in our June 19, 2012 Evidence and Policy Statement that the 2007 Order fails to take into account economic considerations, and the Regional Board's Prosecution Team has failed to rebut it.

Prosecution's counsel tries to create the false impression that the Regional Board has recently taken steps to make reporting less costly for dairymen. She argues on page 2 of her rebuttal that the Regional Board has taken steps to let dairymen "self-report" wherever possible. What she does not disclose is that a great deal of "self-reporting," as she describes it, was required before the adoption of the 2007 Order, and some of it continues under the Order. But it seems to have escaped her that it was the Waste Management Plan reports due by July 1, 2010 and the retrofitting reports due by July 1, 2011 that we had the problem with. Many of these reports had to be prepared and certified by licensed engineers at a cost we estimate to be over \$20,000.00. We are also now being required to install our own monitoring well system at an upfront cost of about \$40,000.00, or join a "representative monitoring well program" (of laughable value) at an initial cost of about \$2500.00. These will be followed by substantial annual testing costs thereafter. It is these costs that smaller dairies had trouble with.

(e) The 2007 Order is subject to the requirements of the California Administrative Procedure Act (APA). The California Administrative Procedure Act (Chapter 3.5 of the California Government Code, Section 11340 et seq) is intended to keep the regulations of state agencies from becoming unreasonably costly and otherwise burdensome. Section 11340 of APA recites that the legislature found that "the complexity and lack of clarity in many regulations put small businesses, which do not have the resources to hire experts to assist them, at a distinct disadvantage." APA created the Office of Administrative Law to administer the Act. Section 11340.1 declares that it is the legislature's intent under APA for state agencies to "actively seek to reduce the unnecessary regulatory burden on private individuals." It is undisputed that the regional water boards are state agencies.

While Section 11340.9 (i) of APA states that this chapter does not apply to a number of matters, including a regulation that "does not apply generally throughout the state," it does apply however, under Section 11353, to "any policy, plan or guideline" that (1) the State Water Resources Control Board has adopted after June 1, 1992, or (2) that a court determines is subject to this part. In other words, Section 11353 is a specific exception to the more general exception under 11340.9 (i). Section 11353 goes on to say that the policies, plans and guidelines adopted by the SWRCB are not effective until their regulatory provisions are approved by the Office of Administrative Law.

The Tulare Lake Basin Water Quality Control Plan of 1995 and its subsequent amendments are covered by APA because it is a "plan" adopted by the State Board in 1995. The Office of Administrative Law (OAL) has reviewed and approved this Plan and its amendments. The 2007 Order recites on its page 3 that its waste discharge requirements are an "implementation" of the Tulare Lake Basin Plan. Therefore, we

contend that the 2007 Order and its WDRs should be considered a part of and an extension of said Plan. If the law requires a regional plan such as the Tulare Lake Basin Plan to be reviewed and approved by State Board and the OAL, then logic tells us that it is just as important that the waste discharge requirements adopted to implement the Plan should also be reviewed and approved by the OAL. Thus, it is our contention that the 2007 Order should have been reviewed and approved by the OAL. But it is undisputed that the 2007 Order has not been reviewed and approved by the OAL.

The Government Code provides that if any regulation or order that should be reviewed and approved by the OAL is not, then the same is invalid and unenforceable. Because the 2007 Order was not reviewed and approved by the OAL, we contend that it is invalid and unenforceable.

Under Government Code sections 11350 and 11353, we have the right to file an action for declaratory relief with the superior court, under which we can ask the court to declare that this 2007 Order should be treated as a "regulation" that should be subject to the requirements of APA. Given the significant adverse impact that the Order has on small dairies, we are inclined to think a court would see fit to declare that the 2007 Order is subject to APA requirements, and that it is invalid and unenforceable because the Regional Board did not follow the APA requirements.

4. The Regional Board has not already made factual determinations about many issues raised by us herein.

The Prosecution's counsel, Attorney Howard, claimed on pages 4 and 5 of her rebuttal statement that, during the October 13, 2011 hearing on the 2011 ACL Complaint, the Regional Board "already made a factual determination" about many of the issues we have raised herein, and "found Mr. Sweeney's arguments to be unpersuasive." (Exhibit 27) She also claimed on page 6 that "the full board rejected Mr. Sweeney's arguments. She made the same argument during the August 2 hearing (Exhibit 16, HT-19) But nothing could be further from the truth. Paragraphs 17 and 18 of section B. on page 5 herein point out where the record shows that the Regional Board's counsel, Attorney Mayer, withheld from the Board our October 2, 2011 written testimony/arguments. He then mentioned the document to the Board at the beginning of the October 13 hearing and recommended that it not be admitted. Without any discussion whatsoever, the Chair ruled that it was not to be admitted. The Ken Landau email of October 25, 2011 confirmed that this document, containing all of our testimony, evidence and arguments, was never given to the Board to read or consider.

The Chair then limited my oral testimony and argument during the October 13, 2011 hearing to five minutes during which I was to only comment on the herd size data. Hence, the record clearly shows that the Board never read, heard or considered the written testimony, evidence and arguments contained in my thirteen-page document dated October 2, 2011. Therefore, the Board could not and did not make any specific factual determinations on the issues raised by us. It only moved, seconded and voted to adopt the

proposed order to impose a civil liability penalty against us for not filing the 2009 Annual Reports. Therefore, the Regional Board did not find all of our “arguments to be unpersuasive;” it never read or heard them! We were stunned that counsel would so profoundly misrepresent the facts.

5. Water Code Section 13320 does not bar us from attacking the legality of the 2007 Order.

The Prosecution’s counsel argued on page 11 of her rebuttal statement that and at the August 2 hearing (Exhibit 16, HT – 21-22) that we are barred from attacking the legality and enforceability of the 2007 Order because of section 13320 of the Water Code. This section says an aggrieved person may petition the state board within 30 days of a regional board’s action, in this case the adoption of the 2007 Order. But she cited no legal authority that establishes that a person cannot defend himself against enforcement of such an order against him, or against punishment thereunder, if the order, as adopted, violates specific provisions of the statutes that authorize it. Further, the Regional Board has no legal right to enforce or punish under an order that violates applicable statutes. Nothing can be more fundamental and logical than that.

6. Our filing of the 2007 and 2008 Annual Reports do not constitute a waiver of our objections to the filing of the 2010 Annual Report.

The Prosecution’s counsel argued on page 11 of her rebuttal statement that when we filed the 2007 and 2008 reports, we waived our objection to the filing of the 2010 Annual Report. (Exhibit 28) This is not true. The information we submitted to the Regional Board on June 25, 2008 (2007 Report) and on June 26, 2009 (2008 Report) was herd size and nutrient management information, the very same information the Board has been requiring for many years prior to its adoption of the 2007 Order. This information did not need to be developed or certified by a “registered professional” (engineer), and was not costly to produce. In sharp contrast, the 2007 Order imposed an entirely new category of expensive reports that had to be prepared by licensed engineers. These are the reports that were unnecessary, and which we, as small dairymen, could not afford and did not file. To repeat, the Regional Board acknowledged in its 2009 Order that these reports were very expensive, and because of that, postponed their filing deadline by one year. In light of this, it cannot be argued that what we filed in 2008 and 2009 waived our objections to the new burdens imposed by the 2007 Order.

7. The Regional Board did not have a quorum of duly confirmed board members in order to take action on August 2, 2012.

Subsection (a) of Section 13201 of the Water Code provides that “Each [regional] board shall consist of the following nine members appointed by the Governor, ...” Subsection (b) goes on to require that “All person appointed to a regional board shall be subject to Senate confirmation.” Of the nine board positions, there are seven members appointed to

the Central Valley regional board. The other two board positions are vacant. On July 16, 2012, we sent a Public Records Act request to the Prosecution Team's counsel wherein we asked for copies of documents that would show that the last four board appointees (Jon Costantino, Jennifer Lester Moffit, Carman Ramirez, and Robert Schneider) had been confirmed by the State Senate. While counsel produced evidence of their appointment by the Governor, she did not produce copies of their Senate confirmation. We advised her on July 18, 2012 that we could not find evidence of such confirmations and if she could not produce such evidence by the date of the hearing, we have concluded that such confirmations had not occurred. (Exhibit 29)

Since the Prosecution Team failed to introduce any such evidence into the record by the time of the hearing, or at the hearing, we believe that the Board had only three members lawfully authorized to act on August 2, which is not a quorum for a nine position board.

D. Appeal and Petition for Review/ Actions Requested of State Board.

Pursuant to Section 13320 of the California Water Code, we hereby appeal to the State Board regarding the following decisions, actions, and failures to act by the Regional Board, and we petition the State Board to review the same and grant us the relief we hereinafter request:

1. We petition the State Board to determine and declare that the Regional Board lacked a duly qualified quorum to take any action on August 2, 2012, and therefore the Regional Board's adoption of the order of civil liability against us is invalid and therefore is set aside.
2. We appeal the refusal of the Regional Board on August 2, 2012 to grant our request for a formal hearing before the Board where we could present a full case in support of our request for a modification of the WDRs in the 2007 Order. We petition the State Board to review said failure and to order the Regional Board to grant us such a hearing. The relevant dates on which we made this request are more particularly set forth in the Statement of Facts above.
3. We have contended that the 2007 Order is illegal, invalid, and unenforceable, a position that the Regional Board refused to agree with and declare during the hearing on August 2, 2012. We petition the State Board to review our evidence and legal arguments in support of our contention that the 2007 Order is illegal, invalid and unenforceable. We petition the State Board to determine and declare that the 2007 Order is indeed illegal, invalid and unenforceable, and that the Regional Board's adoption of the order of civil liability against us on August 2, 2012 is therefore illegal, invalid and unenforceable against us, as well as against all other Dischargers, and that the 2007 Order be set aside.
4. We appeal the Regional Board's action on August 2, 2012 of adopting the proposed order imposing administrative civil liability against us of \$7,650.00. We petition the State Board to review that action and to determine and declare that that said action was

premature, improper, invalid and a denial of due process, and therefore that it be set aside. We also petition the State Board that the enforcement of the civil liability order against us in the amount of \$7,650.00 be stayed pursuant to the powers granted it by section 13321 of the Water Code.

E. Concluding Remarks.

Thirty-one years ago, in 1980, the State legislature enacted the California Administrative Procedures Act. The legislature expressed its concern thirty years ago that the “complexity and lack of clarity in many regulations put small business, which do not have the resources to hire experts to assist them, at a distinct disadvantage.” (Government Code, Section 11340)

As a small business, we found ourselves in precisely the predicament about which the legislature was concerned. Indeed, we are one of those operations about which you, the State Board, expressed concern about what effect the proposed 2007 Order would have on operations like ours.

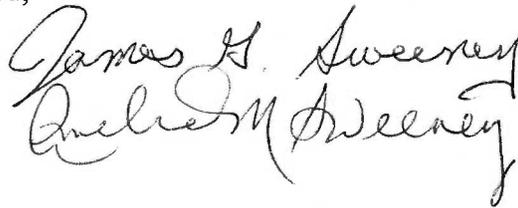
We are clearly an endangered species. While many, including some in government, pay simple lip service to the value and attributes of the “family farm,” little is done to protect them. So we call upon the State Board to step up and courageously do its part to grant relief to our small business.

A copy of this Petition (including Exhibits) has concurrently been sent to the Regional Board as required by law.

Respectfully submitted,

James G. Sweeney

Amelia M. Sweeney

Handwritten signatures of James G. Sweeney and Amelia M. Sweeney. The signature of James G. Sweeney is written in cursive and is positioned above the signature of Amelia M. Sweeney, which is also in cursive.

Cc: Central Valley Regional Water Quality Control Board

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION**

**ORDER NO. R5-2009-0029
AMENDING ORDER NO. R5-2007-0035
WASTE DISCHARGE REQUIREMENTS GENERAL ORDER
FOR
EXISTING MILK COW DAIRIES**

The California Regional Water Quality Control Board, Central Valley Region (hereafter Central Valley Water Board), finds that:

1. On 3 May 2007 the Central Valley Water Board adopted Order No. R5-2007-0035 Waste Discharge Requirements General Order for Existing Milk Cow Dairies (hereafter General Order).
2. As of March 2009, 1467 dairies are regulated under the General Order.
3. The General Order requires that the dairies prepare and submit technical reports addressing waste management at the dairy facilities. Where the assessment of the waste management determines that modifications to facilities or management are required to comply with the terms of the General Order, the dairy must make the changes within specified timeframes. General Order, Required Reports and Notices H.1.b and Attachment B.
4. Because the General Order imposed new and more stringent requirements on existing milk cow dairies, compliance with provisions of the General Order was phased in over time, with deadlines specified in Table 1 of the General Order. Major elements of the Waste Management Plan (WMP) are due on 1 July 2009.
5. In a letter dated 27 February 2009, the Community Alliance for Responsible Environmental Stewardship (CARES), a coalition of California's dairy producer and processor associations, requested Board consideration of a change in the deadline for the elements of the WMP due 1 July 2009. CARES points out that the cost of the report can be as high as \$30,000 per facility and that the industry is dealing with a significant drop in income as a result of the decrease in milk prices caused by the national and international economic downturn. CARES reports that on 1 February 2009 the minimum price paid to producers for milk dropped from \$1.50 per gallon to 97 cents per gallon. CARES further reports that, at the same time, milk production costs have continued to rise from last year's levels. The proposed new deadline by CARES for submission of the WMP is 1 July 2010.

6. Most of the elements of the WMP due 1 July 2009 must be prepared by registered engineers and would provide details on the changes needed (if any) to meet wastewater storage requirements and flood protection at the facility. Where improvements are necessary, the dairies must submit a retrofitting plan and schedule along with the WMP. Under the schedule specified in Table 1 of the General Order, dairies must certify that the improvements have been completed by 1 July 2011. Table 1 additionally provides that a status on facility retrofitting completed or in progress must be submitted by 1 July 2010.
7. Revising the deadline for submission of elements of the WMP to 1 July 2010 does not change the 1 July 2011 due date when all improvements must be in place. Therefore, the modification will have no impact on water quality. The due date for the status report on facility retrofitting completion as proposed by the WMP will be moved from 1 July 2010 to 31 December 2010 to help ensure that the dairies are on track with implementing the necessary WMP modifications by 1 July 2011.
8. This Order does not change the schedule for submission of the Nutrient Management Plan (1 July 2009) or submission of a report on the status of facility retrofitting completion as proposed by the Nutrient Management Plan (1 July 2010).
9. Finding 38 of the General Order states: "The Central Valley Water Board recognizes that this Order imposes new and more stringent requirements on existing milk cow dairies than they have previously been required to comply with and that some revisions to this Order may be necessary in the future in order to address issues that are not presently foreseen. The Executive Officer will provide annual updates to the Central Valley Water Board on the overall compliance with the Order and make recommendations for revisions to the Order if necessary." This Order is the first proposed revision to the General Order.
10. This action to amend the General Order is not a "project" as defined under California Public Resources Code section 21065 and Title 14 of the California Code of Regulations, section 15378, because it has no potential for resulting in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment. The action is therefore exempt from California Environmental Quality Act (CEQA) pursuant to Title 14 of the California Code of Regulations, section 15061(b)(3). In addition, this action is exempt from CEQA in accordance with Title 14 of the California Code of Regulations, section 15301 since it

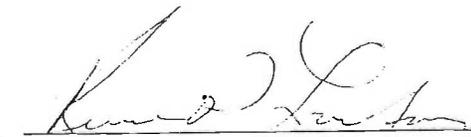
involves no expansion of use of existing facilities beyond what the General Order currently allows.

11. The Central Valley Water Board has notified interested agencies and persons of its intent to issue this Order and has provided them with an opportunity of a public hearing and an opportunity to submit comments.
12. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the proposal to regulate discharges of wastes from existing milk cow dairies under this Order.
13. Any person affected by this action of the Central Valley Water Board may petition the State Water Resources Control Board (State Water Board) to review this action, in accordance with Water Code section 13320 and Title 23, California Code of Regulations, Section 2050. The State Water Board must receive the petition within 30 days of the date on which the Central Valley Water Board adopted this Order. Copies of the law and regulations applicable to filing petitions will be provided upon request.

IT IS HEREBY ORDERED that, pursuant to the California Water Code Sections 13260, 13263, and 13267 and in order to meet the provisions contained in Division 7 of the California Water Code and regulations and policies adopted thereunder; all dischargers that have been notified by the Central Valley Water Board that they must comply with the General Order shall comply with the following:

1. Table 1 of the General Order is revised to show that the elements of the WMP originally due on 1 July 2009 are now due on 1 July 2010. The Table is also revised to change the due date for the status report on facility retrofitting completion as proposed by the WMP from 1 July 2010 to 31 December 2010. The status report shall provide the status of facility retrofitting needed to implement the WMP. The portion of the Table that is modified is attached (Attachment A).

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 23 April 2009.

for 
PAMELA C. CREEDON, Executive Officer

Changes to Table 1 of Waste Discharge Requirements General Order No. R5-2007-0035
 Existing Milk Cow Dairies
 (Only those portions of the Table that were changed are shown below)

Table 1. Schedule for Submittal of Existing Conditions Report, Waste Management Plan, Nutrient Management Plan, Salinity Report, Preliminary Infrastructure Needs Checklist, and Annual Reports

| Due Date | Submittal Due | Contents of Submittal | Professional Certification Requirements |
|---------------------------|--|--|---|
| 1 July 2009 10 | Waste Management Plan (with Retrofitting Plan/Schedule) Including the Following Items in Attachment B (Waste Management Plan): | Retrofitting needed to improve storage capacity, flood protection, or design of production area- may include design/construction of new pond, berms for flood protection, grading for drainage, etc. | California Registered Professional |
| | Items I.F.1.b, I.F.2.b | Facility Description | None |
| | Item II | Storage Capacity | California Registered Professional |
| | Item III | Flood Protection | California Registered Professional*** |
| 1 July 2009 10 | Item IV | Production Area Design/Construction | None |
| | Item VI | Documentation there are no cross connections. | Trained Professional** |
| 1 July 2010 | Status on facility retrofitting completed or in progress | Status on facility retrofitting completion as proposed (1 July 2009) for the Nutrient Management Plan, and Waste Management Plan. | None |
| 31 December 2010 | Status on facility retrofitting completed or in progress | Status on facility retrofitting completion as proposed (1 July 2010) for the Waste Management Plan. | None |

Italics = additions to Table 1

March 28, 2010

California Regional Water Quality Control Board

Central Valley Region

1685 E Street

Fresno, CA 93706

Attention: David A Sholes

Mr. Sholes,

We operate a small dairy in Visalia, California milking about 300 cows. The financial burden placed on us to comply with the requirements of the Regional Water Quality Board is tremendous. The current economic conditions of the dairy industry compound our problems. We are unable to pay the bills which we have and are asking for a reprieve from your office.

If you check the previous reports from our dairy the water quality of is excellent. We do an outstanding job with our farming practices and export much of the manure generated to other farms. The amount of waste water is minimal as we do not flush. The only water is from washing the cows and washing the barn.

I would welcome a visit from you so that you can personally see our operation. A dairy has been operated on these premises for at least 75-80 years. If there was a problem with water contamination it would show up in the testing.

I grew up in San Francisco and have a deep appreciation for nature and protecting our environment. I, like most farmers, value the resources that we are blessed with. It seems unfair that a court decision that was directed at mega dairies should have such a devastating effect on our livelihood.

If you are unable to grant a waiver for this year I would like to ask to present my case to the Regional Water Quality Board at their next meeting.

Sincerely,

Jim Sweeney

Sweeney Dairy

30712 Road 170

Visalia, CA 93292

April 7, 2010

California Regional Water Quality Control Board

Central Valley Region

1685 E Street

Fresno, CA 93706

Attention: Ken Jones

Mr. Jones,

We operate a small dairy in Visalia, California milking about 300 cows. The financial burden placed on us to comply with the requirements of the Regional Water Quality Board is tremendous. The current economic conditions of the dairy industry compound our problems. We are unable to pay the bills which we have and are asking for a reprieve from your office that you suspend our reporting requirements for one year.

If you check the previous reports from our dairy the water quality is excellent. We do an outstanding job with our farming practices and export much of the manure generated to other farms. The amount of waste water is minimal as we do not flush. The only water is from washing the cows and washing the barn.

I would welcome a visit from you so that you can personally see our operation. A dairy has been operated on these premises for at least 75-80 years. If there was a problem with water contamination it would show up in the testing.

I grew up in San Francisco and have a deep appreciation for nature and protecting our environment. I, like most farmers, value the resources that we are blessed with. It seems unfair that a court decision that was directed at mega dairies should have such a devastating effect on our livelihood.

If you are unable to grant our request I would like to appeal your decision and request the opportunity to present my case to your board at some future meeting.

Sincerely,

Jim Sweeney

Sweeney Dairy

30712 Road 170

Visalia, CA 93292

cc. Mike Lasalle



nda S. Adams
Secretary for
Environmental
Protection

California Regional Water Quality Control Board Central Valley Region

Katherine Hart, Chair

1685 E Street, Fresno, California 93706
(559) 445-5116 • Fax (559) 445-5910
<http://www.waterboards.ca.gov/centralvalley>



Arnold
Schwarzenegger
Governor

15 June 2010

Mr. James Sweeney
30712 Road 170
Visalia, CA 93292

INFORMATION REVIEW, SWEENEY DAIRY, WDID #5D545155N01, 30712 ROAD 170, VISALIA, TULARE COUNTY

On 12 April 2010, Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff received a letter from you regarding the subject facility (Dairy). In your letter, you requested that we "suspend" your reporting requirements for one year. Your letter also requested the opportunity to present your case to the Central Valley Water Board.

Your Dairy is enrolled under Order No. R5-2007-0035, Waste Discharge Requirements General Order for Existing Milk Cow Dairies (General Order). The General Order requires reporting as outlined in section H, Required Reports and Notices. The schedule for submitting the required reports is outlined in section J, Schedule of Tasks. Central Valley Water Board staff has no authority to suspend or otherwise modify the reporting requirements specified in the General Order.

The next meeting of the Central Valley Water Board is scheduled for 28, 29, and 30 July 2010 at our Sacramento Office, 11020 Sun Center Drive, #200, Rancho Cordova, CA 95670. Any member of the public may address the Board on any matter within the Board's jurisdiction and not scheduled for consideration at the meeting. Certain time limits and schedule restrictions for a public forum apply. An agenda of for the July meeting is not yet available. The agenda for the May Meeting with an outline of the meeting rules are attached. Additional information can be found on our website www.waterboards.ca.gov/centralvalley.

If you have any questions regarding this matter, please contact Ken Jones at kjones@waterboards.ca.gov or (559) 488-4391.

DALE E. ESSARY, PE
RCE No. 53216
Lead Associate
Confined Animals Unit

Enclosure

cc: Tulare County Resource Management Department, Visalia
Tulare County Health & Human Services Agency, Visalia

California Environmental Protection Agency

June 27, 2010

California Regional Water Quality Control Board

1685 E Street

Fresno, CA 93706

Attention: Dale E. Essary, PE

Mr. Essary,

This letter is in response to your letter dated June 15, 2010.

As you know the dairy business continues to suffer unprecedented financial hardship. Our dairy has had our loans put into distress and we have had to spend quite a bit of money protecting ourselves from Farm Credit West. We are doing our best to improve our financial position by my wife accepting a full time position at College of the Sequoias and by getting a part time job myself.

As I read paragraph 13 of Section E of your Order R5-2007-0035, I have the right to inform you of my anticipated noncompliance, but I must give you the date when I can be in compliance. I would hope that I could submit the 2010 Annual Report in one year, namely, on or before July 1, 2011.

If you have reviewed my prior reports, you can see that our dairy operation has a history of compliance and of protecting the underground water. I am unsure as if the authors of this policy ever considered the financial strain that it would place on smaller dairy farms regardless of the economic situation. Even if the dairy is in complete compliance the costs of hiring engineers and specialists to comply with current regulations places an undue stress on the operator.

If your agency suffered a drastic cut in state funding, it would have no choice but to curtail and/or suspend many of its current functions and everyone would understand. It is no different with us.

We would welcome if a member of your staff would come to the dairy and assist us filling out the reports needed and doing the engineering work required to bring us into compliance.

If you are unwilling to accept our proposal for a modification of the filing date for the 2010 Annual Report, then we appeal your determination to the Board. In such an event, I believe that we are entitled to a full hearing before the Board as a scheduled and properly noticed Agenda item. Because I cannot be away from the dairy for very long, I request that the matter be scheduled for a board meeting when it sits in Fresno.

Sincerely,

August 22, 2010

Central Regional Water Quality Control Board

1685 E Street

Fresno, CA 93706

Attention: Dale Essary

Mr. Essary,

This letter is in response to letters dated August 16, 2010 from your office.

I am appealing your decision to the Regional Board. It is my understanding that I have the right to appear as a separate agenda item before the Board when it sits in Fresno.

As I stated in an earlier letter dated June 27, 2010 the dairy industry continues to suffer unprecedented financial hardship. If your agency suffered a drastic cut in state funding, it would have no choice but to curtail and/or suspend many of its current functions and everyone would understand. It is no different with us.

I do not believe that the intention of the original ruling of the Court was to eliminate small dairies by burdening them with excessive regulations and expense. The original lawsuit was filed against construction of large dairies. It seems to be that actions initiated by the Regional Water Quality Board favor large operations.

There has been a dairy present at this location for eighty years. If you review our reports filed previously you will see that the water quality is excellent. How long does it take for a dairy to contaminate the ground water? How many dairies our size was included in the testing prior to the writing of these regulations?

Please advise us when you have scheduled the hearing on our appeal before the Regional Board, as well as the address where the hearing will be held. Please ensure that I am given at least 20 days advance notice so that I can make the necessary arrangements at the dairy. As I have said before I need to have the hearing held when the Board meets in Fresno since I cannot be away from the dairy for an extended period of time.

Thank you for your cooperation.

Sincerely,

1 And finally, the procedures for administrative
2 regulations and rulemaking under chapter 3.5 of the APA do
3 not apply to the adoption of waste discharge requirements.
4 And that's explained in Section 11352 of the Government
5 Code.

6 --o0o--

7 STAFF COUNSEL OKAMOTO: Secondly, you'll hear Mr.
8 Sweeney argue that the complaint is premature because he
9 hasn't had the opportunity to have his request to modify
10 the reporting deadlines heard by the Regional Board
11 because the staff refused to place this matter on a Board
12 meeting agenda. Though Mr. Sweeney requested the staff
13 provide relief from the reporting deadlines, staff itself
14 does not have the ability to modify the monitoring and
15 reporting requirements. Only you, as the Regional Board,
16 or the Executive Officer to who you delegated authority
17 would have the ability to modify the requirements.

18 A request for modification of requirements does
19 not necessarily create an automatic procedural right to a
20 hearing before the Regional Board. If it did, I would
21 imagine that the Board -- you, as the Board, would be
22 inundated with hearings and items on your agenda. Rather,
23 the decision to place a matter on the agenda remains
24 within the discretion of your management in consultation
25 with the Executive Officer as the gatekeeper.

1 Executive Officer in the Fresno office. I'll make the
2 closing statement.

3 I think the issue at hand here is the fact that
4 the reports were not submitted in a timely basis. The
5 large percentage of dairies that were in this
6 classification did do that.

7 Mr. Sweeney did approach us to ask for an
8 extension. We decided an extension -- as the gatekeepers
9 to the Board, that the extension of the Waste Management
10 Plan had already been granted. And that was granted in
11 such a manner that the implementation date did not change.
12 So that we would be ensured that water quality was
13 protected. Additional extensions of the Waste Management
14 Plan would have threatened that if there are issues like
15 cross-connection, if there are issues like drainage.

16 As Mr. Sweeney stated, that inspection report
17 that staff did was from 2003. It was a cursory
18 approximation of what was done. And we needed more
19 definitive answers.

20 Other issues, he is near surface water. So we
21 also have surface water protection issues in addition to
22 the groundwater protection issues that needed to be
23 addressed by the Waste Management Plan. The Annual
24 Reports, it is critical that that information be collected
25 annually, submitted in a timely manner. So if issues are

Date: September 21, 2011

Re: Response to email of September 20, 2011 - Complaint R5-2011-0562 – Sweeney Dairy

Dear Mr. Meyer:

This letter is to respond to your email of September 20, 2011. As you know, commencing in April, 2010 and many times thereafter, my wife and I requested a hearing before the regional board in order to seek relief from some of the waste discharge requirements set forth in Order R5-2007-0035. When we informed you that we wish to make that request while we are appearing before the board during the October hearing, you have informed us that such a "request would not be appropriate at that time. In light of your position, then please schedule such a hearing at a future meeting of the regional board, and please promptly inform us of the date of such hearing. We do not believe it is within your authority or discretion to deny us that opportunity. We think the Water Code is clear that only the regional board has the non-delegable authority to modify or refuse to modify waste discharge requirements. How can the board make that decision if the staff intervenes to act as a barrier to the making of such a request? In his testimony before the Hearing Panel, your fellow employee, Mr. Clay Rodgers, freely boasted that your staff acts as the board's "gatekeeper."

While we are disappointed in most of the "Chair's" rulings, we are not surprised by the contents of your recent email. It was a predictable and shameful continuation of your Agency's transparently self-created deadlines, cut-off dates and decisions that that are clearly designed to impede a party's ability to properly prepare his defenses and to thwart a fair hearing.

The record will show that we have made numerous requests for more time and for continuances, the most critical of which you denied. In light of all circumstances – representing ourselves, needing time to study to lay of the land, the law, determining what documents to request, reviewing over 34,000 pages of documents – we think a judge will view your denials of our requests for more time as a terrible abuse of discretion. As you well know, judges often deal with continuance requests and are quite sensitive to the need for all parties to have ample time to prepare.

You try to make it sound as if we have not shown the relevance of the administrative record to Order R5-2007-0035, or to your Complaint against us. We are still going through the 34,000 pages of administrative record. At this juncture, we have found that no evidence was introduced that the reporting requirements that existed before the adoption of the 2007 Order were insufficient, inadequate, unreliable or otherwise unsatisfactory. Moreover, there has been no showing of the need of the new reporting requirements adopted in the 2007 Order. We believe that the law is well settled that administrative rules and regulations are invalid and unenforceable unless supported by substantial evidence. If, upon completion of our review of the administrative record, we have found no substantial evidence, we intend to raise that as an additional defense to your Complaint against us. Your denial of additional time to complete our review of such a vast amount of documents and your unwillingness to let us introduce the results of our findings is an egregious abuse of discretion that deprives us of a fair hearing.

We intend to be present at the hearing on your proposed order regarding the Complaint against us. We intend to enter all relevant evidence into the record at that hearing.

Sincerely,

Jim Sweeney

From: Alex Mayer <AMayer@waterboards.ca.gov>

To: Japlus3 <japlus3@aol.com>

Cc: Dale Essary <dessary@waterboards.ca.gov>; Ken Landau <klandau@waterboards.ca.gov>; Mayumi Okamoto <MOkamoto@waterboards.ca.gov>

Subject: Re: Sweeney

Date: Thu, Sep 29, 2011 4:36 pm

Mr. Sweeney,

In your letter to me dated September 21, 2011, you asked to me to schedule a hearing of the Central Valley Water Board to modify Order R5-2007-0035 (Dairy General Order). As staff counsel to the Advisory Team on Administrative Civil Liability Complaint R5-2011-0562, I do not have the authority to schedule such a hearing. You made a similar request in a letter dated September 5, 2011. In response to your September 5, 2011 letter, the Advisory Team consulted with the Chair of the Central Valley Water Board. On September 20, 2011, the Advisory Team reported the Chair's ruling to you and the Prosecution Team. That ruling explained that a request to modify the Dairy General Order would not be appropriate during the Board's upcoming agenda item to consider a proposed Administrative Civil Liability Order against your dairy for violation of the Dairy General Order. It also explained that you, as a member of the public, would be allowed to speak about that topic during the public forum portion of the Board meeting, or otherwise direct your request to the Board's staff, which includes its Executive Officer.

Sincerely,

Alex Mayer
Staff Counsel, Central Valley Regional Water Quality Control Board

>>> Japlus3 <japlus3@aol.com> 9/22/2011 1:05 PM >>>

acts.

My name is James Sweeney, and my wife and I are the named Dischargers under the Central Valley Regional Water Quality Control Board's Administrative Civil Liability Complaint R5-2011-00562.

We operate a small dairy at 30712 Road 170, Visalia, CA. We milk around 300 cows on a site where a dairy has continuously been conducted for over eighty years. We are a small business in that our gross receipts from our agricultural operation did not exceed \$1,000,000.00 in 2009.

Your agency's Order No. R5-2007-0035, as amended by Order No. R5-2009-0029 ("Order"), compelled us, along with all other dairymen, to prepare and file with your agency by July 1, 2010 the 2009 Annual Report, including an Annual Dairy Facility Assessment for 2009, and a Waste Management Plan, which consists of the following reports: (1) Retrofitting Plan for needed improvement to storage capacity, flood protection or design of the production area, (2) Dairy site and Cropland maps, (3) Wastewater lagoon capacity evaluation, (4) Flood protection evaluation, (5) Dairy and cropland design and construction evaluation, (6) Cross-connection assessment report. Your Order required most of these reports, technical and otherwise, to be prepared by appropriately licensed professionals/engineers and consultants, who are very expensive. And these burdens do not include the costs of the expensive reports that are required to submit to the San Joaquin Valley Air Pollution Control District. In total, we were facing regulatory costs of approximately \$20,000.00.

The dairy industry suffered through a dreadful period in 2009 due to a combination of low milk prices and high feed costs that were unprecedented since The Great Recession. It was a period from which many of us dairymen have not yet recovered. Indeed, your agency's 2009 Order acknowledged the seriousness of the dairy

industry's economic situation by postponing for a year the filing date for most of the above reports.

Our dairy lost \$87,000.00 in 2009. By the fall of 2009, our lender had categorized our loan as "distressed," and the limited amount of funds it was willing to advance to us was barely enough to purchase feed and to pay such essentials as labor and utility bills. Had we used these funds to hire the engineers and consultants needed to prepare these reports, then we would have been put in a position where we would have been guilty of fraud - buying feed from farmers while knowing that we would have not have the funds to pay for it. On a per cow basis, the regulatory costs imposed by the Order's requirements are disproportionately higher for small dairies as compared to large operations, and put small dairies at a competitive disadvantage and threaten their very survival.

Environmental groups and your agency have both at times been critical of large dairies, pejoratively calling them "mega dairies" and "factory farms." It is true that larger dairies discharge larger volumes of waste and generally pose a greater potential threat to our groundwater. Yet, ironically, your agency has adopted burdensome monitoring and reporting requirements that put extra pressure on smaller dairies to the extent of driving some of them out of business. I know of a number of small dairies who told me they sold out because they knew they could not afford the costs of complying with your agency's reporting requirements. As a result, perhaps unwittingly, your agency's requirements are causing large dairies to grow even larger as they fill the production lost by the small dairies going out of business.

On March 28, 2010, more than three months before the July 1, 2010 filing deadline, we wrote a letter to your agency asking for an extension of the deadline for submission of these reports. Anticipating that the staff would refuse to grant said relief, we asked the staff in our letter of April 7, 2010 to schedule the matter for a face-to-face hearing

before the regional board so that we could present our request for a modification of the Order.

In their letter of June 15, 2010, the Central Valley staff stated that they had no authority to modify the reporting requirements, and they refused to schedule a formal, agenda-item hearing before the regional board. Instead, they advised us that we were free to address the Board during the Public Forum section of their Agenda, even though such presentations are limited to 3 minutes.

In letters dated July 27, 2010, and August 22, 2010 we continued to press the staff to schedule a hearing before the regional board. Yet, your agency continued to deny our request for a hearing before the board.

We heard nothing from your staff until May 8, 2011 when we received the Complaint by certified mail.

Legal Arguments.

1. Your agency is denying us due process for the following reasons:

(a) On August 16, 2010, your agency sent us Notices of Violation, specifying our failure to file the above-named reports by the July 1 deadline. You did not serve your Administrative Civil Liability Complaint on us until May 8, 2011, almost nine months later. Attached to the Complaint was a description of the hearing protocols, including various deadlines. One of these deadlines was that we had to notify your agency of any documents, evidence, witnesses and legal arguments we intended to use or make at the hearing by June 13, 2011, only 35 days after receipt of the Complaint. According to your self-serving rules, we could not use anything we did not identify, produce or submit as legal argument by that date. We are full time dairymen. Because we are small

I actually do some of the milking and most of the feeding and cow care, and we have very little time each day to work on this matter.

(b) On June 20, 2011 we made a Public Records Act request, asking for copies of documents in your agency's file, and asked that they be provided by June 30, 2011 so that we would have time to review and evaluate them before the hearing. We were advised by agency counsel that because the documents were "voluminous" this request was "not practicable." We were told that we would have to make arrangements to go to your agency's Fresno office to personally go through the files. If the task is "impracticable" for your agency, it is certainly "impracticable" for us, as we have very few available hours beyond our full time duties at the dairy. This is additional evidence why a continuance of the hearing was needed and why a refusal to grant a continuance constituted an abuse of discretion and a denial of due process. Section 13292 states that it is the state board's responsibility to ensure that the regional boards provide "fair" access to participants in its proceedings and to improve its "adjudication procedures." In short, your agency's self-written Hearing Procedures is a quagmire of detailed and confusing protocols and short-fused deadlines that effectively deprive someone like us of an ability to satisfactorily prepare our evidence, to adequately make our case, and to defend ourselves against the Complaint. We have little doubt that it is all of intentional design to overwhelm, intimidate, discourage and set traps against anyone who would otherwise want to challenge the agency or any of its rules and regulations. We intend to bring this sad situation to the attention of the state board in the near future.

2. The Administrative Civil Liability Complaint filed against us is premature, for the following reasons.

- (a) Section 13269 of the Water Code recites that a regional board may waive monitoring requirements if it determines that a discharge does "not pose a significant threat to water quality." The 2009 Order declares that it "serves as general waste discharge requirements of waste from existing milk cow dairies ... of all sizes." (2007 Order, p.1) Under the Order's terms, a Discharger has the right to seek a modification of any of those general waste discharge requirements. (2007 Order,) The reporting requirements, including the filing deadlines for annual and technical reports, are part of the Order's general waste discharge requirements for which a dairyman may seek modification, exemption or other similar relief.
- (b) While the regional board may delegate some of its powers and duties, some are not delegable. The modification of any waste discharge requirement is one of those powers and duties that are not delegable. (Water Code Section 13223) It was the regional board's nondelegable duty and responsibility to hear and decide our request for relief.
- (c) Thus, we believe we have a right to appear before the regional board to seek a modification or waiver from any of the Order's general waste discharge requirements. Had your agency's staff scheduled a hearing before the regional board, it is possible that the regional board would have granted us relief from these deadlines, in which case, we would not be in violation of the filing requirements. The filing and serving of your Complaint for Administrative Civil Liability is premature. Your agency cannot contend that we have violated the filing requirements until such time as the regional board has heard and denied our request and after we have exhausted our appeal and all other legal remedies afforded us under the Water Code. (Water Code Sections 13320, 13325, and 13330)
- (d) In an email dated June 13, 2011 in which Alex P. Mayer denied our request for a continuance. He waited until the last possible day and never considered

that rural internet services are unreliable and that we were unable to transmit documentation due on that date. All of the FAX numbers listed on the complaint are numbers that do not accept FAXes.

3. The Order is unlawful, and therefore unenforceable, in that it fails to comply with applicable provisions of the Water Code in the following ways:

(a) The "Monitoring and Reporting Program" of the 2007 Order recites that it is issued pursuant to Water Code Section 13267. (2007 Order, p. MRP-1) Section 13267 (b) (1) indeed states that "the regional board may require that any person who ... discharges ... waste within its region ... shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires."

But Section 13267 (b) (1) goes on to prescribe that "The burden, including costs, of the reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring these 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."

Your agency has entirely failed to comply with Section 13267 in that it never provided us "with a written explanation with regard for the need for the reports," and it has failed to "identify the evidence that supports requiring [us] to provide the reports."

Had we been allowed to appear before the regional board, we were prepared to show that our site has continuously had a dairy operating on it for over

eighty years. We were prepared to show that recent water samples from our three wells tested .2, 1.1 and 1.4 mg/L for nitrate nitrogen levels. This is considerably below state limits. Do such results indicate that our operation is a threat to the underground water? We were intending to argue to the regional board that the foregoing well-water test results were compelling evidence that our operation was not adversely impacting ground water, and hence the cost of these reports did not, in the words of Section 13267, "bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports."

Over the years, your agency's staff has visited our dairy site to inspect and obtain information about it. Indeed, I can recall a staff member spending an entire day in recent years, and can recall him measuring the dimensions of our waste water lagoon. We have also submitted a great deal to information and reports to your agency in recent years.

Your agency is requiring us to submit new reports that must be prepared by engineers and other licensed professionals that we believe are, for the most part, duplicative, and add nothing useful or valuable, besides being terribly costly. In this regard, your agency's refusal to accept already available information in its files ignores Section 13267's requirement that your agency's reports should "bear a reasonable relationship to the need for the reports."

This is why we requested copies of the documents that your agency has in its files regarding our dairy operation, and why we must be given a fair opportunity to determine how much of your required Waste Management Reports are redundant, unneeded and unjustified.

(b) Water Code Section 13263 (e) provides that "any affected person may apply to the regional board to review and revise its waste discharge requirements. All requirements shall be reviewed periodically." If new and more cost effective ways can accomplish the same purpose, we contend that the regional board is under a legal duty to review such issues and revise its requirements accordingly. New and old research and advanced technologies exist which may provide less expensive means for evaluating groundwater contamination risk, of determining non-contamination of groundwater, and of using less expensive practices that can still prevent such contamination.

For example, there is a recent research study that establishes that soil bacteria break down and eliminate nitrates in dairy waste water in a substantial if not complete degree. There are also new techniques for determining how "old" first encountered groundwater is beneath a dairy site. There are tests to detect the presence or absence of pesticides, herbicides, radioactive isotopes, and other elements which can determine whether water from dairy lagoons or from waste applied in irrigation water has infiltrated into first encountered groundwater. There are simple and inexpensive ways to show the amount of highly compacted clay layers sitting beneath a dairy site and whether they constitute an impervious barrier between the dairy and the groundwater.

Instead, your Order contains a "one-size-fits-all" approach, and requires reports that in some cases may not be needed. Some of these reports are ludicrous and unnecessary. One laughable example is that we are required to provide monthly photos of our lagoons to show that the water level was not too high. This is as absurd as requiring us to photograph our speedometer each month to prove we didn't drive over the speed limit.

In short, most of the Order's reporting requirements are primitive, antiquated, obsolete, and provide nothing of real value, except for lining the pockets of engineers, consultants and laboratories. We contend that your agency will be unable to show that it has continued to sufficiently examine and consider such research results and advanced technologies, or that it has modified its Order accordingly. The foregoing represents another reason why the Complaint against us is premature. Had our request been scheduled for a hearing before the regional board and had we been allowed the opportunity to present in detail all of the matters and issues described above, we believe that there were abundant grounds under which the regional board could have granted us considerable relief from many of its reporting requirements. In such event, there would not have been a basis for filing the Complaint against us.

(c) The Order's waste discharge requirements as they relate to water quality objectives must take into account economic considerations. (Water Code Sections 13241 and 13263 (a)) The Order does not do so, particularly failing to provide means for smaller dairies to deal with disproportionately higher per cow reporting costs. Indeed, the Order fails to address the special economic circumstances of smaller dairies in any way whatsoever.

(d) The California Administrative Procedure Act ("CAPA"- Chapter 3.5 of the California Government Code, Section 11340 et seq), is intended to keep the regulations of state agencies from becoming unreasonably costly and otherwise burdensome. Indeed, Section 11340 of CAPA recites that the legislature found that "the complexity and lack of clarity in many regulations put small businesses, which do not have the resources to hire experts to assist them, at a distinct disadvantage." CAPA created the Office of Administrative Law to administer the Act.

Section 11340.1 goes on to declare that it is the legislature's intent under CAPA for state agencies to "actively seek to reduce the unnecessary regulatory burden on private individuals." It is undisputed that the regional water boards are state agencies.

While it is true that Section 11340.9 (i) of CAPA states that this chapter does not apply to a number of matters, including a regulation that "does not apply generally throughout the state," it does apply however, under Section 11353, to "any policy, plan or guideline" that (1) the State Water Resources Control Board has adopted after June 1, 1992, or (2) that a court determines is subject to this part. In other words, Section 11353 is a specific exception to the more general exception under 11340.9 (i).

Section 11353 goes on to say that the policies, plans and guidelines adopted by the SWRCB are not effective until their regulatory provisions are approved by the Office of Administrative Law. Indeed, even your agency admitted in its Forward to the Tulare Lake Basin Water Quality Plan (2nd ed., 1995) that the Tulare Lake Basin Plan needed to be adopted by the SWRCB in order to be effective, and that it then had to be approved by the Office of Administrative Law (under CAPA). Even though the Tulare Lake Basin Plan is regional in nature, once adopted by the SWRCB, your agency recognized that it became subject to the requirements of CAPA. This is not illogical since the entire State has an interest in and is affected by how the waters of the Central Valley Basin, including the Tulare Lake Basin, are regulated. Excess surface waters from these basins flow to the San Francisco Bay, for example.

Paragraph 14, page 3, of the 2007 Order recites that it is implementing SWRCB Resolution 68-16 and the Tulare Lake Basin Plan, among other things. [Has the SWRCB adopted the 2007 Order?] It makes no logical sense to assert that the 2007 Order is not a culmination and integral part of these State adopted Plans, and therefore is not subject to the requirements of CAPA. Unless your agency can show that the provisions of the Order were processed in accordance with CAPA provisions, the Order is invalid and not effective.

It is also our contention that we can file an action for declaratory relief with the superior court, under Sections 11350 and 11353, under which we ask the court whether this Order is a "regulation" that should be subject to the requirements of CAPA. Given the significant adverse impact that the Order has on small dairies, we believe a court will be inclined to find a way to declare that the Order is subject to CAPA requirements.

In response to the Prosecution Team Rebuttal Argument and Rebuttal Evidence Jim Sullins, Executive Director UC Cooperative Extension Tulare County, Derbin Pedro (dairyman), Denny Murphy (dairyman), and I met with Pamela Creedon on February 26, 2009 and pleaded with her that small dairies could not afford to comply with the regulations.

Soapy Tompkins (CVRWQB) and Scott Spear, President of the Sequoia Riverlands Trust, visited our dairy on February 17, 2009 and I again stated that small dairies could not afford to comply.

I spoke with Mike Chrisman at least twice and no one ever informed me that we had any opportunities to petition the Order to the State Water Board up until May 23, 2009. I feel that all of these parties had both a legal and moral obligation to inform us of our remedies.

In response to the claim that my challenging the legality of the Order is improper due to previous acquiescence of the very reports that we are now challenging is ridiculous. I'm sure that Rosa Parks rode buses many times in compliance prior to her historical refusal to comply with unfair government policy.

In closing, let me make some final grim observations. It is extremely troublesome that the Agency's staff prepared the Complaint but purposely chose to not mention the letters we wrote prior to the filing deadline and thereafter. The Complaint also failed to mention that we had often requested a hearing before the regional board. Thus, the Complaint is inherently deceptive and prejudicial. This only serves to bolster our contention that your Agency abuses its legal and discretionary powers.

Most dairymen, me included, appreciate the resources under our stewardship. We care about the environment and deeply respect nature. **We drink the water;** our families will live on this land for generations. Classifying dairy farmers as ungrateful, apathetic enemies to water quality is flagrant falsehood and injustice.

I, like hundreds of other dairymen, have worked a lifetime to build my dream. We work with our animals and land to produce high-quality milk. However, the unreasonable expense of reporting requirements is forcing us from business. The Regional Water Quality Control Board (RWQCB) has imposed "country club" regulations-- only dairymen with the resources to comply will be allowed to stay in business. I agree that polluters should be punished. However, the RWQCB's distinction between 'compliers' and 'non-compliers' has absolutely nothing to do with water quality. Small family dairies like ours, which has **a verified record of outstanding water quality**, are being eliminated because of lack of funds. Who did the economic analysis? Were small dairies explicitly examined? Has anyone considered sustainable agriculture?

All reports requested by the RWQCB have already been completed and included in a letter with attachments dated April 7, 2003 from Ken Jones. Every water sample from our dairy has analyzed well below levels allowed by the state of California.

The quality of our water is a non-issue. Any request that I have made to the regional board has been reasonable. However, I continue to be denied due process and other rights guaranteed under the U.S. Constitution. It is impossible to receive a fair hearing: the RWQCB makes all the rules, selects the judges, decides which evidence can be allowed, and even requires our testimony before the hearing.

The media has portrayed all dairymen as polluters and has given the RWQCB a free hand to enforce their cumbersome regulations. The RWQCB knows that no one has the resources to challenge its authority, and its actions exploit this understanding. Even politicians are afraid of the RWQCB.

For me, there is a striking similarity between the unfair treatment of dairymen by the RWQCB and the U.S. government's historical conduct toward American Indians. Most tribes lived in peaceful coexistence with settlers, but the government, complicit with powerful media, convinced the public that this "dangerous threat" should be forcefully confined to reservations. Native people were blamed, denied fair hearings, and their voices were silenced. Thousands of Native Americans were slaughtered, their land taken, and their cultures destroyed. Any tribes who offered resistance met extreme hostility and were forced into submission. Their spirits were broken.

Today, injustice takes a new form, but we still find falsified claims of some generalized "threat to America's future" blindly assigned with so-called "cooperation" of persecution and one-sided power. The RWQCB holds all the cards. They have labeled us a "polluter," made it impossible for our small dairy to comply with their regulations, and created a very unfair hearing process.

Once small family dairies are gone, they are gone forever. I can't help but feel much the same as early American Indians as the RWQCB pushes us into submission and obsolescence, breaking our spirit. We ask you to consider our position and

evaluate our story. Besides a deep investment our land and community, we have a
—demonstrable commitment to water quality and evidence for the health of this precious
resource under our management.

Sincerely,

Jim Sweeney

1 notice of those documents, which essentially indicate that
2 all Board members are currently authorized to serve.

3 STAFF COUNSEL MAYER: That's correct.

4 And I have one final issue, and that is a letter
5 that came in on October 2nd from Mr. Sweeney. And it was
6 a letter proposing testimony to be introduced at today's
7 meeting. And I'm recommending that the Board not accept
8 this late letter into the record. The hearing
9 procedure -- the hearing itself took place on July 14th.
10 And the issues in this letter -- the proposed testimony
11 should have been given at the July 14th hearing. In fact,
12 a very similar letter -- written letter was accepted into
13 the record prior to that hearing. And that letter is
14 dated July 8th. And that letter is in the record today.
15 So because this letter should have been introduced prior
16 to today at the July 14th hearing, I'm recommending that
17 the Board not accept this letter into the record.

18 CHAIRPERSON HART: Hearing unless I hear an
19 objection, we will decline to accept it into the record.

20 Seeing none, it is not included in the record.

21 STAFF COUNSEL MAYER: Okay. That's great. Those
22 were the four legal issues that I wanted to raise.

23 CHAIRPERSON HART: Excellent. Thank you.

24 We can proceed with the staff record.

25 (Thereupon an overhead presentation was presented

1 of itself does not require you to change the ACL. But you
2 have the discretion to do that.

3 And with that, I would like to enter this
4 presentation and the Power Point into the record of this.
5 And I'll be happy to answer any questions. And then we
6 would proceed with Mr. Sweeney's testimony.

7 CHAIRPERSON HART: Thank you, Ken.

8 Do we have any Board questions right now?

9 Seeing none, Mr. Sweeney, would you like to come
10 forward to testify?

11 MR. SWEENEY: My name is Jim Sweeney, and my wife
12 and I are the persons with which this complaint has been
13 brought. I'm here not because I'm charged with being a
14 polluter; I'm here because I'm charged with not filing the
15 annual reports that were due on July 1st, 2010. In other
16 words, I'm a paper violator.

17 You probably have not been told by your staff
18 that three months before these reports were due on July
19 1st, 2010, I asked them to schedule a hearing before you
20 so that I could ask a one-year extension of your filing
21 deadline due to financial necessity.

22 As probably learned, the dairy industry suffered
23 through a dreadful period during 2008 and 2009 when,
24 because of low milk prices and high feed costs, dairies
25 were losing money at an enormous rate and had to depend on

1 their bank to loan money to make up the shortfall.

2 My wife and I operate a dairy in which we milk
3 less than 200 cows. Our bank loans -- less than 300 cows.
4 Our bank loans were classified as distressed. We were
5 forced to hire an attorney just so we could stay in
6 business.

7 STAFF COUNSEL OKAMOTO: Madam Chair, if I can
8 object.

9 My understanding that the scope of Mr. Sweeney's
10 testimony today would be limited to the documents that he
11 submitted on September 30th. So I --

12 CHAIRPERSON HART: With respect to the size of
13 the dairy.

14 STAFF COUNSEL OKAMOTO: Correct. With respect to
15 compliance rates and herd size data. That was also
16 submitted by him on September 30th.

17 CHAIRPERSON HART: That's duly noted.

18 Mr. Sweeney, do you understand --

19 MR. SWEENEY: Can I make an objection to her
20 objection? Because on the website that you have, all your
21 stuff was presented, but none of mine was. And I brought
22 that to the attention of Mr. Landau. And he corrected it
23 for a day. And then I had contacted him and said, you
24 know, that some of the stuff that was on there was
25 actually dismissed earlier, that it wasn't allowed. And

so then when I went last night, there was nothing on there
again. So it was just on the website, you know. And it's
in his e-mail. And it was to all you guys. It had just
all your stuff, but none of my evidence.

CHAIRPERSON HART: Mr. Sweeney, I understand your
concern, but I assure you that each and every Board member
sitting here right now has read and reviewed all of the
documentation that you have submitted. We have listened
to the hearing tapes. We are fully advised of what your
position is.

And in the interest of moving forward and dealing
with this matter, please assume and know -- actually, you
would be presuming that we understand what your concerns
are with respect to the process. And we are essentially
giving you a second chance that actually no one else has
even requested with respect to presenting evidence on the
size of dairies that may have been impacted.

So we are completely -- we understand the
financial situation that you and your wife are in, and we
actually are very sorry about that. We do need you to
present the evidence on the limited scope that you have
before us though. So do you understand?

MR. SWEENEY: Okay. I understand.

CHAIRPERSON HART: Excellent.

MR. SWEENEY: Okay. Could you put that slide

: Sweeney

From: Ken Landau <klandau@waterboards.ca.gov>**To:** Japlus3 <japlus3@aol.com>**Cc:** Alex Mayer <AMayer@waterboards.ca.gov>; Dale Essary <dessary@waterboards.ca.gov>; Kiran Lanfranchi-Rizzardi <klanfranchi@waterboards.ca.gov>; Mayumi Okamoto <MOkamoto@waterboards.ca.gov>**Subject:** Re: Sweeney**Date:** Tue, Oct 25, 2011 2:02 pm**Attachments:** Sweeney_Oct_2011_Board_Meeting_PowerPoint.pdf (150K), longley_confirmation_Aug_2006.pdf (440K), hart_confirmation_-_Sept_2009.pdf (267K), odenweller_appointment_Jan_2008.pdf (81K), odenweller_confirmation_Sept_2008.pdf (168K), hoag_appointment_december_2010.pdf (114K), meraz_confirmation_aug_2011.pdf (165K)

: Sweeney,

am responding to your email to Kiran Lanfranchi dated 13 October 2011.

The written testimony sent with your email cannot be entered into the record of the hearing, as the date for submittal of written evidence had passed prior to the hearing and the Chair did not specifically approve the late submission. Only what you actually said during the hearing is part of the record.

The court reporter is being asked to prepare a written transcript of the hearing, but that document is not usually available from the court reporter for a few weeks. I will inform you when the transcript becomes available. In the meantime, we can mail you an audio recording of the Board meeting (saved to a compact disk) if you would like. If you would like a copy of the recording, please let me know.

The documents made available to Board members for their consideration at the 13 October hearing include the following. Except for the attached files, you should already have all of these documents.

- a. All agenda materials from the 14 July Panel Hearing in Fresno
- b. The court reporter transcript of the 14 July Panel hearing, which was sent to Board members Hart and Hoag, who were not at the 14 July Panel hearing.
- c. Your 8 July 2011 Written Testimony prepared for the July 14 Panel Hearing
- d. Items (a)(15), (a)(16), and (a)(1) through (a)(13) as referenced in your June 13, 2011 letter to the Advisory Team (accepted into the record by Hearing Panel Chair Longley as documented in Alex Mayer's June 30, 2011 email)
- e. Your June 30 evidentiary submission (accepted into the record as documented by Ken Landau's July 7, 2011 email).
- f. Your 30 September 2011 Written Testimony prepared for the October 13 Board meeting
- g. Your 30 September 2011 comment letter to Alex Mayer (accepted into the record by the Board Chair at the October 13 board meeting)
- h. All agenda materials for the 13 October Board meeting in Rancho Cordova
 - i. The Advisory Team Power Point slides from the October 14 Panel Hearing (copy attached)
 - j. Documents related to the legal status of individual Board members handed out at the Board meeting (copies of which are attached),
 - k. Board meeting handouts of the PowerPoint slides of dairy compliance rates by the Prosecution and dairy attrition rates from you (given to you at Board meeting)

en Landau

ATTACHMENTS:

Advisory Team PowerPoint slides from 12 October 2011 Board meeting [item 3) i., above]
 Documents on legal status of individual Board members [item 3) j., above]

Kenneth D. Landau
 Assistant Executive Officer

1 BOARD MEMBER HOAG: Before you take --

2 CHAIRPERSON HART: Yes, Lyle.

3 BOARD MEMBER HOAG: Before the voice vote, a
4 comment.

5 I've heard no objection to this Order, nor to the
6 achievement of its objectives. This is a vexing case.
7 And part of the actions we heard in testimony occurred
8 before my tenure on the Board. On that basis, I'm going
9 to abstain.

10 CHAIRPERSON HART: Okay. All those -- so we will
11 take the voice vote now. All those in favor say aye.

12 (Ayes)

13 CHAIRPERSON HART: Any opposed?

14 And we do have an abstention, I understand, from
15 Member Hoag. So the motion passes.

16 (Whereupon Agenda Item 10 concluded at
17 10:30 a.m.)

18

19

20

21

22

23

24

25

CVWItem7[1]

STATE OF CALIFORNIA
CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD
PARTIAL TRANSCRIPT
AGENDA ITEM 7

CENTRAL VALLEY REGIONAL
WATER QUALITY CONTROL BOARD
11020 SUN CENTER DRIVE, #200
RANCHO CORDOVA, CALIFORNIA

THURSDAY, AUGUST 2, 2012
8:41 A.M.

TIFFANY C. KRAFT, CSR
CERTIFIED SHORTHAND REPORTER
LICENSE NUMBER 12277

CALIFORNIA REPORTING, LLC
52 LONGWOOD DRIVE
SAN RAFAEL, CA 94901
(415) 457-4417

11 and not 229 days, were considered for the calculation of
12 the liability.

13 --o0o--

14 DAIRY COMPLIANCE UNIT SENIOR ENGINEER: The
15 methodology also considers adjustment factors for
16 culpability, cleanup and cooperation, and history of
17 violations. Adjustment factors for culpability of cleanup
18 and cooperation were each assigned a value of one, which
19 neither increases or decreases the fine.

20 Regarding culpability, the discharger is culpable
21 because of the discharger's continued failure to submit
22 the required report.

23 Regarding cleanup and cooperation, the violation
24 is a non-discharge violation, and thus cleanup and
25 cooperation are not pertinent issues.

16

1 --o0o--

2 DAIRY COMPLIANCE UNIT SENIOR ENGINEER: Regarding
3 history of violations, the discharger was given the score
4 of 1.5, which increase the fine. The Central valley water
5 Board adopted an administrative civil liability order last
6 year for the discharger's failure to submit the 2009
7 annual report and failure to submit a waste Management
8 Plan as required by the General Order and the MRP. The
9 order sited a total liability amount of \$11,400 against

10 the discharger for the two violations. The enforcement
11 policy requires that a minimum multiplier of 1.1 be used
12 when there is a history of repeat violations.

13 --o0o--

14 DAIRY COMPLIANCE UNIT SENIOR ENGINEER: Central
15 valley water Board staff considered that the discharger
16 has the ability to pay the total amount of liability
17 because the discharger owns the property and thus has a
18 significant asset and the discharger continues to operate
19 as a dairy and, thus, has an operating business that has
20 the potential to generate income.

21 In addition, the discharger has not demonstrated
22 an inability to pay the liability amount. The fact sheet,
23 which was sent to the discharger with the complaint,
24 outlines the types of documentation that the discharger
25 may submit to demonstrate an inability to pay. The

9

17

1 discharger was given the opportunity to submit this
2 information but did not do so.

3 --o0o--

4 DAIRY COMPLIANCE UNIT SENIOR ENGINEER: The
5 liability calculation methodology also takes into account
6 other factors as justice may require. Staff has incurred
7 costs of investigation and enforcement for issuing the
8 complaint in the amount of \$1800. Additional staff costs

9 have been incurred in preparation of taking this matter to
10 hearing, but have not been included in the complaint as
11 drafted.

12 The economic benefit for the violation is the
13 estimated cost to complete the required technical report.
14 At the time of the violation, it is estimated that the
15 discharger experienced an economic benefit of MS. OLSON
16 approximately \$2500. This represents the avoided cost of
17 completing the 2010 annual report for a typical dairy,
18 including sampling and analytical costs.

19 --oOo--

20 DAIRY COMPLIANCE UNIT SENIOR ENGINEER: By using
21 the liability calculation methodology, the prosecution
22 team proposes a total liability of \$7,650. I will now
23 turn the presentation over to staff counsel who has a few
24 slides to present for your consideration.

25 MS. HOWARD: Good morning, Chairman Longley and

♀

18

1 members of the Board.

2 My name is ELLAN HOWARD. I'm counsel for the
3 prosecution team. I will be presenting the prosecution
4 team's legal arguments and responses to the discharger's
5 evidence and policy statements. A copy of Mr. Sweeney's
6 evidence and policy statements as well as our rebuttal
7 brief has been provided in your agenda packets.

8 --oOo--

9 MS. HOWARD: The discharger's evidence submission
10 contained discussion about many issues related to its
11 compliance with the Dairy General Order.

12 I'd like to remind the Board that the only
13 alleged violation before you today is the discharger's
14 failure to submit the 2010 annual report. The discharger
15 has petitioned the 2011 enforcement order.

16 Last October, this Board imposed an
17 administrative civil liability in the amount of \$11,400
18 based on the discharger's failure to submit the 2009
19 annual report and the waste Management Plan. The State
20 Board is reviewing the discharger's petition but has not
21 made a decision about the merits of its arguments.

22 The Regional Board has also requested for a
23 monitoring well installation and sampling plan, or MWISP,
24 to be submitted by the discharger. This is also
25 referenced in the discharger's evidence packet, but is not

19

1 at issue before you today.

2 Finally, the discharger makes arguments about the
3 applicability of the Dairy General Order to small dairies
4 throughout the Central valley region. These arguments are
5 untimely, as I will explain in my presentation today.

6 --oOo--

1 and those who violate them.

2 I will now turn the presentation back over to Mr.
3 Patteson for our conclusion and recommendations.

4 SENIOR ENGINEER PATTESON: By failing to provide
5 the annual report required by the Dairy General Order, the
6 discharger violated Section 13267 of the California Water
7 Code.

8 Based on the methodology for liability
9 calculation of the enforcement policy, the prosecution
10 team recommends that the Board make findings of fact and
11 conclusions of law affirming complaint number R520120542
12 for a liability amount of \$7,650.

13 A proposed administrative civil liability order
14 is included in your agenda package. I would like to
15 submit this presentation, the agenda package, and the
16 Central Valley water board files referenced in the agenda
17 package into the record.

18 This concludes our presentation, and we would be
19 happy to answer any questions.

20 CHAIRPERSON LONGLEY: Are there any questions by
21 members of the Board?

22 VICE CHAIRPERSON COSTANTINO: Yes. And I'll
23 reserve my questions about this actual case until after I
24 hear from the discharger.

25 But a couple questions on the presentation. The

1 Merced process has been brought up a couple times. Are
2 folks in Tulare County eligible for the Merced County
3 system?

4 MS. HOWARD: Yes, it's available to anyone.

5 VICE CHAIRPERSON COSTANTINO: And what is the
6 time line for the State Board to act on the preceding ACL?

7 MS. HOWARD: I can answer that question.

8 The petition by Mr. Sweeney for the previous ACL
9 was on November 9th. And by my calculations, I'll leave
10 it to the engineers in the room the correct me a total of
11 268 days has passed. And by statute, the State Board must
12 respond by 270 days.

13 LEGAL COUNSEL MAYER: Alex Mayer, advisory
14 counsel to the Board.

15 That figure may -- the 268 days starts proceeding
16 once a letter called a complete petition letter is mailed
17 out. And I would have to check my records to determine
18 whether or not the State Board has sent out such a letter.
19 But otherwise, that would be correct in terms of the 268
20 days and 270 days. Just wanted to clarify that.

21 VICE CHAIRPERSON COSTANTINO: Okay. Thank you.

22 CHAIRPERSON LONGLEY: Any further questions?
23 Does the discharger -- Mr. Sweeney, do you wish to
24 cross-examine?

25 Mr. Sweeney: No.

1 CHAIRPERSON LONGLEY: Then Mr. Sweeney, it's your
2 time to present.

3 MR. SWEENEY: Good morning. My name is Jim
4 Sweeney. And this is my wife, Amelia. And we operate 300
5 cow dairy in Visalia, California. I'm not here accused of
6 polluting the ground water.

7 For many years, your staff in your 2007 order
8 have required us to send supply well water test results.
9 I have submitted these tests and have consistently shown
10 extremely low nitrate levels, far below the state limit of
11 10 milligrams per liter. So no, I'm not accused of being
12 a polluter.

13 The reason I was served with this complaint is
14 only because I did not file the reports that were due by
15 July 1st, 2011. These are the expensive reports that must
16 be prepared by licensed engineers.

17 For years, I regularly filed the reports required
18 by your staff. But the 2007 General Order came along and
19 required the filing of these new expensive reports. Once
20 that few of us small dairies could afford. These reports
21 called for a lot of information that your staff already
22 had in its files. They had this information from earlier
23 reports and from on site inspections made by your staff to
24 dairies in earlier years.

25 Please understand, I'm not a deadbeat. I tried

1 So I ask you now will you grant my wife and I a
2 hearing where we can fully present our evidence supporting
3 the need and appropriateness of granting us a waiver for
4 the filing of these excessively costly reports that were
5 due on July 1st, 2010, and July 1st, 2011?

6 Thank you. That's a question.

7 CHAIRPERSON LONGLEY: I think the prosecution
8 team covered that very well. That would have to be --
9 that should have happened previously during the time that
10 the general order was being formulated, and certainly it
11 cannot be part of this proceeding.

12 MR. SWEENEY: I'm not asking for one today. I'm
13 asking for one in the future.

14 CHAIRPERSON LONGLEY: Part of the general
15 order -- my answer to that would be no. When we revisit
16 that general order, it can be considered at that time.

17 VICE CHAIRPERSON COSTANTINO: I just had a
18 question.

19 What is the estimate that has been given to you
20 for the cost of this report?

21 MR. SWEENEY: 30,000.

22 VICE CHAIRPERSON COSTANTINO: So I will -- when
23 the prosecution team comes back up, I'll ask them -- or
24 you could. You had an economic benefit of 2500. I think
25 this is a key point to understand.

Tentative Orders - 2/3 August 2012 Regional Board Meeting

THURSDAY, AUGUST 2, 2012 – 8:30 A.M.
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670

(REVISED JULY 31, 2012)

Items to be considered by the Board at the 2/3 August 2012 Central Valley Regional Water Quality Control Board Meeting, organized by agenda item number.

Board Meeting Agenda, 69 KB, PDF ([PDF Info](#)) -(revised 07/26/2012)

Executive Officer's Report, 570 KB, PDF ([PDF Info](#))

ENFORCEMENT

6. Del Mar Farms, Jon Maring, Lee Del Don and Bernard N. & Barbara C. O'Neill Trust – *Consideration of Administrative Civil Liability Order*
(This item has been moved to Friday, August 3, 2012)

7. James G. and Amelia M. Sweeney, Sweeney Dairy, Tulare County – *Consideration of Administrative Civil Liability Complaint R5-2012-0542 and Recommended Administrative Civil Liability Order*

Buff Sheet, 8 KB, PDF ([PDF Info](#))

Administrative Civil Liability Complaint, 4.02 MB*, PDF ([PDF Info](#))

Administrative Civil Liability Order, 84 KB, PDF ([PDF Info](#))

Hearing Procedures, 131 KB, PDF ([PDF Info](#))

Witness List, 6 KB, PDF ([PDF Info](#))

Evidence List, 9 KB, PDF ([PDF Info](#))

Discharger's Evidence List/Arguments, 1 MB*, PDF ([PDF Info](#))

Response to Discharger's Evidence/Arguments, 79 KB, PDF ([PDF Info](#))

Attachment 1a, 194 KB, PDF ([PDF Info](#))

Attachment 1b, 42 KB, PDF ([PDF Info](#))

Comments Received:

2011 Administrative Civil Liability Order, 31 KB, PDF ([PDF Info](#))

2011 PowerPoint Presentation, 111 KB, PDF ([PDF Info](#))

Compliance by Dairy Size Table, 13 KB, PDF ([PDF Info](#))

Certified Mail Receipt of ACL Complaint, 43 KB, PDF ([PDF Info](#))

(AGENDA ITEMS 19 THROUGH 21, BELOW, HAVE BEEN MOVED FROM FRIDAY, AUGUST 3, 2012)



California Regional Water Quality Control Board

Central Valley Region



Justin H. Hickox
Secretary for
Environmental
Protection

Robert Schneider, Chair

Gray Davis
Governor

Fresno Branch Office

Internet Address: <http://www.swrcb.ca.gov/~rwqcb5>
1685 E Street, Fresno, California 93706-2020
Phone (559) 445-5116 • FAX (559) 445-5910

7 April 2003

Mr. James Sweeney
30712 Road 170
Visalia, CA 93292

Mr. Joseph Borges
30766 Road 170
Visalia, CA 93292

INSPECTION REPORT SWEENEY DAIRY, WDID #5D545155N01, 30712 ROAD 170, TULARE COUNTY

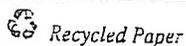
On 21 March 2003, Regional Board staff (Ken Jones) inspected your dairy to assess compliance with Title 27 of the California Code of Regulations (Title 27) and the Water Quality Control Plan for the Tulare Lake Basin-Second Edition, 1995 (Basin Plan). Mr. Sweeney met with our staff and provided access to the site and information regarding activities there. A copy of the Facilities Inspection Report is enclosed. No violations were observed.

You reported that the facility currently maintains a mixed Holstein/Jersey herd of approximately 275 milk cows, 35 dry cows, 80 large heifers (older than one year), 70 small heifers (three months to one year), 40 calves (less than three months), 7 young bulls, and 1 breeding bull for a total of 485 animal units (1,000 pound). The herd is housed in dry scrape open corrals. The facility consists of approximately 18 acres of production area and 40 acres of cropland for dairy waste application. You reported that you export all of your dry manure from the site. The cropland where dairy wastewater is applied is used to raise almonds. The confined animal area, wastewater retention ponds, and solid manure storage area were inspected during the tour. The facility appears to have adequate cropland for the agronomic application of wastewater and sufficient wastewater storage capacity (see Attachments A and B of the Facilities Inspection Report).

A water supply well was observed on the west side of the production area within 100 feet of the calf hutches. Wells in proximity to sources of pollution have the potential to act as conduits for the migration of pollutants to groundwater. California Well Standards (Department of Water Resources Bulletin 74-90) state: "When, at the approval of the enforcing agency, a water well is located closer to a source of pollution or contamination than allowed by Section 8, page 12, above (less than 100 feet from an animal enclosure, etc.), the annular space shall be sealed from ground surface to the first impervious stratum, if possible. The annular seal for all such wells shall extend to a minimum depth of 50 feet."

By 15 June 2003, demonstrate that the well observed on your facility within 100 feet of the animal enclosures has the appropriate annular seal.

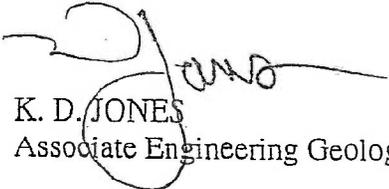
Assumptions used by Regional Board staff in calculating nitrogen and salt loading rates are based on information developed in the 1960's and 1970's. In 2000, the University of California was requested by California Environmental Protection Agency



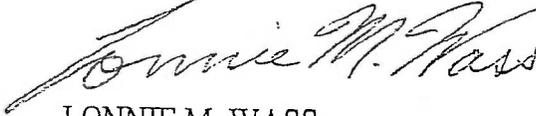
7 April 2003

the Regional and State Boards to assemble a Dairy Waste Committee of Consultants (Committee) to answer a series of questions. One of the questions was "How much nitrogen is excreted by the average lactating cow?" The Committee has reported that the average nitrogen excretion rate for lactating cows in California is significantly greater than the information provided nearly 30 years ago. The Committee also stated that it expects the salt excretion rate to increase accordingly. The Committee's work may change nitrogen and salt excretion assumptions employed in the future by both consultants and Regional Board staff to assess reasonable application rates. Title 27 of the California Code of Regulations requires that manure and wastewater be applied at rates which are reasonable for the crop, soil, climate, special local situations, management system, and type of manure. This may result in the need for the dairy to acquire more cropland for waste application, or a reduction of the herd size. You may also demonstrate that the nutrients and salts produced by the herd can be applied to cropland at reasonable rates.

If you have any questions regarding this matter, please call Ken Jones at (559) 488 - 4391.



K. D. JONES
Associate Engineering Geologist



LONNIE M. WASS
Supervising WRC Engineer
RCE No. 38917

DAS:kj

Enclosure

cc: Tulare County Resource Management Department; Visalia
Tulare County Health & Human Services Agency, Visalia

OFFICE NO 5F

FACILITIES INSPECTION REPORT

INSPECTOR: JONESK

SWRCB 001 (REV.5-91)

Program Type: _____

| | | |
|---|--|---|
| 5D545155NO1 IS NUMBER | Joseph Borges NAME OF AGENCY OR PARTY RESPONSIBLE FOR DISCHARGE | Sweeney Dairy NAME OF FACILITY |
| NPDES NUMBER | 30766 Road 170 AGENCY STREET | 30712 Road 170 FACILITY STREET |
| (YY) (MM) (TYPE) SCHEDULED INS. DATA | Visalia, CA 93292- AGENCY CITY AND STATE | Visalia, CA 93292- FACILITY CITY AND STAT |
| | Mr. Joseph Borges AGENCY CONTACT PERSON | Mr. Jim Sweeney ONSITE FACILITY CONTACT PERSON |
| 030321 (YYMMDD) ACTUAL INS. DATE | (559) 594-4398 AGENCY PHONE NO. | (559) 594-5511 FACILITY PHONE NO. |

S Inspection agency (State = S, State / EPA Joint = J)

N If this inspection is a Compliance Inspection of an NPDES facility, send a copy of this report to SWRCB's Division of Water Quality, Program Support Unit

INSPECTION TYPE (Check One)

- A1 "A" type compliance -- Comprehensive inspection in which samples are taken. (EPA Type S)
- B1 "B" type compliance -- A routine nonsampling inspection. (EPA Type C)
- 02 Noncompliance follow-up -- Inspection made to verify correction of previously identified violation.
- 03 Enforcement follow-up -- Inspection made to verify that conditions of an enforcement action are being met.
- 04 Complaint -- Inspection made in response to a complaint.
- 05 Pre-requirement -- Inspection made to gather info. relative to preparing, modifying, or rescinding requirements.
- Miscellaneous -- Any inspection type not mentioned above.

If this is an EPA inspection not mentioned above, please note type.
(e.g. -- biomonitoring, performance audit, diagnostic, etc.)

(Type)

N Were VIOLATIONS noted during this inspection? (Yes/No/Pending Sample Results)

N Was this a Quality Assurance-Based Inspection? (Y/N)

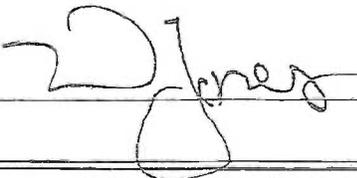
N Were bioassay samples taken? (N = No) If YES, then S = Static or F = Flowthrough

INSPECTION SUMMARY (REQUIRED) (100 character limit)

Routine dairy inspection for compliance with Title 27 and the Tulare Lake Basin Plan.

INSPECTOR'S DATA:

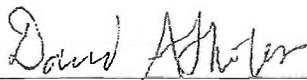
Staff ID JONESK

SIGNATURE 

DATE

4/07/03

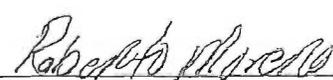
For Internal Use: Reviewed by: (1)



(2)



(3)


Reg. WDS Coordinator

WDS Data Entry Date: 4/16/03

Regional Board File Number: _____

Inspection ID

2569

FACILITIES INSPECTION REPORT

SWRCB 001 (REV.5-91)
Page 2

VIOLATION (IF APPLICABLE)

VIOL (A-G): _____ (See pages IK05.0 and IK05.1 of the Micro Waste Discharger System Users Manual)

Date Violation Occurred (YYMMDD): _____ Date Violation Determined (YYMMDD): _____

DESCRIPTION (200 CHARACTER LIMIT): _____

EPA SUGGESTED INSPECTION CHECKLIST

(S= Satisfactory, M= Marginal, U= Unsatisfactory, N= Not Evaluated)

| | | | |
|-------------------------------|--------------------------------|-------------------------------|-------------------------------------|
| <u>N</u> Permit | <u>N</u> Flow Measurement | <u>N</u> Pretreatment | <u>S</u> Operations and Maintenance |
| <u>N</u> Records/Reports | <u>N</u> Laboratories | <u>N</u> Compliance Schedules | <u>N</u> Sludge Disposal |
| <u>N</u> Facility Site Review | <u>N</u> Eff./Receiving Waters | <u>N</u> Self-Monitoring | <u>N</u> Other |

3 Overall Facility Operation Evaluation (5= Very reliable, 3= Satisfactory, 1= Unreliable)

HISTORICAL INFORMATION

| MOST RECENT ORDERS | MOST RECENT INSPECTIONS: | | | MOST RECENT VIOLATIONS: | |
|-----------------------------|--------------------------|------|-------------|-------------------------|------|
| ORDER NO. DATE ADOPTED TYPE | DATE | TYPE | VIOLATIONS? | VIOL. TYPE | DATE |
| | 3/21/03 | B1 | N | | |

ADDITIONAL COMMENTS, SPECIAL INSTRUCTIONS, ITEMS FOR FOLLOWUP ON FUTURE INSPECTIONS, NOTES, ETC. (Attach additional pages, if necessary)

On 21 March 2003, I (Ken Jones) inspected the dairy to assess compliance with Title 27 of the California Code of Regulations (Title 27) and the Water Quality Control Plan for the Tulare Lake Basin-Second Edition, 1995 (Basin Plan). Mr. Sweeney, facility operator, met with me and provided access to the site and information regarding activities there. No violations were observed.

Mr. Sweeney reported that the facility currently maintains a mixed Holstein/Jersey herd of approximately 275 milk cows, 35 dry cows, 80 large heifers (older than one year), 70 small heifers (three months to one year), 40 calves (less than three months), 7 young bulls, and 1 breeding bull for a total of 485 animal units (1,000 pound). The herd is housed in dry scrape open corrals. The facility consists of approximately 18 acres of production area and 40 acres of cropland for dairy waste application. Mr. Sweeney reported that all dry manure is exported from the site. The cropland where dairy wastewater is applied is used to raise almonds. The confined animal area, wastewater retention ponds, and solid manure storage area were inspected during the tour. The facility appears to have adequate cropland for the agronomic application of wastewater and sufficient wastewater storage capacity (see Attachments A and B).

ATTACHMENT 1 A
NUTRIENT AND IRRIGATION WATER MANAGEMENT PLANS
(Fact Sheet No. 4)

SWEENEY DAIRY
30712 ROAD 170
TULARE COUNTY

Holstein Herd Based on data collected during routine inspection on 3/21/03

Table 1. Herd Description & A.U.

| Animal | Factor | Freestalls | | | Flushed Corrals | | | Scraped Corrals | | | Totals |
|----------------------------|--------|------------|----------|----------|-----------------|------------|------------|-----------------|--|------------|--------|
| | | Head | A.U. | Head | A.U. | Head | A.U. | | | | |
| Milk Cows | 1.40 | 0 | 0 | 0 | 0 | 275 | 385 | | | 275 | |
| Dry Cows | 1.12 | 0 | 0 | 0 | 0 | 35 | 39 | | | 35 | |
| Bred Heifers | 1.02 | 0 | 0 | 0 | 0 | 0 | 0 | | | 0 | |
| Heifers (1 yr to breeding) | 1.02 | 0 | 0 | 0 | 0 | 1 | 1 | | | 1 | |
| Calves (3mo - 1yr) | 0.49 | 0 | 0 | 0 | 0 | 80 | 39 | | | 80 | |
| Baby Calves | 0.29 | 0 | 0 | 0 | 0 | 70 | 21 | | | 70 | |
| Breeder Bulls | 1.50 | 0 | 0 | 0 | 0 | 40 | 56 | | | 40 | |
| Young Bulls | 1.02 | 0 | 0 | 0 | 0 | 7 | 7 | | | 7 | |
| Subtotal = | | 0 | 0 | 0 | 0 | 508 | 485 | | | 508 | |

Table 2. Calculation of Nitrogen Loading (minimum retention period of 30 days).

| Description | Value from Table 1 | Liquid Waste Factor | Liquid Waste Nitrogen | Solid Waste Factor | Solid Waste Nitrogen |
|-------------------------------|--------------------|---------------------|-----------------------|--------------------------------|----------------------|
| Total Freestall AU | 0 | 0.8*0.45*0.25*365 | 0 | 0.2*0.45*0.25*365 | 0 |
| Freestall Milk Cows | 0 | 0.8*0.11*0.25*365 | 0.0 | 0.2*0.11*0.25*365 | 0 |
| Flushed Corral AU | 0 | 0.6*0.35*0.25*365 | 0 | 0.4*0.45*0.25*365 | 0 |
| Flushed Corral Milk Cows | 0 | 0.6*0.11*0.25*365 | 0 | 0.4*0.11*0.25*365 | 0 |
| Scraped Corral Milk Cows | 385 | 0.1*0.56*0.25*365 | 1967.35 | 0.9*0.56*0.25*365 | 17706.15 |
| Scraped Corral AU - Milk Cows | 100 | | | (AU-Milk Cows)*1*0.45*0.25*365 | 4106 |
| TOTALS (lbs of N) | | | 1967 | | 21812 |

Total Head= 508
Total AU= 485

Tables 1 and 2 can be used to estimate the amount of nitrogen available to crops from manure produced at a dairy. Table 1 is used to calculate the Animal Units (1,000 lbs each) at the dairy. Table 2 is used to estimate the nitrogen loading if the manure is applied to cropland. An alternate and superior way to evaluate the nitrogen loading is to have the holding pond contents and manure stockpiles analyzed periodically and then use the reported nutrient values along with the wastewater and manure application rates to determine the nutrient loading rate.

Notes:

- 1 Animal units (AU) are calculated by multiplying the number of head by the appropriate factor.
- 2 The following assumptions used calculating nitrogen values are consistent with assumptions used by staff in Merced County:
The animals are housed for 365 days/year, the nitrogen excretion rate is 0.56 lbs/day for milk cows and 0.45 lbs/day for other cows; 80% and 60% of the manure in freestalls and flushed corrals, respectively, is handled as a liquid. For milk cows in dry corrals or where stalls are scraped, 10% of the manure is in wastewater at the milk barn. When wastewater held less than 30 days is applied to cropland there is a 50% loss of nitrogen, and when wastewater held more than 60 days is applied to cropland, there is a 75% loss of nitrogen. There is a 75% loss of nitrogen from storage and application of dry manure. These values are based on various studies and reports; however, the values may be modified in the future as new information becomes available.
- 3 For Guernseys and Holsteins, use adjusted values.

Table 3. Cropland Nitrogen Requirement

| Crop | Yield (tons) | lbs/acre | Field Acres First Crop | Field Acres Second Crop | Field Acres Third Crop | Nitrogen Requirement |
|---------------------------|--------------|----------|------------------------|-------------------------|---------------------------|----------------------|
| Alfalfa | 8 | 450 | 0 | 0 | 0 | 0 |
| Almonds | 1.5 | 200 | 40 | 0 | 0 | 8000 |
| Barley | 2.5 | 160 | 0 | 0 | 0 | 0 |
| Bermudagrass | 4 | 225 | 0 | 0 | 0 | 0 |
| Bromegrass | 5 | 220 | 0 | 0 | 0 | 0 |
| Clowegrass | 6 | 300 | 0 | 0 | 0 | 0 |
| Corn (grain) | 5 | 240 | 0 | 0 | 0 | 0 |
| Corn (silage) | 30 | 250 | 0 | 0 | 0 | 0 |
| Cotton (lint) | 0.75 | 180 | 0 | 0 | 0 | 0 |
| Grain sorghum | 4 | 250 | 0 | 0 | 0 | 0 |
| Oats | 1.6 | 115 | 0 | 0 | 0 | 0 |
| Orchardgrass | 6 | 300 | 0 | 0 | 0 | 0 |
| Peanut | 15 | 50 | 0 | 0 | 0 | 0 |
| Saltwater | 2 | 200 | 0 | 0 | 0 | 0 |
| Sorghum-wheat | 8 | 225 | 0 | 0 | 0 | 0 |
| Sugar Beets | 30 | 255 | 0 | 0 | 0 | 0 |
| Tomatoes | 30 | 180 | 0 | 0 | 0 | 0 |
| Timothy | 4 | 150 | 0 | 0 | 0 | 0 |
| Wheat | 7 | 200 | 0 | 0 | 0 | 0 |
| Wheat | 3 | 175 | 0 | 0 | 0 | 0 |
| TOTAL N (lbs/year) | | | 40 | 0 | Total N (lbs/year) | 8000 |

Evaluation of Nutrient Requirements: Using the total pounds of nitrogen available value from Table 2 and the total nitrogen requirements value from Table 3, an initial determination can be made as to the relationship between nitrogen availability and nitrogen need and whether or not it is necessary to export manure or to import fertilizer. As with any farming operation, periodic measurements of nitrogen in cropland and/or crops should be made in order to better determine nutrient requirements for optimum yield.

Table 4. Preliminary Nitrogen Balance

| Description | Wet | Dry |
|-------------------|-------------|---------------|
| Crop Requirement | 8000 | 6003 |
| Nitrogen Produced | 1967 | 21812 |
| Balance | 6033 | -15780 |

Needed Acreage (Wet) 0
Needed Acreage (Dry) 37

Table 5. Salt Production Calculation

| Description | Value from Table 1 | Liquid Waste Factor | Liquid Waste Salts | Solid Waste Factor | Solid Waste Salts |
|-------------------------------|--------------------|---------------------|--------------------|--------------------|-------------------|
| Total Freestall AU | 0 | 0.6*1.28*365 | 0 | 0.2*1.28*365 | 0 |
| Flushed Corral AU | 0 | 0.6*1.28*365 | 0 | 0.4*1.28*365 | 0 |
| Scraped Corral Milk Cows | 385 | 0.1*1.28*365 | 17587.2 | 0.9*1.28*365 | 161884.8 |
| Scraped Corral AU - Milk Cows | 100 | | | 1.0*1.28*365 | 46720 |
| TOTALS (lbs salt/year) | | | 17587 | | 208606 |

Total salts/year (wet + dry) = 226593

Table 6. Cropland Salt Loading Capacity

| Description | Acres | Salt Loading Criteria (lbs/acre/year) | Maximum Salt Loading Capacity (lbs/year) |
|---|-------|---------------------------------------|--|
| Single Cropped Acreage (Available for wet & dry applications) | 40 | 2000 | 80000 |
| Double Cropped Acreage (Available for wet & dry applications) | 0 | 3000 | 0 |
| Single Cropped Acreage (Available to dry applications only) | 0 | 2000 | 0 |
| Double Cropped Acreage (Available to dry applications only) | 0 | 3000 | 0 |
| Total Salt Loading Capacity (lbs/year) = | | | 80000 |

Table 7. Preliminary Salt Balance

| Description | Wet | Dry |
|------------------|--------------|----------------|
| Crop Requirement | 80000 | 62013 |
| Salts Produced | 17987 | 208606 |
| Balance | 62013 | -146593 |

Additional Double Cropped Acreage Needed for Wet Waste 0
Additional Double Cropped Acreage Needed for Dry Waste 49

Quantity of Manure To Be Exported Off-Site If Additional Cropland Is Not Available

Manure to total all as per NRCS ANR-17, p. 4-8 (modified).
Wet/AU = 850 @ 87.5% moisture; Dry Manure % moisture = 32%
AU*(850)(0.125)(0.875)/2000+moist = 663 tons @ moist = 30%

Reduced by: 0 Animal Units

WASTEWATER STORAGE VOLUME CALCULATIONS

SWEENEY DAIRY, 30712 ROAD 170, TULARE COUNTY

| VOLUME FORMULA | | RAINFALL AND EVAPORATION INFORMATION | | | | | | | | | | | |
|--|--|--|------------|--------------------|-------|-----------------|-------|--|---------------|-------------------------------|---------|----------------------|-----------|
| d = depth of pond | | B1 = (LxW) | | Tulare | | Rainfall (in.) | | Unpaved (in.) | | Evaporation (in.) | | | |
| L = Length | $M = \frac{1}{16} \cdot (L \cdot S^2) \cdot (W \cdot (d \cdot S^2))$ | 25-yr, 24-hr | | 2.2 | | 1.44 | | 6.58 | | | | | |
| W = Width | $M = \frac{1}{16} \cdot (S^3) \cdot (W \cdot (S \cdot d))$ | 120 days (Dec-Mar) | | 6 | | 0.79 | | | | | | | |
| S = Slope (ft/v) | | | | | | | | | | | | | |
| Volume = $\frac{1}{16} \cdot d^3 \cdot (B1 + 4M + B2)$ | | | | | | | | | | | | | |
| STORAGE CAPACITY | | | | | | | | | | | | | |
| NE Pond (triangle) | | | | | | | | | | | | | |
| Dimensions | Base | Height | Depth (ft) | Slope (ft:v) | B1 | B2 | M | Volume (ft ³) | Volume (gal.) | | | | |
| With 2 ft Freeboard | 460 | 120 | 12 | 1.00 | 27600 | 20928 | 24192 | 290,592 | 2,173,779 | | | | |
| | 456 | 116 | 10 | 1.00 | 26448 | 20928 | 23638 | 236,547 | 1,769,492 | | | | |
| NE Pond (rectangle) | | | | | | | | | | | | | |
| Dimensions | Length (ft) | Width (ft) | Depth (ft) | Slope (ft:v) | B1 | B2 | M | Volume (ft ³) | Volume (gal.) | | | | |
| With 2 ft Freeboard | 580 | 35 | 12 | 1.00 | 20300 | 6116 | 13064 | 157,344 | 1,177,015 | | | | |
| | 576 | 31 | 10 | 1.00 | 17856 | 6116 | 11886 | 119,193 | 891,628 | | | | |
| Corral Area Pond | | | | | | | | | | | | | |
| Dimensions | Length (ft) | Width (ft) | Depth (ft) | Slope (ft:v) | B1 | B2 | M | Volume (ft ³) | Volume (gal.) | | | | |
| With 2 ft Freeboard | 514 | 35 | 15 | 1.00 | 17990 | 2420 | 9980 | 150,825 | 1,128,249 | | | | |
| | 510 | 31 | 13 | 1.00 | 15810 | 2420 | 8946 | 117,030 | 875,448 | | | | |
| REQUIRED STORAGE | | | | | | | | | | | | | |
| Daily Wash Water (ft ³) | 1,838 | 120 Days Wash Water (ft ³) | 220,588 | Impervious Acreage | 4.50 | Unpaved Acreage | 13.5 | Evaporation (Dec-Mar) (ft ³) | 26265 | Total Vol. (ft ³) | 470,283 | Total Vol. (gallons) | 3,517,716 |
| *Daily wash water based on 50 gal./milk cow/day with a herd of 275 milk cows | | | | | | | | | | | | | |
| Total Storage Volume (ft ³) = 472,779 | | | | | | | | | | | | | |
| Total Storage Volume (gals) = 3,536,368 | | | | | | | | | | | | | |



Central Valley Regional Water Quality Control Board

James G. & Amelia M. Sweeney
Sweeney Dairy (owner/operator)
30712 Road 170
Visalia, CA 93292

23 May 2012

RESPONSE TO GROUNDWATER MONITORING DIRECTIVE, ISSUED PURSUANT TO REVISED MONITORING AND REPORTING PROGRAM NO. R5-2007-0035, SWEENEY DAIRY, WDID 5D545155N01, 30712 ROAD 170, VISALIA, TULARE COUNTY

The subject Dairy is regulated by the Waste Discharge Requirements General Order for Existing Milk Cow Dairies, Order R5-2007-0035 (General Order), issued by the Central Valley Regional Water Quality Control Board (Central Valley Water Board or Board) on 3 May 2007. Monitoring and Reporting Program Order R5-2007-0035, revised 23 February 2011 (MRP), accompanies the General Order and contains requirements for implementing groundwater monitoring. Under the MRP, the Executive Officer has the authority to order the installation of individual groundwater monitoring wells at the Dairy.

On 4 May 2012, the Executive Officer issued you a groundwater monitoring directive (the directive) pursuant to the MRP. The directive notifies you that your Dairy is now required to obtain compliance with the groundwater monitoring requirements of the MRP. The directive informs you that to satisfy the requirement for additional groundwater monitoring, you have two options: 1) install an individual groundwater monitoring system at the Dairy; or, 2) join a representative monitoring program (RMP) that will monitor groundwater at a set of representative facilities.

Subsequent to the issuance of the directive, staff received a letter from you via email dated 11 May 2012 in response to the directive. Specifically, the letter requested an explanation for the need to install wells at the Dairy.

The directive issued to you on 4 May 2012 provides you with an explanation of the need for conducting a water quality investigation, and identifies the evidence that supports requiring the investigation. It also explains how the burden of implementing the MRP, including costs, is justified. The directive also informs you of your right to petition the directive to the State Water Resources Control Board within 30 days of its issuance to review the action in accordance with California Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following.

Attachment A to the MRP informs dairy owners/operators of the ongoing monitoring well installation and sampling plan (MWISP) process at existing milk cow dairies in the Central Valley. It specifies, "Dischargers choosing not to participate in a Representative Monitoring Program or those failing to notify the Central Valley Water Board of their decision to participate in a Representative Monitoring Program, will continue to be subject to the groundwater monitoring requirements of the Order and Monitoring and Reporting Program No. R5-2007-0035

(MRP). If necessary, the Executive Officer will prioritize these groundwater monitoring requirements based on the factors in Table 5 below.”

The Central Valley Water Board has prioritized the order that these groundwater monitoring requirements are imposed based on the factors in Table 5 of Attachment A, titled “Groundwater Monitoring Factors for Ranking Priority.” Groundwater monitoring directives have been issued to dairy farmers in phases of 100-200 dairies each year. To date, the Board has issued approximately 260 directives requiring installation of Monitoring Well Installation and Sampling Plans in six rounds. Most of the dairies that received directives have joined an approved Representative Monitoring Program. In addition, approximately 1,000 other dairies have voluntarily joined a Representative Monitoring Program. This was the final round of directives being issued by the Board. The dairy farms receiving directives in Round 6 all received comparable total scores based on the factors described in Table 5.

On 23 February 2011, the Central Valley Water Board issued a Revised MRP to allow dairymen to enroll in a Representative Monitoring Program as an alternative to submitting a site-specific MWISP. Membership in a Representative Monitoring Program is an alternative to achieve compliance with this directive without installing monitoring wells on an individual basis. The Central Valley Dairy Representative Monitoring Program is currently available to dairy farmers at a cost of \$1,500 plus \$81 per month.

The purpose of implementing groundwater monitoring at the subject Dairy is to monitor first encountered groundwater beneath the facility to determine whether the facility’s waste management practices have impacted groundwater quality. Groundwater supply wells are typically screened in deeper aquifer zones and do not necessarily reflect conditions in shallower zones. In particular, and as mentioned in your 11 May 2012 letter, any supply wells used by the Kaweah River Sub-Watershed for the purpose of monitoring groundwater quality may not be reflective of first encountered groundwater within the study area. In fact, the Kaweah River Sub-Watershed has not applied for or received approval to implement an RMP pursuant to the terms of the MRP. Likewise, groundwater quality data collected from the Dairy’s on-site supply wells do not necessarily represent the quality of first encountered groundwater beneath the Dairy.

Central Valley Water Board staff acknowledges that you have petitioned the State Water Resources Control Board to invalidate Administrative Civil Liability Order R5-2011-0068 that was adopted by the Central Valley Water Board and issued to you on 13 October 2011 for your failure to submit past due technical reports. However, your petition was not a factor in issuance of the 13267 Order and does not absolve you from continued compliance with the General Order or from potential liability for failure to do so.

If you have questions regarding this matter or would like to schedule a meeting to discuss the matter further, please contact Dale Essary of this office at (559) 445-5093 or at dessary@waterboards.ca.gov.



DOUGLAS K. PATTESON
Supervising Engineer

cc: Alex Mayer, Office of Chief Counsel, State Water Resources Control Board, Sacramento
(via email)

From: Clay Rodgers <CRodgers@waterboards.ca.gov>

To: Japlus3 <japlus3@aol.com>

Cc: jpc <jpc@dolphingroup.org>; Alex Mayer <AMayer@waterboards.ca.gov>; Doug Patteson <dpatteson@waterboards.ca.gov>

Subject: Re: Sweeney Dairy

Date: Sun, May 27, 2012 9:04 am

Dear Mr. Sweeney:

The approved representative monitoring program that covers Tulare County is the Central Valley Dairy Representative monitoring program. Their address is

CVDRMP
915 L Street, C-431
Sacramento, CA 95814

Detailed information can be viewed on the Dairy CARES website at <http://www.dairycares.com/CVDRMP/>. I have copied this e-mail to J. P. Cataviela of Dairy CARES, who can provide additional assistance if needed.

If you have any questions or need additional information, please contact me or Doug Patteson.

>>> Japlus3 <japlus3@aol.com> 5/26/2012 4:48 PM >>>

From: J.P. Cativiela <jpc@dolphingroup.org>
To: japlus3 <japlus3@aol.com>
Cc: Laura Kistner <laurak@dolphingroup.org>
Subject: RE: Sweeney Dairy

Date: Tue, May 29, 2012 10:39 am

Attachments: 4.Letterof_Intent.pdf (35K), 5.CVDRMP.Deduction.assignment.REVISED.12.13.11.pdf (28K), 3.Participation_Agrmnt.pdf (182K)

Dear Mr. Sweeney:

To join the Central Valley Dairy Representative Dairy Monitoring Program (CVDRMP), please submit a completed participation agreement and letter of intent (attached and also available at www.dairycares.com/CVDRMP)

Both of these documents need to be signed by the landowner and dairy operator if they are not the same person. A check for \$2,472 must be enclosed with the application. This covers the \$1,500 application fee and \$81/month dues from July 1, 2011 to June 30, 2012 (the deadline for joining the program was January 2011, and all late joiners are required to pay dues back to the first month of collection).

Both the Participation Agreement and Letter of Intent and payment should be mailed to:

CVDRMP
915 L Street C-438
Sacramento, CA 95814

Once your application is complete, we will notify the Central Valley Regional Water Quality Control Board that you are a CVDRMP member. To continue as a member you agree to pay monthly fees of \$81 after July 1, 2012. You have the option to be invoiced for these quarterly or to pay by Milk Check Deduction if your creamery participates in that. CDI, DFA and LOL all participate – if you ship milk elsewhere and want to check if they participate, let me know.

I strongly advise you to act promptly as the CVDRMP Board has raised the application fee as of July 1, 2012 to \$6,500.

-J.P. Cativiela
For CVDRMP
(916) 441-3318

From: dairycares@aol.com [<mailto:dairycares@aol.com>]
Sent: Tuesday, May 29, 2012 10:23 AM
To: jpc@dolphingroup.org
Subject: Fwd: Sweeney Dairy

-----Original Message-----

From: Japlus3 <japlus3@aol.com>
To: dairycares <dairycares@aol.com>
Sent: Mon, May 28, 2012 4:13 pm
Subject: Sweeney Dairy

Please forward this to JP. I need a response ASAP as we need to satisfy the CVRWQCB.
Thanks,
Jim

No virus found in this message.

Checked by AVG - www.avg.com

Version: 2012.0.2171 / Virus Database: 2425/5030 - Release Date: 05/29/12

Assessing the Impact of Animal Waste Lagoon Seepage on the Geochemistry of an Underlying Shallow Aquifer

WALT W. MCNAB, JR.,*[†]
 MICHAEL J. SINGLETON,[†]
 JEAN E. MORAN,[‡] AND BRAD K. ESSER[†]
*Environmental Restoration Division and Chemical Biology
 and Nuclear Science Division, Lawrence Livermore National
 Laboratory, P.O. Box 808, L-530, Livermore, California 94551*

Evidence of seepage from animal waste holding lagoons at a dairy facility in the San Joaquin Valley of California is assessed in the context of a process geochemical model that addresses reactions associated with the formation of the lagoon water as well as reactions occurring upon the mixture of lagoon water with underlying aquifer material. Comparison of model results with observed concentrations of NH_4^+ , K^+ , PO_4^{3-} , dissolved inorganic carbon, pH, Ca^{2+} , Mg^{2+} , SO_4^{2-} , Cl^- , and dissolved Ar in lagoon water samples and groundwater samples suggests three key geochemical processes: (i) off-gassing of significant quantities of CO_2 and CH_4 during mineralization of manure in the lagoon water, (ii) ion exchange reactions that remove K^+ and NH_4^+ from seepage water as it migrates into the underlying anaerobic aquifer material, and (iii) mineral precipitation reactions involving phosphate and carbonate minerals in the lagoon water in response to an increase in pH as well as in the underlying aquifer from elevated Ca^{2+} and Mg^{2+} levels generated by ion exchange. Substantial off-gassing from the lagoons is further indicated by dissolved argon concentrations in lagoon water samples that are below atmospheric equilibrium. As such, Ar may serve as a unique tracer for lagoon water seepage since under-saturated Ar concentrations in groundwater are unlikely to be influenced by any processes other than mechanical mixing.

Introduction

Animal waste management at dairy facilities often entails storing dairy wastewater in manure lagoons. Irrigation with such lagoon water is a common practice that utilizes readily available fertilizer for forage crops while reducing the stored wastewater volume. The transfer of anoxic lagoon water to aerated unsaturated zone soils leads to the nitrification of ammonia to nitrate, as well as the mineralization of organic nitrogen, and can impact underlying groundwater when nitrogen is added to the fields in excess of the assimilation capacity of the crops (1–3).

The impact of manure lagoon seepage on groundwater quality is a separate problem from that of fertilizer application

but is nonetheless also a groundwater protection concern. Previous studies have indicated that manure lagoons can leak at rates on the order of a few millimeters per day or more based on soil type, construction, and operation (4–10). Geochemical interactions between the seepage water and groundwater may differ from those involving fertilizer application (6, 11–13). For example, nitrate loading from the lagoon will depend on the rate of oxidation of NH_4^+ and organic nitrogen released from the lagoon that, in turn, are affected by subsurface oxidation–reduction conditions and ion exchange characteristics. Distinguishing lagoon seepage from applied manure fertilizer in monitoring wells is difficult because the multitude of possible geochemical reactions create ambiguities with respect to potential tracers.

This study has sought to understand the effects of lagoon seepage on underlying groundwater quality in the context of a putative set of geochemical reactions characterizing the formation of lagoon water as well as the interaction of lagoon water with the groundwater environment. Our study entailed evaluating water quality data collected at an anonymous dairy facility located in Kings County, CA, in the southern San Joaquin Valley (Figure 1). The dairy holds approximately 1000 cows. Three manure lagoons have been active at the dairy since the 1970s, two of which have liners with a 10% clay content while the third is unlined. The largest lagoon measures approximately 100 m × 20 m. The lagoons receive runoff water from the flushing of animal stalls with water pumped from onsite agricultural wells. In turn, lagoon water is mixed with additional pumped groundwater and applied to onsite corn and alfalfa fields. Water depth within the lagoons varies temporally, depending on site operations, but is constrained to a maximum of approximately 3 m to prevent overflow. The site climatic setting is semi-arid, with a mean annual rainfall of approximately 220 mm/year, most of it falling from November through April. The daily summer average temperature is approximately 26 °C, although maximum daytime temperatures of 35 °C are common, while daily average winter temperatures are on the order of 7 °C (14).

Groundwater is first encountered in a perched aquifer extending from depths of approximately 3–24 m, separated by an unsaturated zone from a regional aquifer below a 40 m depth. Both aquifers consist of alluvial fan deposits. Measured oxidation–reduction potentials and dissolved gas data delineate the perched aquifer into an upper, aerobic zone above a depth of approximately 11 m below the ground surface (Shallow zone) and a lower, anaerobic zone (Deep zone) subject to denitrification (13). Recharge to the perched aquifer stems from nearby unlined irrigation canals, with a mean groundwater flow direction from northwest to southeast. However, agricultural pumping dominates the shallow hydrologic system, so groundwater flow directions are spatially and temporally variable.

Experimental Procedures

Lagoon water and groundwater samples were collected during six sampling events, from the locations indicated in Figure 1, between August 2004 and May 2005. Samples were analyzed for cations (Ca^{2+} , Mg^{2+} , Na^+ , K^+ , Li^+ , and NH_4^+) and anions (NO_3^- , SO_4^{2-} , Cl^- , F^- , Br^- , PO_4^{3-} , and NO_2^-) by ion chromatography using a Dionex DX-600. pH, DO, and oxidation–reduction potential were measured in the field using a Horiba U-22 water quality parameter field meter. Dissolved inorganic carbon (DIC) concentrations were estimated in the water samples from charge imbalances and pH using the PHREEQC geochemical model. DIC was also

* Corresponding author phone: (925)423-1423; fax: (925)424-3155; e-mail: mcnab1@llnl.gov.

[†] Environmental Restoration Division.

[‡] Chemical Biology and Nuclear Science Division.

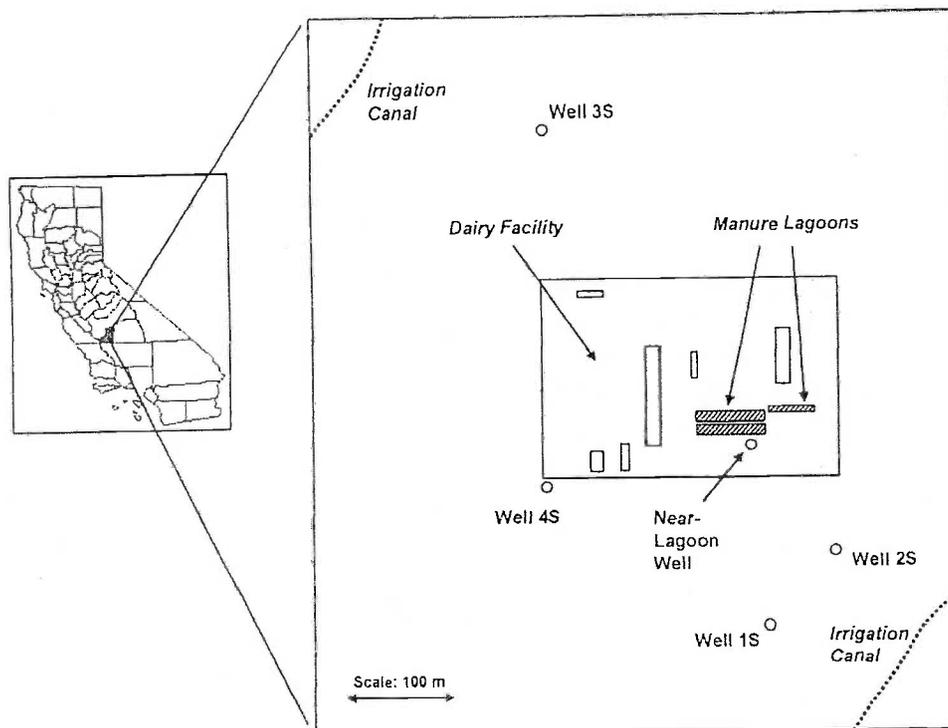


FIGURE 1. Dairy facility map, Kings County, CA. Water quality data from the lagoons and all five monitoring wells were included in the study.

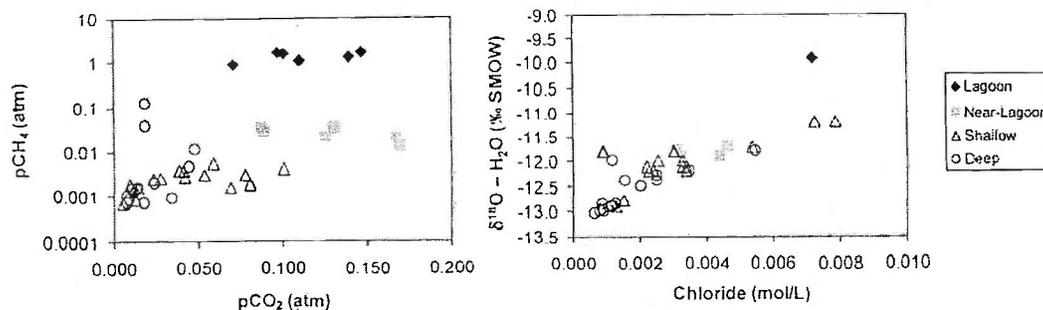


FIGURE 2. Partial pressures of CH_4 and CO_2 in the dairy facility lagoon and groundwater samples (left) and $\delta^{18}\text{O}$ and Cl^- (right). SMOW = standard mean ocean water.

quantified in a subset of samples as CO_2 gas pressure after acidification with orthophosphoric acid. $\delta^2\text{H}$ and $\delta^{18}\text{O}$ were determined using a VG Prism II isotope ratio mass spectrometer and are reported in per mil values relative to the Vienna Standard Mean Ocean Water (VSMOW). Oxygen isotope compositions were determined using the CO_2 equilibration method (15), and hydrogen isotope compositions were determined using the Zn reduction method (16). Dissolved gases (O_2 , N_2 , CO_2 , CH_4 , and Ar) were measured by membrane inlet mass spectroscopy—(MIMS (17)) or noble gas mass spectrometry.

Geochemical trends in water quality data were interpreted using the PHREEQC geochemical model (18). PHREEQC calculates equilibrium water chemistry compositions given an initial water composition, a set of postulated mineral and/or gas phases, and a thermodynamic database of equilibrium reaction constants. For this study, PHREEQC and its associated PHREEQC.DAT database were used to formulate two geochemical processes models: (i) a lagoon water formation model based upon dairy operating practices and a set of assumptions concerning evolution of a multi-component gas phase, oxidation–reduction reaction equilibria, and mineral precipitation and (ii) a seepage model that considers

possible ion exchange interactions and mineral precipitation that could occur when seepage water contacts aquifer sediments.

Results

Ideally, a tracer for lagoon seepage should (i) be transported conservatively in groundwater and (ii) be unique to the lagoon environment. While partial pressures of CH_4 and CO_2 measured in site water samples may reflect mineralization of organic matter under anaerobic conditions in the lagoon water (Figure 2), neither indicator is likely to be conservative in groundwater (e.g., CH_4 could be subject to oxidation, while CO_2 is affected by pH). Alternatively, $\delta^{18}\text{O}$ and Cl^- are elevated in lagoon water (Figure 2) as a result of evaporation and, for Cl^- , the composition of manure, but both indicators will exist in lagoon seepage as well as applied fertilizer and thus would not provide an unequivocal means of distinguishing the two.

Given these limitations, an alternative approach for identifying lagoon seepage is to evaluate multiple geochemical parameters—major cations, anions, pH, and dissolved gases—together in the context of a geochemical process

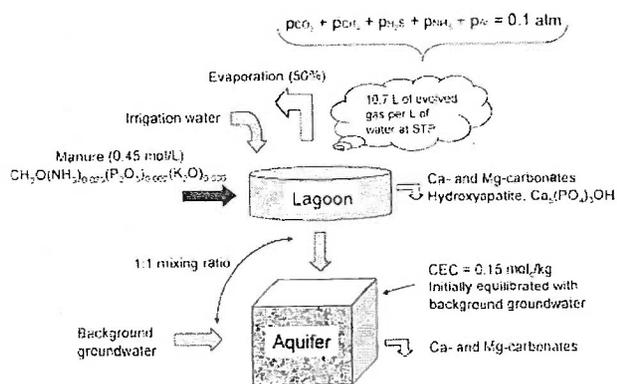


FIGURE 3. Geochemical process model of lagoon water formation and seepage.

model. For example, consider that ion exchange reactions that would remove NH_4^+ and K^+ ions in lagoon seepage (12) must be balanced by the release of other cations such as Ca^{2+} or Mg^{2+} , potentially leading to subsequent precipitation of carbonate minerals and an ensuing drop in pH. More broadly, the observed concentrations of those species that would be associated with the mineralization of manure in the lagoon water (NH_4^+ , K^+ , PO_4^{3-} , and DIC) and those species that could serve as potential indirect tracers of lagoon seepage in the aquifer (pH, Ca^{2+} , Mg^{2+} , SO_4^{2-} , Cl^- , and dissolved Ar) must be reconciled with process models of manure mineralization reactions in the lagoon—including heterogeneous reactions such as gas evolution and mineral precipitations—and water–aquifer material interactions of lagoon seepage and mixing with underlying groundwater (Ar is included because it can partition into an evolved gas phase, as explained next).

The geochemical modeling scheme is illustrated in Figure 3. Modeling lagoon water formation entailed simulating the mineralization of manure in a starting water composition given by the mean agricultural well water composition (i.e., the water used to flush the animal stalls). Dairy manure is compositionally variable and depends on feed composition, degree of mixing with urine, and storage issues affecting decomposition and preferential loss of volatiles. Reported manure compositions describe nutrient content (nitrogen, phosphorus, and potassium) per unit weight, which is typically less than 5% for dry manure and contains roughly equivalent amounts of nitrogen and potassium with a much smaller phosphorus component (19, 20). We assumed a manure stoichiometry of $\text{CH}_2\text{O}(\text{NH}_3)_{0.025}(\text{P}_2\text{O}_5)_{0.002}(\text{K}_2\text{O})_{0.006}$, which has a carbon/nitrogen ratio of approximately 34:1 on a per weight basis, similar to the value of 28:1 reported by Cameron et al. (1). In this formulation, both organic nitrogen and NH_4^+ are represented by NH_3 .

PHREEQC models aqueous species concentrations under an assumption of thermodynamic equilibrium in the presence of user-selected heterogeneous reactions involving gas phases, mineral equilibria, and ion exchange or surface complexation. To model lagoon water formation, we assumed (i) precipitation of calcium- and magnesium-carbonates (idealized as calcite, CaCO_3 , and magnesite, MgCO_3) as well as hydroxyapatite, $\text{Ca}_5(\text{PO}_4)_3\text{OH}$, upon supersaturation and (ii) evolution of a mixed gas phase consisting of CO_2 , CH_4 , NH_3 , H_2S , and Ar when the sum of the partial pressures of the gas components exceeded a threshold pressure. Ideally, gas bubbles will form when the total gas pressure exceeds local hydrostatic pressure in the lagoon; active gas bubble formation is indeed readily observed in the dairy site lagoons. However, mechanical mixing of the lagoon water during water transfer and the natural movement of air across the surface of the lagoon both facilitate diffusive transport, so a loss of gas phase components at a total pressure less than 1 atm is

reasonable given the very low ambient partial pressures of all of the listed gas species in air. Separately, evaporation during lagoon water formation was simulated by removing half of the fluid volume as pure H_2O concurrent with the mineralization of the manure.

Lagoon seepage simulation entailed mixing the lagoon water with the mean composition of anaerobic groundwater (i.e., from depths greater than 11 m) in the presence of an ion exchanger initially in equilibrium with the same anaerobic groundwater. In the absence of site-specific ion exchange data, an exchange capacity of 0.15 mol of charge/kg of soil (21) and the default cation exchange selectivity coefficient set utilized by the PHREEQC database for Na^+ , K^+ , NH_4^+ , Ca^{2+} , and Mg^{2+} were assumed. In addition, calcite and magnesite were modeled to precipitate upon supersaturation.

By setting the gas evolution threshold to 0.1 atm, manure loading to 0.45 mol/L, evaporative loss from the lagoon to 50%, and the mixing ratio of lagoon water/groundwater to 1:1, the proposed geochemical model provides a reasonable semiquantitative match to the water quality data set, at an ambient temperature of 25 °C, as indicated in Figure 4. The agricultural water (i.e., starting composition for the lagoon water) and background groundwater compositions are also shown in Figure 4 for comparison. Several key processes are suggested by the modeling results and the observed data.

(i) Gas evolution and mineral precipitation can account for the observed concentrations of mineralized manure components (PO_4^{3-} and DIC), pH, and Ca^{2+} and Mg^{2+} concentrations measured in the lagoon water. The model shows that hydroxyapatite precipitation is a plausible sink for PO_4^{3-} introduced by addition of manure as well as the Ca^{2+} present in the agricultural water. Ca^{2+} , along with Mg^{2+} , can also be removed as carbonates, explaining the low Mg^{2+} content of the lagoon water. Modeling suggests that DIC may be removed from solution by off-gassing (as CO_2 and CH_4) and by precipitation of carbonate minerals in such a manner as to reproduce the observed lagoon water pH.

(ii) Seepage modeling suggests that the high concentrations of NH_4^+ and K^+ found in the lagoon water diminish via ion exchange and dilution after a one 1:1 mixing event, with the exchange reactions releasing Ca^{2+} and Mg^{2+} , which results in calcite and magnesite precipitation and, as a consequence, a pH decline. Calculated calcite saturation indices among site water samples suggest that calcite precipitation is more likely in the lagoon water and in the Near-Lagoon Well than in groundwater at other locations (Figure 5).

Dissolved Ar warrants special mention. In a well-mixed model system, Ar initially dissolved in the agricultural water in equilibrium with the atmosphere partitions into the gas phase generated during lagoon water formation (consisting mainly of a CO_2 – CH_4 mixture with a volumetric equivalent of approximately 10.7 L of gas per liter of lagoon water at standard temperature and pressure). Such gas stripping phenomena have been reported for coal bed methane environments (23) and ocean sediment pore waters (24). MIMS data indicate Ar concentrations in the lagoon water, and while not reduced to negligible levels as predicted by the model, they nonetheless appear to be depleted with respect to the atmosphere even at elevated temperature (Figure 5). In comparison, groundwater samples from both shallow and deep portions of the perched aquifer beyond the vicinity of the lagoon are supersaturated with argon, indicating excess air entrapped during recharge (25). The Near-Lagoon water composition is intermediate between two, supporting the 1:1 mixing assumption used in the seepage model.

Groundwater encountered below a depth of 11 m in Well 2S, some 100 m to the east–southeast of the manure lagoons, exhibits indications of lagoon impact such as comparatively low pH and Ar (Figure 6). $\delta^{13}\text{C}$ –DIC, quantified in a subset

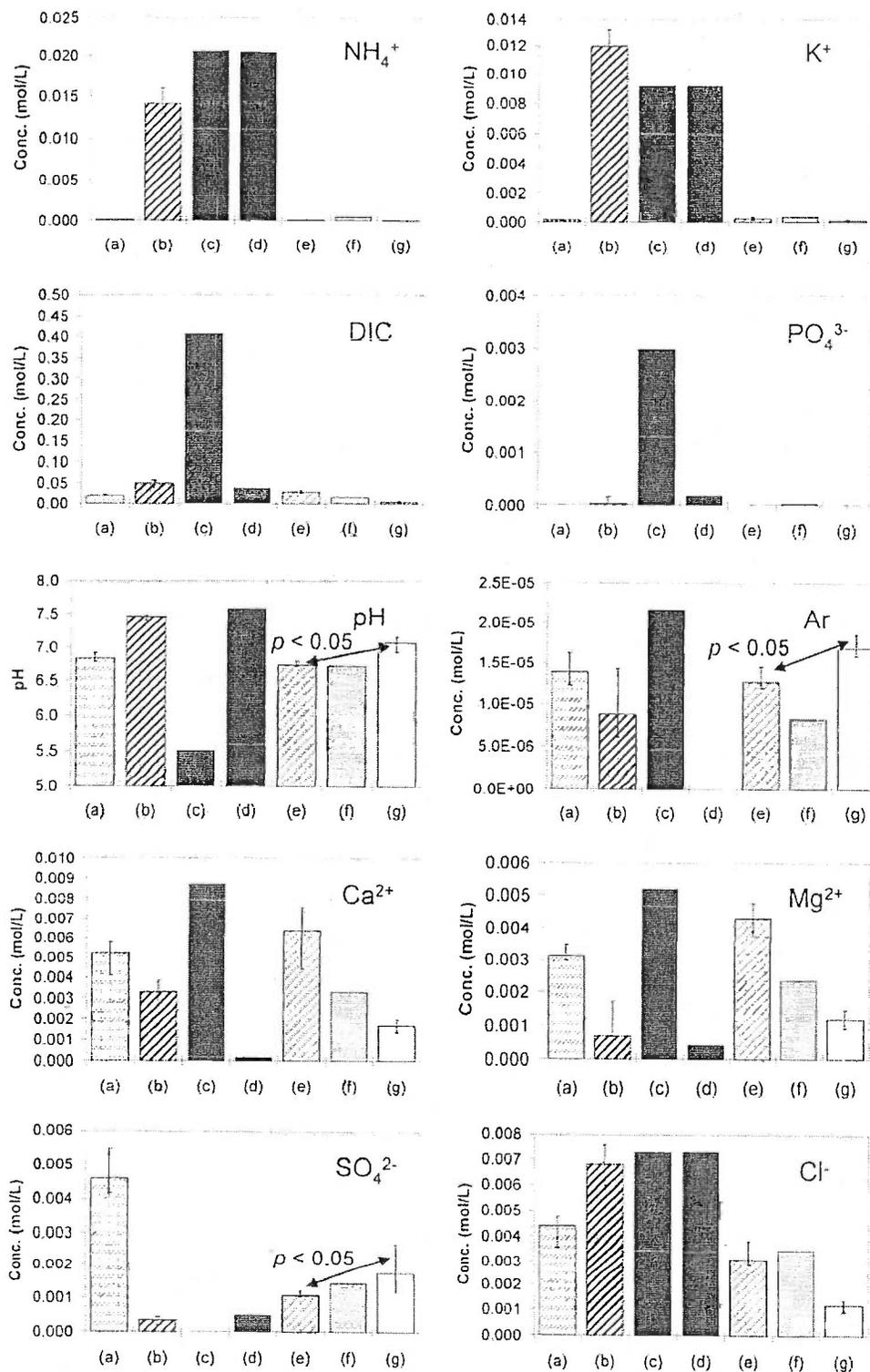


FIGURE 4. Modeling results and dairy site median water characteristics: (a) agricultural water samples, (b) lagoon water samples, (c) lagoon water modeled without any heterogeneous reactions, (d) lagoon water modeled with mineral precipitation and gas evolution, (e) Near-Lagoon Well samples, (f) modeled Near-Lagoon water impacted by seepage, and (g) background groundwater samples collected from depths below 11 m and exclusive of the 2S location. Error bars denote the 25th and 75th percentiles. Differences in parameter value distributions for pH, SO₄²⁻, and Ar between the Near-Lagoon and background groundwater sets are each statistically significant as indicated by *p*-values based on the Student's *t*-test.

of the data, appears to be elevated in association with the pH and Ar signatures. While $\delta^{13}\text{C}$ was not addressed in the geochemical model, isotopically heavy DIC residue in the lagoon water is qualitatively consistent with extensive off-gassing of CO₂ and/or CH₄. As such, data from Well 2S below 11 m were not included in the previous comparisons.

Discussion

The geochemical model for manure lagoon water formation and seepage proposed in this study is based on idealized assumptions that may lead to error. In our judgment, the most problematic assumptions include the following.

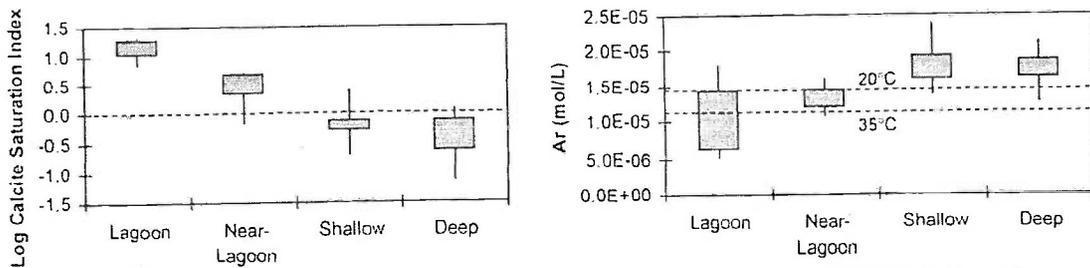


FIGURE 5. Thermodynamic saturation indices for calcite in site water samples, calculated with PHREEQC (left) and Ar concentrations and solubility (22) (right). The box-whisker marks correspond to the minimum, maximum, median, lower quartile, and upper quartile values for each group. Deep samples exclude groundwater samples from Well 2S.

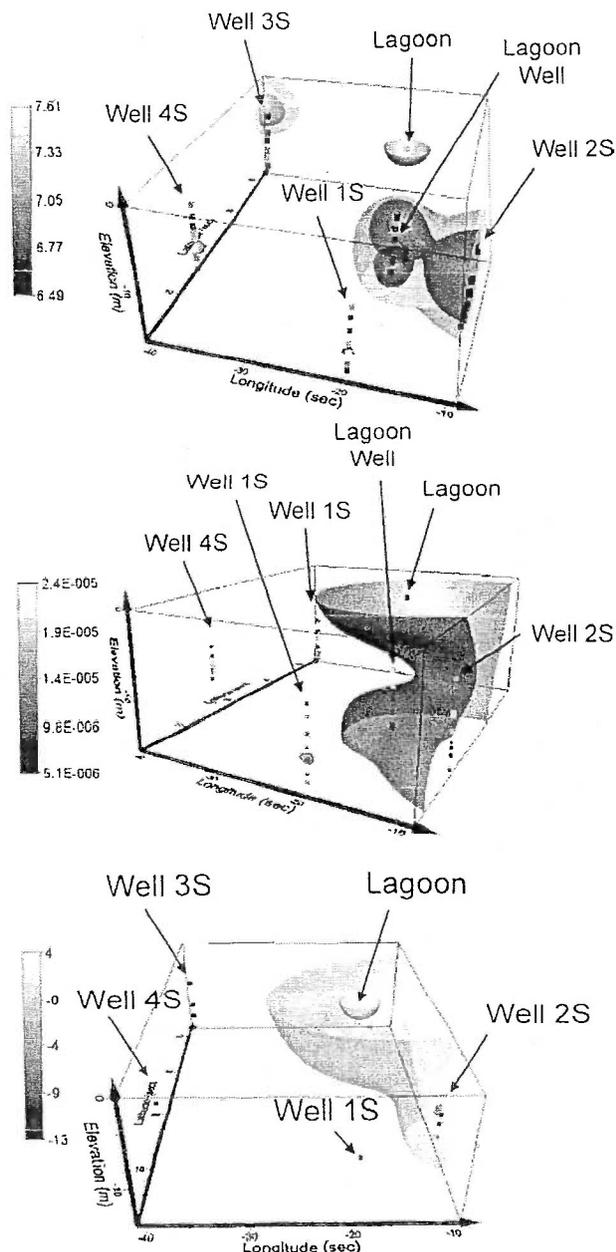


FIGURE 6. Distributions of pH (top), Ar (middle), and $\delta^{13}\text{C}$ (bottom) in site groundwater, each consistent with lagoon seepage that may have impacted Well 2S at depths greater than 11 m. Isosurface values for pH correspond to 6.75, 6.8, and 7.3. The isosurface value for Ar corresponds to 3.6×10^{-4} mol/L. The isosurface values for $\delta^{13}\text{C}$ correspond to -6.4 and 2.3 per mil.

Perfectly Well-Mixed Lagoon. Some stratification of the lagoons with regard to oxidation-reduction reactions and

temperature seems likely, so gas evolution at the surface may reflect a superposition of biogeochemical regimes. Moreover, bubble formation and diffusive gas component losses are separate mechanisms that may operate differently on individual gas phase components depending on the respective diffusion coefficients and other factors. Seasonal and diurnal differences in temperature, microbiological activity in the lagoons, and even the lagoon operation itself will all exert various effects on the rate of off-gassing. This departure from ideality may explain, in part, the inability of the model, with a gas evolution threshold of 0.1 atm, to reproduce the measured CH_4 partial pressures approaching 1 atm (Figure 2).

Thermodynamic Equilibrium within the Lagoon. It is well-recognized that oxidation-reduction processes and some mineral precipitation reactions are slow kinetically. This constraint pertains to all oxidation-reduction reactions occurring in the lagoon—including the assumption of complete mineralization of manure—as well as the precipitation of Mg-rich carbonates that can be kinetically slow (26).

Complexation of Ions with Organic Matter. High concentrations of partially degraded manure constituents in the form of organic acids could complex cations such as Ca^{2+} and Mg^{2+} in the lagoon water, affecting their speciation but not considered by the model (27, 28).

Cation Exchange Model Used for the Aquifer Material. Hypothetical cation exchange characteristics were assumed.

Solute Transport beneath Lagoons. The compartmentalized geochemical model assumes that lagoon water mixes directly with underlying groundwater without passing through an aerobic vadose zone. While the geochemical data appear consistent with this assumption, there is an absence of soil boring data directly beneath the lagoons to support this assertion.

Despite these caveats, we believe that the proposed model has likely identified evidence of three major processes that affect lagoon water formation and seepage: (i) off-gassing of significant quantities of CO_2 and/or CH_4 during mineralization of manure in the lagoon water, (ii) ion exchange reactions that remove K^+ and NH_4^+ from seepage water in the underlying aquifer, and (iii) phosphate and carbonate mineral precipitation reactions occurring in the lagoon water resulting from an increase in pH and in the underlying aquifer from elevated Ca^{2+} and Mg^{2+} generated by ion exchange. These results are consistent with findings reported in previous studies. For example, significant fluxes of CH_4 (up to $19 \text{ mol m}^{-2} \text{ day}^{-1}$) were measured from an anaerobic waste lagoon at a swine operation in southwestern Kansas (29), while ion exchange reactions were found to retard the movement of NH_4^+ in lagoon seepage through soils in both field and laboratory studies (12, 30), with NH_4^+ occupying more than 20% of the exchange sites in some cases (hence displacing cations such as Ca^{2+}). Moreover, the off-gassing process has suggested a new diagnostic tool—dissolved Ar—to detect gas stripped lagoon water that has migrated in into ground-

water. Ar and other noble gases could be particularly useful in distinguishing lagoon seepage from applied fertilizer since lagoon water applied to fields will equilibrate with atmospheric argon prior to infiltration.

Acknowledgments

This work was performed under the auspices of the U.S. Department of Energy by the University of California, Lawrence Livermore National Laboratory under Contract W-7405-ENG-48. Funding for this project was provided by the California State Water Resources Control Board Groundwater Ambient Monitoring and Assessment Program and by the Lawrence Livermore National Laboratory's Laboratory Directed Research and Development Program. The Groundwater Ambient Monitoring and Assessment Program is sponsored by the State Water Resources Control Board and carried out in cooperation with the U.S. Geological Survey. We thank the associate editor and the three anonymous reviewers for their constructive comments.

Supporting Information Available

Additional details of our analysis. This material is available free of charge via the Internet at <http://pubs.acs.org>.

Literature Cited

- (1) Cameron, K. C.; Di, H. J.; Reijnen, B. P. A.; Li, Z.; Russell, J. M.; Barnett, J. W. *N. Z. J. Agric. Res.* 2002, 45, 217–216.
- (2) Karr, J. D.; Showers, W. J.; Jennings, G. D. *Agric. Ecosyst. Environ.* 2003, 95, 103–110.
- (3) Munoz, G. R.; Powell, J. M.; Kelling, K. A. *Soil Sci. Soc. Am. J.* 2003, 67, 817–825.
- (4) Korom, S. F.; Jeppson, R. W. *J. Environ. Qual.* 1994, 23, 973–976.
- (5) Ham, J. M. *Trans. ASAE* 2002, 45, 983–992.
- (6) Gooddy, D. C.; Clay, J. W.; Bottrell, S. H. *Appl. Geochem.* 2002, 17, 903–921.
- (7) Harter, T.; Davis, H.; Mathews, M. C.; Meyer, R. D. *J. Contam. Hydrol.* 2002, 55, 287–315.
- (8) Ham, J. M.; DeSutter, T. M. *J. Environ. Qual.* 2000, 29, 1721–1732.
- (9) Ham, J. M.; DeSutter, T. M. *J. Environ. Qual.* 1999, 28, 1090–1099.
- (10) Gooddy, D. C.; Hughes, A. G.; Williams, A. T.; Armstrong, A. C.; Nicholson, R. J.; Williams, J. R. *Soil Use Manag.* 2001, 17, 128–137.
- (11) Gooddy, D. C.; Withers, P. J. A.; McDonald, H. G.; Chilton, P. *J. Water, Air, Soil Pollut.* 1998, 107, 51–72.

- (12) DeSutter, T. M.; Pierzynska, G. M.; Ham, J. M. *J. Environ. Qual.* 2005, 34, 1234–1242.
- (13) Singleton, M. J.; Esser, B. K.; Moran, J. E.; Hudson, G. B.; McNab, W. W.; Harter, T. *Environ. Sci. Technol.* 2007, 41, 759–765.
- (14) U.S. National Weather Service Office, San Joaquin Valley/Hanford, California, 2006; <http://www.wrh.noaa.gov/hnx/hjo-main.php>.
- (15) Epstein, S.; Mayeda, T. K. *Geochim. Cosmochim. Acta* 1953, 4, 213–224.
- (16) Coleman, M. L.; Shepherd, T. J.; Durham, J. J.; Rouse, J. E.; Moore, G. R. *Anal. Chem.* 1982, 54, 993–995.
- (17) Kana, T. M.; Darkangelo, C.; Hunt, M. D.; Oldham, J. B.; Bennett, G. E.; Cornwell, J. C. *Anal. Chem.* 1994, 66, 4166–4170.
- (18) Parkhurst, D. L.; Appelo, C. A. J. *User's Guide to PHREEQC (Version 2)—A Computer Program for Speciation, Batch Reaction One-Dimensional Transport, and Inverse Geochemical Calculations*; Water-Resources Investigations Report 99-4259; U.S. Geological Survey: Reston, VA, 2002.
- (19) Van Averbek, J. S.; Yoganathan, S. *Using Kraal Manure as a Fertilizer*; Agricultural Development and Rural Research Institute, Republic of South Africa Department of Agriculture: Pretoria, South Africa, 2003.
- (20) Christensen, P.; Peacock, B. *Manure as a Fertilizer*, NG7-97; University of California Cooperative Extension: Tulare, CA, 1998.
- (21) Sposito, G. *The Chemistry of Soils*; Oxford University Press: New York, 1989.
- (22) *(22) CRC Handbook of Chemistry and Physics*, 72nd ed.; Lide, D. R., Ed.; CRC Press: Boca Raton, FL, 1991.
- (23) Zhou, Z.; Ballentine, C. J.; Kipfer, R.; Schoell, M.; Thibodeaux, S. *Geochim. Cosmochim. Acta* 2005, 69, 5413–5428.
- (24) Brennwald, M. S.; Kipfer, R.; Imboden, D. M. *Earth Planet. Sci. Lett.* 2005, 235, 31.
- (25) Aeschbach-Hertig, W.; Peeters, F.; Beyerle, U.; Kipfer, R. *Water Resour. Res.* 1999, 35, 2779–2792.
- (26) Morse, J. W.; Mackenzie, F. T. *Geochemistry of Sedimentary Carbonates. Developments in Sedimentology*; Elsevier: Amsterdam, 1990; Vol. 48, p 295–309.
- (27) Inskeep, W. P.; Bloom, P. R. *Soil Sci. Soc. Am. J.* 1986, 50, 1167–1172.
- (28) Amrhein, C.; Suarez, D. L. *Soil Sci. Soc. Am. J.* 1987, 51, 932–937.
- (29) DeSutter, T. M.; Ham, J. M. *J. Environ. Qual.* 2005, 34, 198–206.
- (30) DeSutter, T. M.; Pierzynski, G. M. *J. Environ. Qual.* 2005, 34, 951–962.

Received for review June 22, 2006. Revised manuscript received November 6, 2006. Accepted November 7, 2006.

ES061490J

Saturated Zone Denitrification: Potential for Natural Attenuation of Nitrate Contamination in Shallow Groundwater Under Dairy Operations

M. J. SINGLETON,^{*,†} B. K. ESSER,[†]
J. E. MORAN,[†] G. B. HUDSON,[†]
W. W. MCNAB,[†] AND T. HARTER[§]

Chemical Sciences Division, Lawrence Livermore National Laboratory, Environmental Restoration Division, Lawrence Livermore National Laboratory, and Department of Land, Air, and Water Resources, University of California at Davis

We present results from field studies at two central California dairies that demonstrate the prevalence of saturated-zone denitrification in shallow groundwater with ^3He apparent ages of <35 years. Concentrated animal feeding operations are suspected to be major contributors of nitrate to groundwater, but saturated zone denitrification could mitigate their impact to groundwater quality. Denitrification is identified and quantified using N and O stable isotope compositions of nitrate coupled with measurements of excess N_2 and residual NO_3^- concentrations. Nitrate in dairy groundwater from this study has $\delta^{15}\text{N}$ values (4.3–61‰), and $\delta^{18}\text{O}$ values (–4.5–24.5‰) that plot with $\delta^{18}\text{O}/\delta^{15}\text{N}$ slopes of 0.47–0.66, consistent with denitrification. Noble gas mass spectrometry is used to quantify recharge temperature and excess air content. Dissolved N_2 is found at concentrations well above those expected for equilibrium with air or incorporation of excess air, consistent with reduction of nitrate to N_2 . Fractionation factors for nitrogen and oxygen isotopes in nitrate appear to be highly variable at a dairy site where denitrification is found in a laterally extensive anoxic zone 5 m below the water table, and at a second dairy site where denitrification occurs near the water table and is strongly influenced by localized lagoon seepage.

Introduction

High concentrations of nitrate, a cause of methemoglobinemia in infants (1), are a national problem in the United States (2), and nearly 10% of public drinking water wells in the state of California are polluted with nitrate at concentrations above the maximum contaminant level (MCL) for drinking water set by the U.S. Environmental Protection Agency (3). The federal MCL is 10 mg/L as N, equivalent to the California EPA limit of 45 mg/L as NO_3^- (all nitrate concentrations are hereafter given as NO_3^-). In the agricultural areas of California's Central Valley, it is not uncommon

to have nearly half the active drinking water wells produce groundwater with nitrate concentrations in the range considered to indicate anthropogenic impact (>13–18 mg/L) (2, 4). The major sources of this nitrate are septic discharge, fertilization using natural (e.g., manure) or synthetic nitrogen sources, and concentrated animal feeding operations. Dairies are the largest concentrated animal operations in California, with a total herd size of 1.7 million milking cows (5).

Denitrification is the microbially mediated reduction of nitrate to gaseous N_2 , and can occur in both unsaturated soils and below the water table where the presence of NO_3^- , denitrifying bacteria, low O_2 concentrations, and electron donor availability exist. In the unsaturated zone, denitrification is recognized as an important process in manure and fertilizer management (6). Although a number of field studies have shown the impact of denitrification in the saturated zone (e.g., 7, 8–11), prior to this study it was not known whether saturated zone denitrification could mitigate the impact of nitrate loading at dairy operations. The combined use of tracers of denitrification and groundwater dating allows us to distinguish between nitrate dilution and denitrification, and to detect the presence of pre-modern water at two dairy operations in the Central Valley of California, referred to here as the Kings County Dairy (KCD) and the Merced County Dairy (MCD; Figure 1). Detailed descriptions of the hydrogeologic settings and dairy operations at each site are included as Supporting Information.

Materials and Methods

Concentrations and Nitrate Isotopic Compositions. Samples for nitrate N and O isotopic compositions were filtered in the field to 0.45 μm and stored cold and dark until analysis. Anion and cation concentrations were determined by ion chromatography using a Dionex DX-600. Field measurements of dissolved oxygen and oxidation reduction potential (using Ag/AgCl with 3.33 mol/L KCl as the reference electrode) were carried out using a Horiba U-22 water quality analyzer. The nitrogen and oxygen isotopic compositions ($\delta^{15}\text{N}$ and $\delta^{18}\text{O}$) of nitrate in 23 groundwater samples from KCD and MCD were measured at Lawrence Berkeley National Laboratory's Center for Isotope Geochemistry using a version of the denitrifying bacteria procedure (12) as described in Singleton et al. (13). In addition, the nitrate from 17 samples was extracted by ion exchange procedure (14) and analyzed for $\delta^{15}\text{N}$ at the University of Waterloo. Analytical uncertainty (1 σ) is 0.3‰ for $\delta^{15}\text{N}$ of nitrate and 0.5‰ for $\delta^{18}\text{O}$ of nitrate. Isotopic compositions of oxygen in water were determined on a VG Prism isotope ratio mass spectrometer at Lawrence Livermore National Laboratory (LLNL) using the CO_2 equilibration method (15), and have an analytical uncertainty of 0.1‰.

Membrane Inlet Mass Spectrometry. Previous studies have used gas chromatography and/or mass spectrometry to measure dissolved N_2 gas in groundwater samples (16–19). Dissolved concentrations of N_2 and Ar for this study were analyzed by membrane inlet mass spectrometry (MIMS), which allows for precise and fast determination of dissolved gas concentrations in water samples without a separate extraction step, as described in Kana et al. (20, 21). The gas abundances are calibrated using water equilibrated with air under known conditions of temperature, altitude, and humidity (typically 18 °C, 183 m, and 100% relative humidity). A small isobaric interference from CO_2 at mass 28 (N_2) is corrected based on calibration with CO_2 -rich waters with known dissolved N_2 , but is negligible for most samples. Samples are collected for MIMS analysis in 40 mL amber

* Corresponding author address: P.O. Box 808, L-231, Livermore, California, 94550; phone: (925) 424-2022; fax: (925) 422-3160; e-mail: singleton20@llnl.gov.

[†] Chemical Sciences Division, Lawrence Livermore National Laboratory.

[‡] Environmental Restoration Division, Lawrence Livermore National Laboratory.

[§] University of California at Davis.

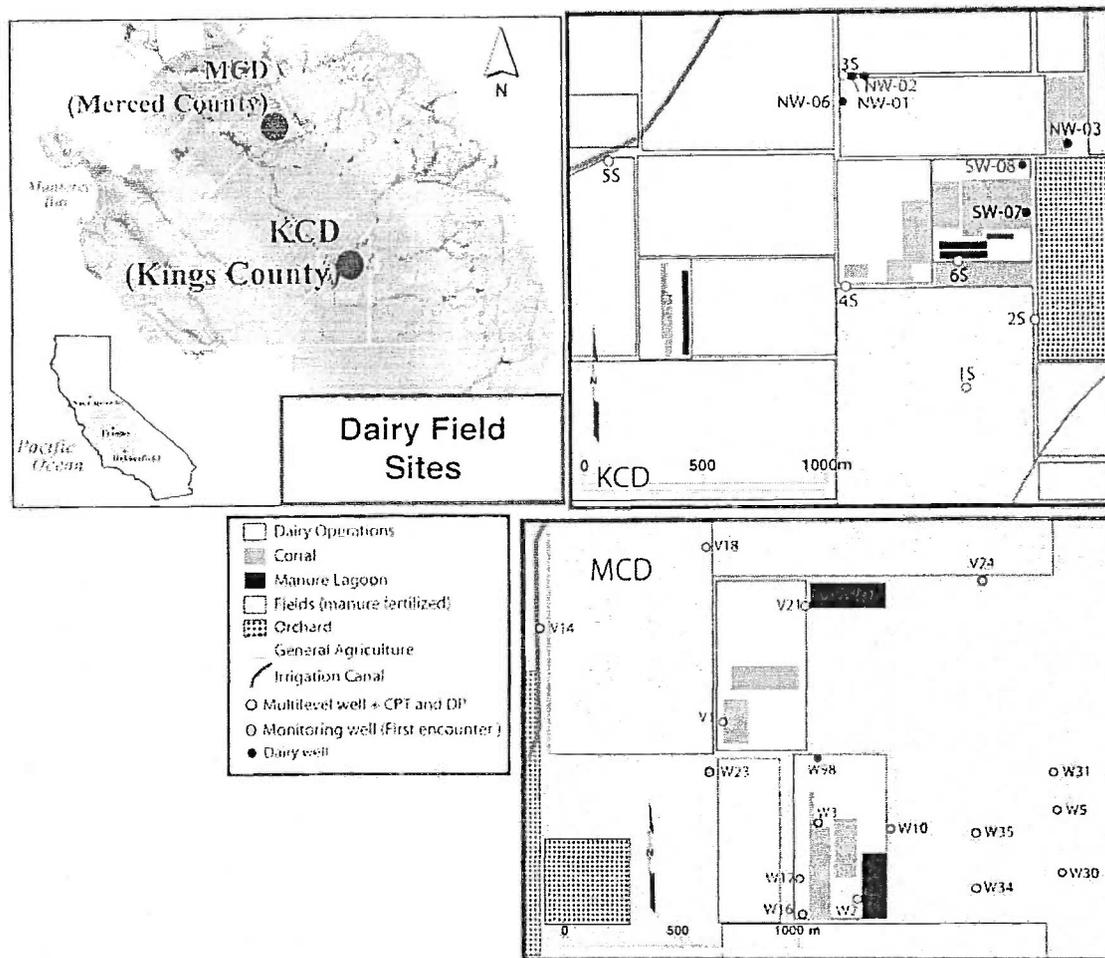


FIGURE 1. Location of dairy study sites, and generalized maps of each dairy showing sample locations relative to lagoons and dairy operations.

glass VOA vials with no headspace that are kept cold during transport, and then analyzed within 24 h.

Noble Gases and $^3\text{H}/^3\text{He}$ Dating. Dissolved noble gas samples are collected in copper tubes, which are filled without bubbles and sealed with a cold weld in the field. Dissolved noble gas concentrations were measured at LLNL after gas extraction on a vacuum manifold and cryogenic separation of the noble gases. Concentrations of He, Ne, Ar, and Xe were measured on a quadrupole mass spectrometer. The ratio of ^3He to ^4He was measured on a VG5400 mass spectrometer. Calculations of excess air and recharge temperature from Ne and Xe measurements are described in detail in Ekwurzel (22), using an approach similar to that of Aeschbach-Hertig et al. (23).

Tritium samples were collected in 1 L glass bottles. Tritium was determined by measuring ^3He accumulation after vacuum degassing each sample and allowing 3–4 weeks accumulation time. After correcting for sources of ^3He not related to ^3H decay (24, 25), the measurement of both tritium and its daughter product ^3He allows calculation of the initial tritium present at the time of recharge, and apparent ages can be determined from the following relationship based on the production of tritiogenic helium ($^3\text{He}_{\text{trit}}$):

$$\text{Groundwater Apparent Age (years)} = -17.8 \times \ln(1 + ^3\text{He}_{\text{trit}}/^3\text{H})$$

Groundwater age dating has been applied in several studies of basin-wide flow and transport (25–27). The reported groundwater age is the mean age of the mixed

sample, and furthermore, is only the age of the portion of the water that contains measurable tritium. Average analytical error for the age determinations is ± 1 year, and samples with ^3H that is too low for accurate age determination (<1 pCi/L) are reported as >50 years. Significant loss of ^3He from groundwater is not likely in this setting given the relatively short residence times and high infiltration rates from irrigation. Apparent ages give the mean residence time of the fraction of recently recharged water in a sample, and are especially useful for comparing relative ages of water from different locations at each site. The absolute mean age of groundwater may be obscured by mixing along flow paths due to heterogeneity in the sediments (28).

Results and Discussion

Nitrate in Dairy Groundwater. Nitrate concentrations at KCD range from below detection limit (BDL, <0.07 mg/L) to 274 mg/L. Within the upper aquifer, there is a sharp boundary between high nitrate waters near the surface and deeper, low nitrate waters. Nitrate concentrations are highest between 6 and 13 m below ground surface (BGS) at all multilevel wells (0.5 m screened intervals), with an average concentration of 98 mg/L. Groundwater below 15 m has low nitrate concentrations ranging from BDL to 2.8 mg/L, and also has low or nondetectable ammonium concentrations. The transition from high to low nitrate concentration corresponds to decreases in field-measured oxidation–reduction potential (ORP) and dissolved oxygen (DO) concentration. ORP values are generally above 0 mV and DO concentrations are >1 mg/L in the upper 12 m of the aquifer, defining a more oxidizing zone (Figure 2). A reducing zone is indicated below

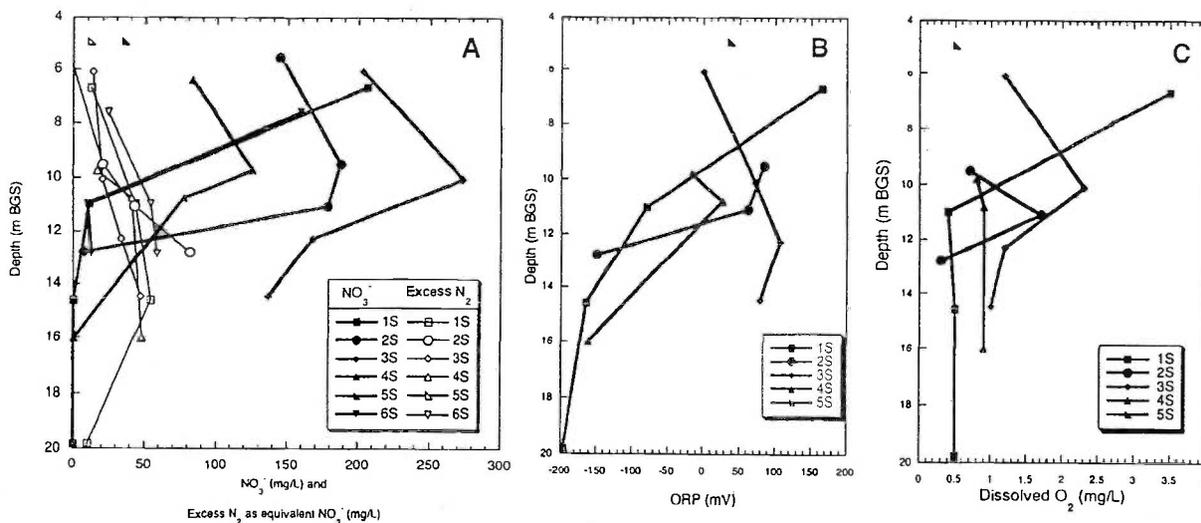


FIGURE 2. (A) Average excess N_2 and nitrate concentrations, (B) oxidation–reduction potential (ORP), and (C) dissolved oxygen in multilevel monitoring wells at the KCD site.

12 m by ORP values as low as -196 mV and DO concentrations <1.2 mg/L. Vertical head varies by less than 10 cm in the upper aquifer multilevel wells.

Nitrate concentrations at MCD monitoring wells sampled for this study range from 2 to 426 mg/L with an average of 230 mg/L. Several wells (W-02, W-16, and W-17) located next to a lagoon and corral have lower nitrate but high ammonium concentrations (Table 1 in Supporting Information). The MCD wells are all screened at the top of the unconfined aquifer except W98, a supply well that is pumped from approximately 57 m BGS. Nitrate concentrations observed for this deeper well are <1 mg/L.

Dissolved Gases. Nitrogen gas, the comparatively conservative product of denitrification, has been used as a natural tracer to detect denitrification in the subsurface (16–18). Groundwater often also contains N_2 beyond equilibrium concentrations due to incorporation of excess air from physical processes at the water table interface (23, 29, 30). In the saturated zone, total dissolved N_2 is a sum of these three sources:

$$(N_2)_{\text{dissolved}} = (N_2)_{\text{equilibrium}} + (N_2)_{\text{excess air}} + (N_2)_{\text{denitrification}}$$

By normalizing the measured dissolved concentrations as N_2/Ar ratios, the amount of excess N_2 from denitrification can be calculated as

$$(N_2)_{\text{denitrification}} = \left(\frac{(N_2)}{Ar} \right)_{\text{measured}} - \left(\frac{N_{2\text{equilibrium}} + N_{2\text{excess air}}}{Ar_{\text{equilibrium}} + Ar_{\text{excess air}}} \right) Ar_{\text{measured}}$$

where the N_2 and Ar terms for equilibrium are calculated from equilibrium concentrations determined by gas solubility. The N_2/Ar ratio is relatively insensitive to recharge temperature, but the incorporation of excess air must be constrained in order to determine whether denitrification has shifted the ratio to higher values (19). Calculations of excess N_2 based on the N_2/Ar ratio assume that any excess air entrapped during recharge has the ratio of N_2/Ar in the atmosphere (83.5). Any partial dissolution of air bubbles would lower the N_2/Ar ratio (30, 31), thus decreasing the apparent amount of excess N_2 .

For this study, Xe and Ne derived recharge temperature and excess air content were determined for 12 of the monitoring wells at KCD and 9 wells at MCD. For these sites, excess N_2 can be calculated directly, accounting for the contribution of excess air and recharge temperature. Site

representative mean values of recharge temperature and excess air concentration are used for samples without noble gas measurements. Mean annual air temperatures at the KCD and MCD sites are 17 and 16 °C, respectively (32), and the Xe-derived average recharge temperatures for the KCD and MCD sites are 19 and 18 °C. Recharge temperatures are most likely higher than mean annual air temperature because most recharge is from excess irrigation during the summer months. The average amount of excess air indicated by Ne concentrations is 2.2×10^{-3} cm³(STP)/g H₂O for KCD and 1.7×10^{-3} cm³(STP)/g H₂O for MCD. From these parameters, we estimate the site representative initial N_2/Ar ratios including excess air to be 41.2 for KCD and 40.6 for MCD. Measured N_2/Ar ratios greater than these values are attributed to production of N_2 by denitrification.

The excess N_2 concentration can be expressed in terms of the equivalent reduced nitrate that it represents in mg/L NO_3^- based on the stoichiometry of denitrification. Considering excess N_2 in terms of equivalent NO_3^- provides a simple test to determine whether there is a mass balance between nitrate concentrations and excess N_2 . From Figure 2, there does not appear to be a balance between nitrate concentrations and excess N_2 in KCD groundwater, since nitrate concentrations in the shallow wells are more than twice that of equivalent excess N_2 concentrations in the anoxic zone. There are multiple possible causes of the discrepancy between NO_3^- concentrations and excess N_2 concentrations including (1) the NO_3^- loading at the surface has increased over time, and denitrification is limited by slow vertical transport into the anoxic zone, (2) mixing with deeper, low initial NO_3^- waters has diluted both the NO_3^- and excess N_2 concentrations, or (3) some dissolved N_2 has been lost from the saturated zone. All three processes may play a role in N cycling at the dairies, but we can shed some light on their relative importance by considering the extent of denitrification and then constraining the time scale of denitrification as discussed in the following sections.

Isotopic Compositions of Nitrate. Large ranges in $\delta^{15}N$ and $\delta^{18}O$ values of nitrate are observed at both dairies (Figure 3). Nitrate from KCD has $\delta^{15}N$ values of 4.3–61.1‰, and $\delta^{18}O$ values of -0.7 –24.5‰. At MCD, nitrate $\delta^{15}N$ values range from 5.3 to 30.2‰, and $\delta^{18}O$ values range from -0.7 to 13.1‰. The extensive monitoring well networks at these sites increase the probability that water containing residual nitrate from denitrification can be sampled.

Nitrate $\delta^{15}N$ and $\delta^{18}O$ values at both dairies are consistent with nitrification of ammonium and mineralized organic N

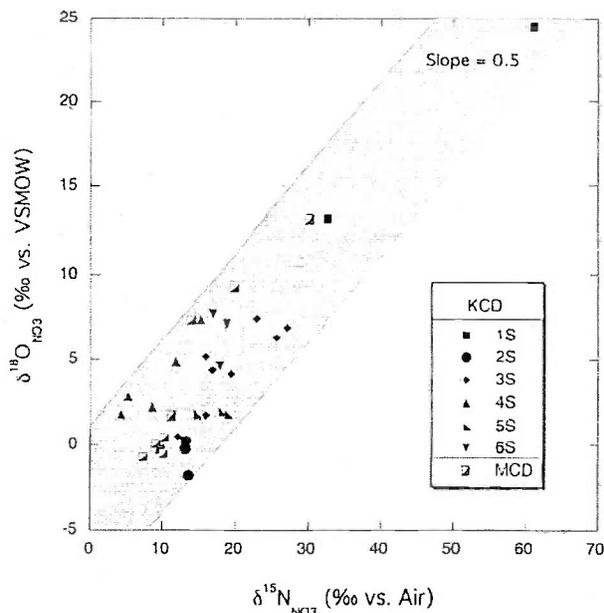


FIGURE 3. Oxygen and nitrogen isotopic composition of nitrate in dairy groundwater from multilevel monitoring wells at KCD and first encounter wells at MCD. The shaded region indicates a slope of 0.5 for a range of starting compositions. Calculated slopes for linear fits to multilevel wells at KCD and first encounter wells at MCD range from 0.47 to 0.60.

compounds from manure-rich wastewater, which is stored and used as a fertilizer at both dairy sites. At some locations, nitrification has been followed by denitrification. Prior to nitrification, cow manure likely starts out with a bulk $\delta^{15}\text{N}$ value close to 5‰, but is enriched in ^{15}N to varying degrees due to volatile loss of ammonia, resulting in $\delta^{15}\text{N}$ values of 10–22‰ in nitrate derived from manure (33, 34). Culture experiments have shown that nitrification reactions typically combine 2 oxygen atoms from the local pore water and one oxygen atom from atmospheric O_2 (35, 36), which has a $\delta^{18}\text{O}$ of 23.5‰ (37). Different ratios of oxygen from water and atmospheric O_2 are possible for very slow nitrification rates and low ammonia concentrations (38), however for dairy wastewater we assume that the 2:1 relation gives a reasonable prediction of the starting $\delta^{18}\text{O}$ values for nitrate at the two dairies based on the average values for $\delta^{18}\text{O}$ of groundwater at each site (–12.6‰ at KCD and –9.9‰ at MCD). Based on this approach, the predicted initial values for $\delta^{18}\text{O}$ in nitrate are –0.7‰ at KCD and 1.1‰ at MCD. Samples with the lowest nitrate $\delta^{15}\text{N}$ values have $\delta^{18}\text{O}$ values in this range, and are consistent with nitrate derived from manure. There is no strong evidence for mixing with nitrate from synthetic nitrogen fertilizers, which are used occasionally at both sites, but typically have low $\delta^{15}\text{N}$ values (0–5‰) and $\delta^{18}\text{O}$ values around 23‰ (39).

Denitrification drives the isotopic composition of the residual nitrate to higher $\delta^{15}\text{N}$ and $\delta^{18}\text{O}$ values. The stable isotopes of nitrogen are more strongly fractionated during denitrification than those of oxygen, leading to a slope of approximately 0.5 on a $\delta^{18}\text{O}$ vs $\delta^{15}\text{N}$ diagram (34). Nitrate $\delta^{15}\text{N}$ and $\delta^{18}\text{O}$ values at individual KCD multilevel well sites are positively correlated with calculated slopes ranging from 0.47 to 0.60; the slope of first encounter well data at MCD is 0.66 (Figure 3). These nitrate $\delta^{15}\text{N}$ and $\delta^{18}\text{O}$ values indicate that denitrification is occurring at both sites. Because a wide range of fractionation factors are known to exist for this process (40), it is not possible to determine the extent of denitrification using only the isotopic compositions of nitrate along a denitrification trend, even when the initial value for manure-derived nitrate can be measured or calculated.

Extent of Denitrification. The concentrations of excess N_2 and residual nitrate can be combined with the isotopic composition of nitrate in order to characterize the extent of denitrification. In an ideal system, denitrification leads to a regular decrease in nitrate concentrations, an increase in excess N_2 , and a Rayleigh-type fractionation of N and O isotopes in the residual nitrate (Figure 4). In the Rayleigh fractionation model (41) the isotopic composition of residual nitrate depends on the fraction of initial nitrate remaining in the system ($f = C/C_{\text{initial}}$), the initial $\delta^{15}\text{N}$, and the fractionation factor (α) for denitrification:

$$\delta^{15}\text{N} = (1000 + \delta^{15}\text{N}_{\text{initial}}) f^{(\alpha-1)} - 1000$$

The fractionation factor α is defined from the isotopic ratios of interest ($R = ^{15}\text{N}/^{14}\text{N}$ and $^{18}\text{O}/^{16}\text{O}$):

$$\alpha = \frac{(R)_{\text{Product}}}{(R)_{\text{Reactant}}}$$

This fractionation can also be considered as an enrichment factor (ϵ) in ‰ units using the approximation $\epsilon \approx 1000 \ln \alpha$. The extent of denitrification can be calculated as $1 - f$. Rather than relying on an estimate of initial nitrate concentration, the parameter f is determined directly using field measurements of excess N_2 in units of equivalent reduced NO_3^- :

$$f = C_{\text{NO}_3^-} / (C_{\text{NO}_3^-} + C_{\text{excess N}_2})$$

Heterogeneity in groundwater systems can often complicate the interpretation of contaminant degradation using a Rayleigh model (42). Denitrified water retains a proportion of its excess N_2 concentration (and low values of f) during mixing, but the isotopic composition of nitrate may be disturbed by mixing since denitrified waters contain extremely low concentrations of nitrate (<1 mg/L). The sample from 1S with a f value close to zero and a $\delta^{15}\text{N}$ value of 7.6‰ was likely denitrified and is one example of this type of disturbance. However, in general, groundwater samples from the same multilevel well sites at KCD fall along similar Rayleigh fractionation curves, indicating that the starting isotopic composition of nitrate and the fractionation factor of denitrification vary across the site (Figure 4).

Values of $\delta^{15}\text{N}$ and f calculated from nitrate and excess N_2 fall along Rayleigh fractionation curves with enrichment factors (ϵ) ranging from –57‰ to –7‰ for three multilevel well sites at KCD and first encounter wells at MCD. As expected for denitrification, the enrichment factors indicated for oxygen are roughly half of those for nitrogen. The magnitude of these enrichment factors for N in residual nitrate are among the highest reported for denitrification, which typically range from –40‰ to –5‰ (34, 40). Partial gas loss near the water table interface at MCD could potentially increase the value of f , resulting in larger values of ϵ . Gas loss is unlikely to affect fractionation factors at KCD since most excess N_2 is produced well below the water table. Considering the large differences observed for denitrification fractionation factors within and between the two dairy sites, it is not sufficient to estimate fractionation factors for denitrification at dairies based on laboratory-derived values or field-derived values from other sites. The appropriate fractionation factors must be determined for each area, and even then the processes of mixing and gas loss must be considered in the relation between isotopic values and the extent of denitrification. Nevertheless, direct determination of the original amount of nitrate using dissolved N_2 values significantly improves our ability to determine the extent of denitrification in settings where the initial nitrate concentrations are highly variable.

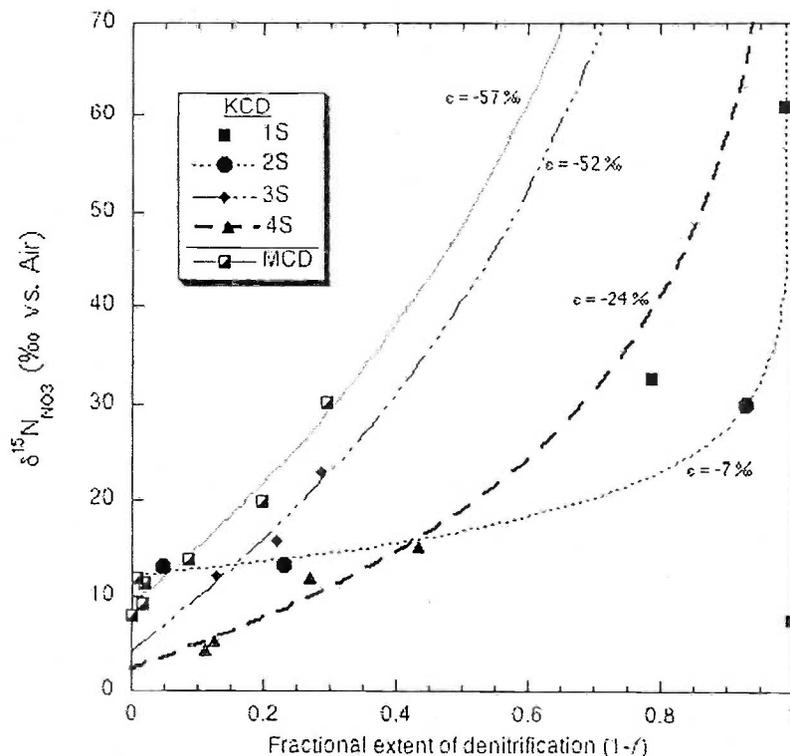


FIGURE 4. Nitrate $\delta^{15}\text{N}$ values plotted against the fractional extent of denitrification ($1 - f$) based on excess N_2 and residual nitrate. Enrichment factors (ϵ) are calculated by fitting the Rayleigh fractionation equation to data from three multilevel well sites at KCD and wells at MCD.

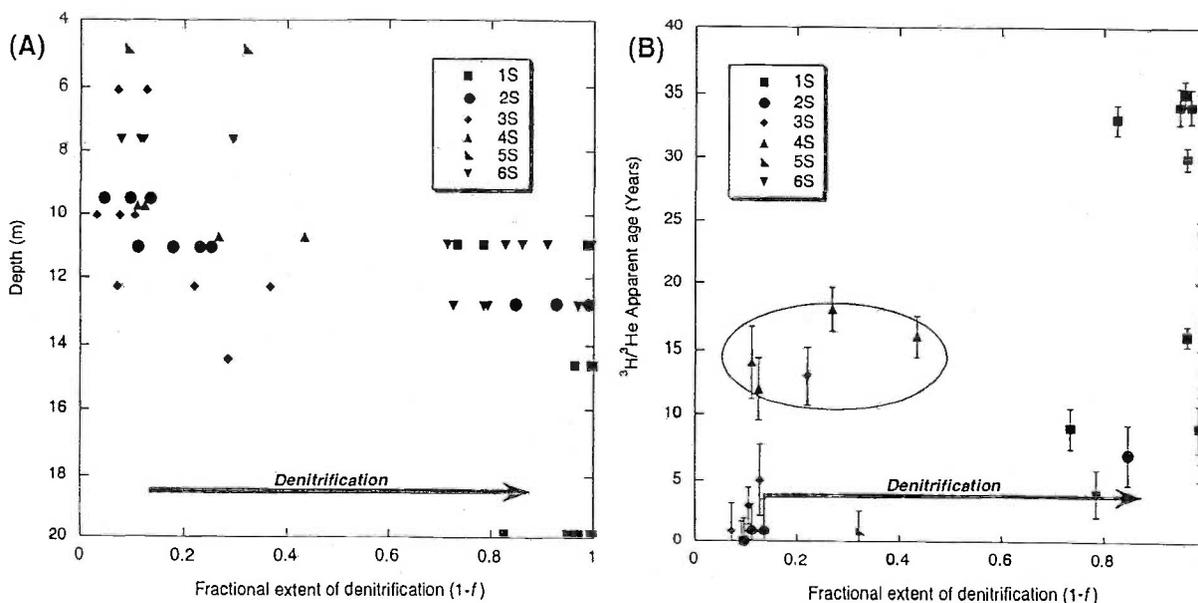


FIGURE 5. Sample depth (A) and $^3\text{H}/^3\text{He}$ apparent age (B) plotted against the fractional extent of denitrification ($1 - f$). Samples at two sites have experienced less denitrification than is typical for samples with $^3\text{H}/^3\text{He}$ apparent age > 8 years (circled, see text).

Time Scale of Denitrification. Modern water (i.e., groundwater containing measurable tritium) is found at all multilevel wells completed in the upper aquifer at KCD, the deepest of which is 20 m BGS. The upper aquifer below KCD has $^3\text{H}/^3\text{He}$ apparent ages of < 35 years. At well 1D1 (54 m BGS), the lower aquifer has no measurable NO_3^- and tritium below 1 pCi/L, indicating a groundwater age of more than 50 years. The sum of nitrate and excess N_2 is highest in the young, shallow dairy waters at KCD. Samples with $^3\text{H}/^3\text{He}$ ages > 29 years were below the MCL for nitrate prior to denitrification. These results are consistent with an increase in nitrate loading

at the surface, which followed the startup of KCD operations in the early 1970s.

The extent of denitrification at KCD is related to both depth and groundwater residence times based on $^3\text{H}/^3\text{He}$ apparent ages (Figure 5). There is a sharp transition from high nitrate waters to denitrified waters between 11 and 13 m depth across the KCD site. This transition is also related to the apparent age of the groundwater, as the high nitrate waters typically have apparent ages of between 0 and 5 years, and most samples with ages greater than 8 years are significantly or completely denitrified. There are five samples

- (13) Singleton, M. J.; Woods, K. N.; Conrad, M. E.; Depaolo, D. J.; Dresel, P. E. Tracking sources of unsaturated zone and groundwater nitrate contamination using nitrogen and oxygen stable isotopes at the Hanford Site, Washington. *Environ. Sci. Technol.* 2005, 39, 3563–3570.
- (14) Silva, S. R.; Kendall, C.; Wilkison, D. H.; Ziegler, A. C.; Chang, C. C. Y.; Avanzino, R. J. A new method for collection of nitrate from fresh water and the analysis of nitrogen and oxygen isotope ratios. *J. Hydrol.* 2000, 228, 22–36.
- (15) Epstein, S.; Mayeda, T. K. Variation of O-18 content of waters from natural sources. *Geochim. Cosmochim. Acta* 1953, 4, 213–224.
- (16) Bohlke, J. K.; Denver, J. M. Combined use of groundwater dating, chemical, and isotopic analyses to resolve the history and fate of nitrate contamination in two agricultural watersheds, Atlantic Coastal Plain, Maryland. *Water Resour. Res.* 1995, 31, 2319–2339.
- (17) McMahon, P. B.; Bohlke, J. K. Denitrification and mixing in a stream-aquifer system: Effects on nitrate loading to surface water. *J. Hydrol.* 1996, 186, 105–128.
- (18) Vogel, J. C.; Talma, A. S.; Heaton, T. H. E. Gaseous nitrogen as evidence for denitrification in groundwater. *J. Hydrol.* 1981, 50, 191–200.
- (19) Wilson, G. B.; Andrews, J. N.; Bath, A. H. The nitrogen isotope composition of groundwater nitrates from the East Midlands Triassic Sandstone Aquifer, England. *J. Hydrol.* 1994, 157, 35–46.
- (20) Kana, T. M.; Darkangelo, C.; Hunt, M. D.; Oldham, J. B.; Bennett, G. E.; Cornwell, J. C. Membrane inlet mass spectrometer for rapid high precision determination of N₂, O₂, and Ar in environmental water samples. *Anal. Chem.* 1994, 66, 4166–4170.
- (21) An, S. M.; Gardner, W. S.; Kana, T. Simultaneous measurement of denitrification and nitrogen fixation using isotope pairing with membrane inlet mass spectrometry analysis. *Appl. Environ. Microbiol.* 2001, 67, 1171–1178.
- (22) Ekwurzel, B. *LLNL Isotope Laboratories Data Manual*; UCRL-TM-203316; Lawrence Livermore National Laboratory: Livermore, CA, 2004; p 133.
- (23) Aeschbach-Hertig, W.; Peeters, F.; Beyerle, U.; Kipfer, R. Palaeotemperature reconstruction from noble gases in ground water taking into account equilibration with entrapped air. *Nature* 2000, 405, 1040–1044.
- (24) Aeschbach-Hertig, W.; Peeters, F.; Beyerle, U.; Kipfer, R. Interpretation of dissolved atmospheric noble gases in natural waters. *Water Resour. Res.* 1999, 35, 2779–2792.
- (25) Ekwurzel, B.; Schlosser, P.; Smethie, W. M.; Plummer, L. N.; Busenberg, E.; Michel, R. L.; Weppernig, R.; Stute, M. Dating of shallow groundwater - comparison of the transient tracers H-3/He-3, chlorofluorocarbons, and Kr-85. *Water Resour. Res.* 1994, 30, 1693–1708.
- (26) Poreda, R. J.; Cerling, T. E.; Solomon, D. K. Tritium and helium isotopes as hydrologic tracers in a shallow unconfined aquifer. *J. Hydrol.* 1988, 103, 1–9.
- (27) Solomon, D. K.; Poreda, R. J.; Schiff, S. L.; Cherry, J. A. Tritium and He-3 as Groundwater Age Tracers in the Borden Aquifer. *Water Resour. Res.* 1992, 28, 741–755.
- (28) Weissmann, G. S.; Zhang, Y.; LaBolle, E. M.; Fogg, G. E. Dispersion of groundwater age in an alluvial aquifer system. *Water Resour. Res.* 2002, 38, art. no.1198.
- (29) Heaton, T. H. E.; Vogel, J. C. Excess air in groundwater. *J. Hydrol.* 1981, 50, 201–216.
- (30) Holocher, J.; Peeters, F.; Aeschbach-Hertig, W.; Hofer, M.; Brennwald, M.; Kinzelbach, W.; Kipfer, R. Experimental investigations on the formation of excess air in quasi-saturated porous media. *Geochim. Cosmochim. Acta* 2002, 66, 4103–4117.
- (31) Holocher, J.; Peeters, F.; Aeschbach-Hertig, W.; Hofer, M.; Kipfer, R. Gas exchange in quasi-saturated porous media: Investigations on the formation of excess air using noble gases (abstr.). *Geochim. Cosmochim. Acta* 2002, 66, A338–A338.
- (32) Peterson, T. C.; Vose, R. S. An overview of the Global Historical Climatology Network temperature database. *Bull. Am. Meteorol. Soc.* 1997, 78, 2837–2849.
- (33) Kreitler, C. W. Nitrogen-isotope ratio studies of soils and groundwater nitrate from alluvial fan aquifers in Texas. *J. Hydrol.* 1979, 42, 147–170.
- (34) Kendall, C. Tracing nitrogen sources and cycling in catchments. In *Isotope Tracers in Catchment Hydrology*; Kendall, C., McDonnell, J. J., Eds.; Elsevier: New York, 1998; pp 519–576.
- (35) Andersson, K. K.; Hooper, A. B. O₂ and H₂O are each the source of one O in NO₂⁻ produced from NH₃ by Nitrosomonas - N15-NMR evidence. *FEBS Lett.* 1983, 164, 236–240.
- (36) Holloch, T. C. Source of the oxygen atoms of nitrate in the oxidation of nitrite by *Nitrobacter agilis* and evidence against a P-O-N anhydride mechanism in oxidative phosphorylation. *Arch. Biochem. Biophys.* 1984, 233, 721–727.
- (37) Kroopnick, P. M.; Craig, H. Atmospheric oxygen: Isotopic composition and solubility fractionation. *Science* 1972, 175, 54–55.
- (38) Mayer, B.; Bollwerk, S. M.; Mansfeldt, T.; Hutter, B.; Veizer, J. The oxygen isotope composition of nitrate generated by nitrification in acid forest floors. *Geochim. Cosmochim. Acta* 2001, 65, 2743–2756.
- (39) Kendall, C.; Aravena, R. Nitrate isotopes in groundwater systems. In *Environmental Tracers in Subsurface Hydrology*; Cook, P. G., Herczeg, A. L., Eds.; Kluwer Academic Publishers: Norwell, MA, 2000; pp 261–297.
- (40) Hubner, H. Isotope effects of nitrogen in the soil and biosphere. In *Handbook of Environmental Isotope Geochemistry: Volume 2b, The Terrestrial Environment*; Fritz, P., Fontes, J. C., Eds.; Elsevier: New York, 1986; pp 361–425.
- (41) Criss, R. E. *Principles of Stable Isotope Distribution*; Oxford University Press: New York, 1999; p 254.
- (42) Abe, Y.; Hunkeler, D. Does the Rayleigh equation apply to evaluate field isotope data in contaminant hydrogeology? *Environ. Sci. Technol.* 2006, 40, 1588–1596.
- (43) McNab, W. W.; Singleton, M. J.; Moran, J. E.; Esser, B. K. Assessing the impact of animal waste lagoon seepage on the geochemistry of an underlying shallow aquifer. *Environ. Sci. Technol.* 2007, 41, 753–758.

Received for review May 25, 2006. Revised manuscript received November 13, 2006. Accepted November 15, 2006.

ES061253G

that do not follow this pattern. These outliers are from sites 3S and 4S where the shallow groundwater has much higher $^3\text{H}/^3\text{He}$ apparent ages due to slow movement around clay zones at the screened intervals for these samples. The existence of older water that is not significantly impacted by denitrification indicates that it is the physical transport of water below the transition from oxic to anoxic conditions rather than the residence time that governs denitrification in this system.

At the MCD site, groundwater $^3\text{H}/^3\text{He}$ apparent ages indicate fast transit rates from the water table to the shallow monitoring wells. Most of the first encounter wells have apparent ages of <3 years, consistent with the hydraulic analysis presented by Harter et al. (5). The very fast transit times to the shallow monitoring wells at MCD allow for some constraints on minimum denitrification rates at this site. Based on the comparison of the calculated ages with the initial tritium curve, these shallow wells contain a negligible amount of old, ^3H -decayed water. In shallow wells near lagoons (e.g., W-16 and V-21), the observed excess N_2 (equivalent to 71 and 40 mg/L of reduced NO_3^-) accumulated over a duration of less than 1 year, indicating that denitrification rates may be very high at these sites. Complete denitrification of groundwater collected from well W-98 (excess N_2 equivalent to 51 mg/L NO_3^-) was attained within approximately 31 years, but may have occurred over a short period of time relative to the mean age of the water.

Occurrence of Denitrification at Dairy Sites. The depth at which denitrified waters are encountered is remarkably similar across the KCD site. This transition is not strongly correlated with a change in sediment texture. The denitrified waters at all KCD wells coincide with negative ORP values and generally low dissolved O_2 concentrations. Total organic carbon (TOC) concentration in the shallow groundwaters range from 1.1 to 15.7 mg/L at KCD, with the highest concentrations of TOC found in wells adjacent to lagoons. The highest concentrations of excess N_2 are found in nested well-set 2S, which is located in a field downgradient from the lagoons. However, sites distal to the lagoons (3S and 4S) that are apparently not impacted by lagoon seepage (43) also show evidence of denitrification, suggesting that direct lagoon seepage is not the sole driver for this process.

The chemical stratification observed in multilevel wells at the KCD site demonstrates the importance of characterizing vertical variations within aquifers for nitrate monitoring studies. Groundwater nitrate concentrations are integrated over the high and low nitrate concentration zones by dairy water supply wells, which have long screened intervals from 9 to 18 m BGS. Water quality samples from these supply wells underestimate the actual nitrate concentrations present in the uppermost oxic aquifer. Similarly, first encounter monitoring wells give an overestimate of nitrate concentrations found deep in the aquifer, and thus would miss entirely the impact of saturated zone denitrification in mitigating nitrate transport to the deep aquifer.

Monitoring wells at MCD sample only the top of the aquifer, so the extent of denitrification at depth is unknown, except for the one deep supply well (W98), which has less than 1 mg/L nitrate and an excess N_2 content consistent with reduction of 51 mg/L NO_3^- to N_2 . This supply well would be above the MCL for nitrate without the attenuation of nitrate by denitrification. The presence of ammonium at several of the wells with excess N_2 indicates a component of wastewater seepage in wells located near lagoons, where mixing of oxic waters with anoxic lagoon seepage may induce both nitrification and denitrification. Wells that are located in the surrounding fields have high NO_3^- concentrations, and do not have any detectable excess N_2 , a result consistent with mass-balance models of nitrate loading and groundwater nitrate concentration (5).

While dairy operations seem likely to establish conditions conducive to saturated zone denitrification, the prevalence of the phenomenon is not known. Major uncertainties include the spatial extent of anaerobic conditions, and transport of organic carbon under differing hydrogeologic conditions and differing nutrient management practices. Lagoon seepage may also increase the likelihood of denitrification in dairy aquifers. The extent to which dairy animal and field operations affect saturated zone denitrification is an important consideration in determining the assimilative capacity of underlying groundwater to nitrogen loading associated with dairy operations.

Acknowledgments

This work was performed under the auspices of the U.S. Department of Energy by University of California, Lawrence Livermore National Laboratory under Contract W-7405-Eng-48. Funding for this project was from the California State Water Resources Control Board Groundwater Ambient Monitoring and Assessment Program and from the LLNL Laboratory Directed Research and Development Program. We thank Mark Conrad and Katharine Woods for use of the LBNL Center for Isotope Geochemistry's stable isotope lab and help with analyses. We are grateful for the efforts of two journal reviewers, who provided helpful critiques of this work.

Supporting Information Available

A table of chemical, isotopic, and dissolved gas results from this study, a plot of apparent age with depth, and detailed descriptions of the study sites. This material is available free of charge via the Internet at <http://pubs.acs.org>.

Literature Cited

- (1) Fan, A. M.; Steinberg, V. E. Health implications of nitrate and nitrite in drinking water - an update on methemoglobinemia occurrence and reproductive and developmental toxicity. *Regulat. Toxicol. Pharmacol.* 1996, 23, 35-43.
- (2) Nolan, B. T.; Hitt, K. J.; Ruddy, B. C. Probability of nitrate contamination of recently recharged groundwaters in the conterminous United States. *Environ. Sci. Technol.* 2002, 36, 2138-2145.
- (3) California Department of Health Services Geotracker Database. State Water Resource Control Board of California: Sacramento, CA, 2003. <http://geotracker.swrcb.ca.gov/>.
- (4) Squillace, P. J.; Scott, J. C.; Moran, M. J.; Nolan, B. T.; Kolpin, D. W. VOCs, pesticides, nitrate, and their mixtures in groundwater used for drinking water in the United States. *Environ. Sci. Technol.* 2002, 36, 1923-1930.
- (5) Harter, T.; Davis, H.; Mathews, M. C.; Meyer, R. D. Shallow groundwater quality on dairy farms with irrigated forage crops. *J. Contam. Hydrol.* 2002, 55, 287-315.
- (6) Cameron, K. C.; Di, H. J.; Reijnen, B. P. A.; Li, Z.; Russell, J. M.; Barnett, J. W. Fate of nitrogen in dairy factory effluent irrigated onto land. *N. Z. J. Agric. Res.* 2002, 45, 217-216.
- (7) Mariotti, A.; Landreau, A.; Simon, B. ^{15}N isotope biogeochemistry and natural denitrification process in groundwater: Application to the chalk aquifer of northern France. *Geochim. Cosmochim. Acta* 1988, 52, 1869-1878.
- (8) Puckett, L. J.; Cowdery, T. K.; Lorenz, D. L.; Stoner, J. D. Estimation of nitrate contamination of an agro-ecosystem outwash aquifer using a nitrogen mass-balance budget. *J. Environ. Qual.* 1999, 28, 2015-2025.
- (9) Puckett, L. J.; Cowdery, T. K. Transport and fate of nitrate in a glacial outwash aquifer in relation to ground water age, land use practices, and redox processes. *J. Environ. Qual.* 2002, 31, 782-796.
- (10) Korom, S. F. Natural denitrification in the saturated zone - a review. *Water Resour. Res.* 1992, 28, 1657-1668.
- (11) DeSimone, L. A.; Howes, B. L. Nitrogen transport and transformations in a shallow aquifer receiving wastewater discharge: A mass balance approach. *Water Resour. Res.* 1998, 34, 271-285.
- (12) Casciotti, K. L.; Sigman, D. M.; Hastings, M. G.; Bohlke, J. K.; Hilkert, A. L. Measurement of the oxygen isotopic composition of nitrate in seawater and freshwater using the denitrifier method. *Anal. Chem.* 2002, 74, 4905-4912.

STILL HAVE QUESTIONS? GET ANSWERS HERE!

Here are three ways to get more information quickly and easily:

- Check out the 'frequently asked questions' below, or
- Attend one of the free informational meetings near you, or
- Call someone from the list of knowledgeable volunteers to learn more! (see reverse side)

FREQUENTLY ASKED QUESTIONS

HOW LONG DO I HAVE TO SIGN UP ?

Return your application postmarked no later than Dec. 27, 2010. Earlier is preferred to speed processing. While CVDRMP has tried to give dairy owners and operators adequate time to consider this opportunity, we encourage you not to wait until the last minute to make your decision. Should you decide to join, be sure to include your completed payment form (**Consent to Milk Check Deduction**), signed **Participation Agreement** and signed **Letter of Intent**.

WHAT IF I MISS THE DEADLINE OR WANT TO JOIN LATER?

Late applicants risk not being admitted to the program. If you are admitted late, the CVDRMP Board will charge a minimum \$1,000 penalty plus back dues to the beginning of the program.

AM I REQUIRED TO JOIN THIS PROGRAM?

This program is absolutely voluntary. It is intended to provide a lower cost alternative to the current regulatory requirement that all Central Valley dairies install monitoring wells at their own costs (and also draw and analyze samples and submit reports on the results at their own costs). You are not required to pursue this alternative. However, if you choose not to participate in this program you will still need to install wells.

SO WHAT'S THE BENEFIT TO ME?

The major benefit for participants is significant cost savings and reduced record-keeping. Instead of installing your own monitoring wells (costs estimated to average about \$42,000 across the industry) and then pay hundreds or thousands of dollars per year for ongoing sampling and reporting, you will participate in a program that shares costs among participating dairymen.

(Continued on page 2)

WORKSHOP SCHEDULE

Kern County: Friday, November 12, 10-11 a.m. UC Cooperative Extension, 1031 S. Mt. Vernon Avenue, Bakersfield

Kings County: Monday, November 15, 10-11 a.m. Kings County Ag Center Multi Purpose Room, UC Cooperative Extension, 680 Campus Drive, Hanford

Tulare County (two meetings):
Monday, November 15, 1:30 p.m.
Tuesday, November 16, 1:30 p.m.
Tulare County Ag Center auditorium, 4437 S. Laspina, Tulare

San Joaquin County: Wednesday, November 17, 10 a.m., Robert J. Cabral Ag Center Conference Room, 2101 E. Earhart Ave., Stockton

Stanislaus County (two meetings):
Wednesday, November 17, 1:30 p.m., Stanislaus Building, Room "HI", Stanislaus County Ag Center, 3800 Cornucopia Way, Modesto

Thursday, November 18, 10 a.m., Harvest Hall, Room ABC, Stanislaus County Ag Center, 3800 Cornucopia Way, Modesto

Fresno County (two meetings):
Thursday, November 18, 1:30 p.m.
Tuesday, November 23, 1:30 p.m.
Conference Room, Fresno County Farm Bureau, 1274 W. Hedges Ave., Fresno

Sacramento County: Friday, November 19, 10 a.m., Conference Room, Sacramento County Farm Bureau, 8970 Elk Grove Blvd., Elk Grove

Glenn County: Monday, November 22, 10 a.m., UC Cooperative Extension Office, 821 E. South Street, Orland

Merced County: Tuesday, November 23, 10 a.m., Merced County Farm Bureau, 646 S. State Highway 59, Merced

| Herd Size | Number of Herds with this Size | Total Number of Cows | Percentage of Each Group |
|--|--------------------------------|----------------------|--------------------------|
| TULARE COUNTY | | | |
| < 300 cows | 5 herds | 679 | 0.27% |
| 301-700 cows | 10 herds | 5533 | 2.23% |
| > 701 cows | 119 herds | 241080 | 97.50% |
| CENTRAL VALLEY REGION (excluding Tulare County) | | | |
| < 300 cows | 54 herds | 8472 | 0.87% |
| 301-700 cows | 125 herds | 71500 | 7.40% |
| > 701 cows | 312 herds | 891612 | 91.77% |
| NORTH BAY AND NORTH COAST | | | |
| < 300 cows | 52 herds | 9471 | 24.20% |
| 301-700 cows | 40 herds | 17586 | 44.90% |
| > 701 cows | 11 herds | 12087 | 30.90% |

Source: Tulare DHIA and California DHIA



California Regional Water Quality Control Board

San Francisco Bay Region



Arnold Schwarzenegger
Governor

Tammien
etary for
on '21
tec

1515 Clay Street, Suite 1400, Oakland, California 94612
(510) 622-2300 • Fax (510) 622-2460
<http://www.swrcb.ca.gov/fwqcb2>

ANNUAL CERTIFICATION REPORTING FORM

DAIRY WAIVER COMPLIANCE DOCUMENTATION

Facility Information

Name of Dairy _____
 Address (location) _____

 Name of Operator _____
 Mailing Address _____

 Name of Owner _____
 Mailing Address _____

Pre-Rainy Season Facility Evaluation

Attach Photo-Documentation for each *Yes*, and explanations for each *No* or *Not Applicable* response.

- Runoff from all roofed areas is diverted away from confined or heavily manured areas through working gutters or other means.
 Yes No Not Applicable
- Berms, ditches and other measures used to divert precipitation and surface drainage away from manured areas or waste impoundments are adequately maintained and protected against erosion.
 Yes No Not Applicable
- All uncovered confined or heavily manured areas including corrals, feeding, watering or loafing areas, not draining into waste containment facilities have been scraped clean and/or otherwise protected.
 Yes No Not Applicable
- Animals have been relocated away from all uncovered confined areas not draining into waste containment facilities.
 Yes No Not Applicable
- All waste containment facilities, pumping equipment, pipes and other conveyances have been inspected and maintained and are free of leaks.
 Yes No Not Applicable

DAIRY WAIVER - ANNUAL COMPLIANCE CERTIFICATION REPORT FORM

6. All waste containment ponds have been emptied, properly maintained and protected from inundation or washout.

Yes No Not Applicable

7. Wastes, liquids or manure solids have been applied to land located a safe distance from waterways, flood-prone and heavy run-off areas prior to the middle of October.

Yes No Not Applicable

Photo Documentation

Has the Photo-Documentation of the activities identified in Items 1 through 7 above been collected and attached to this Annual Certification Report Form?

Yes No *If not, explain* _____

Note: This Annual Certification Report Form will be deemed incomplete if detailed explanations are not provided for each *No* or *Not Applicable* response given to Items 1 through 7 above.

Name & Title of Person or Persons Conducting the Inspection(s):

Date(s) of Pre-Rainy Season Inspections: _____

8. In accordance with the Waiver monitoring conditions, have facility inspections been conducted throughout the year, and are records of the inspection dates, observations, and any corrective actions implemented maintained at the dairy? *These records must be made available for review by Water Board staff upon request during a site inspection.*

Yes No *If not, explain* _____

Certification

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Printed Name: _____ Title: _____

Signature: _____ Date: _____

also allows necessary improvements to be planned so they can be implemented in an effective and efficient manner that protects water quality throughout the Region.

II. The Central Valley Water Board Already Made a Factual Determination About Many Issues Raised by Sweeney Dairy in its Evidence Submission.

The Central Valley Water Board has already determined that Sweeney Dairy is subject to the reporting requirements of the Dairy General Order, and has previously voted to adopt an administrative civil liability against it for a failure to file the 2009 Annual Report and a Waste Management Plan (Administrative Civil Liability Order [ACLO] R5-2011-0068, adopted on 13 October 2011). In its June 19, 2012 evidence submission for the present matter, Sweeney Dairy raises many of the exact same issues previously raised in its briefs and evidence submissions for ACLC R5-2011-0562. These issues were considered and addressed in adjudicative proceedings by both a Hearing Panel of three board members, and the full Central Valley Water Board. ^{of which I have contended that 2 members served in violation} The Board found Mr. Sweeney's arguments to be unpersuasive, and imposed administrative civil liability based on Sweeney Dairy's failure to comply with the reporting requirements of the Dairy General Order.

The Prosecution Team believes that many of Sweeney Dairy's arguments in its June 19, 2012 evidence submission are duplicative to arguments raised during the adjudicative proceedings for ACLO R5-2011-0068. As such, they should be barred for reconsideration by collateral estoppel (*People v. Sims* (1982) 32 Cal.3d 468, 489). Collateral estoppel bars the relitigation of issues of fact or law that have already been necessarily determined as part of an earlier case. It ^{under appeal} promotes judicial economy, preservation of the integrity of the judicial system by avoiding ^{for same reasons} inconsistent judgments, and protection of litigants from harassment by repeated litigation (*Lucido v. Superior Court*, supra, 51 Cal.3d at pp. 342-343).

Collateral estoppel extends to agency determinations of legal issues (*Guild Wineries and Distilleries v. Whitehall Co., LTD* (9th Cir. 1988) 853 F.2d 755, 758-759, citing *United States v. Utah Construction Company* (1966) 384 U.S. 394) Collateral estoppel applies in claims brought

in future administrative proceedings if the agency met the prerequisite requirements when arriving at its decision in the first instance: (1) the issue decided in a prior proceeding is identical to the issue sought to be relitigated, (2) the issue was actually litigated in the prior proceeding, (3) the issue was necessarily decided in the prior proceeding, (4) the prior proceeding resulted in a final judgment on the merits, and (5) the party against whom collateral estoppel is asserted is the same as, or in privity with, a party to the prior proceeding (*Lucido v. Superior Court* (1990) 51 Cal.3d 335, 341). In addition, in evaluating whether to apply collateral estoppel, an agency must consider the public policies underlying the doctrine. *Ibid.* at 342-343.

Sweeney Dairy should be barred from relitigating the issues that have been previously resolved by this Board. All of the prerequisites to the application of collateral have been satisfied. First, Sweeney Dairy's current evidentiary submission repeats verbatim the same contentions and arguments that were made in evidence submissions for the previous enforcement action. Second and Third, Sweeney Dairy seeks to relitigate issues that were properly raised during the administrative proceedings for ACLC R5-2011-0562 and decided by the Central Valley Water Board. Fourth, the previous proceeding resulted in a final judgment on the merits, which was memorialized in ACLO R5-2011-0068. Fifth, Sweeney Dairy is the same party involved in both the present issue and ACLC R5-2011-0562. Finally, public policy supports the application of the collateral estoppel doctrine, as precluding Sweeney Dairy from raising the same issues in successive petitions will promote judicial economy and protect the Central Valley Water Board from being harassed by repeated litigation.

A. ACLC R5-2012-0542 is not premature and does not result in a deprivation of Sweeney Dairy's Due Process

1. Sweeney Dairy's Arguments are Duplicative and Should be Barred for Reconsideration by Collateral Estoppel

Sweeney Dairy argues that the Central Valley Water Board cannot take enforcement action against Sweeney Dairy under ACLC R5-2012-0542 until it has "heard and denied our request and after we have exhausted all appeal and other legal remedies afforded us under the Water

A. Mr. Sweeney's Attack on the Dairy General Order is Untimely

In his 19 June 2012 submission, Mr. Sweeney argues that the Dairy General Order is invalid for a number of reasons detailed in Section E.2. of his evidence submission. Some of the evidence submitted by Mr. Sweeney is new to this proceeding. However, the underlying basis for the challenge remains the same. Mr. Sweeney is attempting to challenge the validity of the Dairy General Order in an enforcement proceeding. This is a collateral attack on the Order itself (Transcript from July 14, 2011 Panel Hearing, p. 24). The Central Valley Water Board contemplated this argument in July, 2011 and October, 2011 and rejected it.

The appropriate window of time to challenge the reporting requirements in Monitoring and Reporting Program No. R5-2007-0035 has passed. If Mr. Sweeney felt aggrieved by either the reporting requirements or the deadlines in which to submit the reporting requirements as established in Table 1 of the MRP, these issues should have been raised within the appropriate time period subsequent to the Dairy General Order's adoption. Pursuant to CWC section 13320, Mr. Sweeney had 30 days following 3 May 2007 to petition the Central Valley Water Board's action in adopting the Dairy General Order. This subsequent attempt to challenge the legality of the reporting requirements in the Dairy General Order in the present enforcement proceeding is merely a collateral attack on the Dairy General Order and should not be permitted.

Moreover, challenging the legality of the underlying requirement in the MRP, specifically the requirement to submit the 2010 Annual Report, at this juncture is also improper based on the Discharger's previous acquiescence to the very requirements he is now challenging.

Previously, the 2007 and 2008 Annual Reports were timely submitted by the Discharger.

(Attachment 1 with date stamp received.) Subsequent arguments in this proceeding challenging the annual reporting requirements should be deemed waived based on the Discharger's previous compliance with those very same requirements in the MRP. It was not until the

did not require

↑ Did Rose Parks sit in the back previous

To: Ellen Howard ehoward@waterboards.ca.gov

Date: July 16, 2012

Re: Sweeney Dairy – ACL Complaint R5-2012-0542

Dear Ms. Howard:

As we continue to prepare for the August hearing before the CVRWQCB, we have decided we need to know who the current Regional Board members are. As to each board member we request copies of any and all documents that reflect their appointment by the governor to the board for their current term, as well as their confirmation by the State Senate of such appointment.

The above request is made under the California Public Records Act. Please let us know of the costs of making such copies and of mailing them to us, and we will promptly send payment.

Sincerely,

Jim Sweeney

Cc: amayer@waterboards.ca.gov

klandau@waterboards.ca.gov

dessary@waterboards.c.gov

Date: July 20, 2012

To: Central Valley Regional Water Quality Control Board

Advisory Team

Kenneth Landau klandau@waterboards.ca.gov

Alex Mayer amayer@waterboards.ca.gov

Prosecution Team

Pamela Creedon

Clay Rodgers

Doug Patteson

Dale Essary dessary@waterboards.ca.gov

Ellen Howard ehoward@waterboards.ca.gov

Vanessa Young vyoung@waterboards.ca.gov

Re: Written Testimony submitted to the Central Valley Regional Water Quality Control Board for consideration at the August 2/3, 2012 Hearing on Administrative Civil Liability Complaint R5-2012-0542

A. Introduction.

We are James G. Sweeney and Amelia M. Sweeney, doing business as Sweeney Dairy, and are the "Dischargers" named under the Central Valley Regional Water Quality Control Board's Administrative Civil Liability Complaint R5-2012-0542 (Complaint). Our address is 30712 Road 170, Visalia, CA 93292. Our telephone number is (559) 280-8233 and our email address is japlus3@aol.com.

B. Statement of Facts/Background.

1. We operate a small dairy at 30712 Road 170, Visalia, CA. We milk around 300 cows on a site where a dairy has continuously been conducted for over eighty years.

2. The Regional Board's Order No. R5-2007-0035 (2007 Order) compelled us, along with all other dairymen, to prepare and file all of the following reports with the Regional Board by July 1, 2009. The Regional Board amended the 2007 Order in 2009 with Order No. R5-2009-0029 (2009 Order) in which the filing date for these reports was extended for one year, to July 1, 2010. The 2009 Order cited financial distress in the dairy industry as the justification for the extension. The 2009 Annual Report, due on July 1, 2010, consisted of an Annual Dairy Facility Assessment for 2009, and a Waste Management Plan (WMP), which consisted of the following reports:

- (a) Retrofitting Plan for needed improvement to storage capacity, flood protection or design of the production area.
- (b) Dairy site and Cropland maps.
- (c) Wastewater lagoon capacity evaluation.
- (d) Flood protection evaluation.
- (e) Dairy and cropland design and construction evaluation.
- (f) Cross-connection assessment report.

The 2010 Annual Report, due on July 1, 2011, consisted of the following reports:

- (a) Nutrient Monitoring Element:
 - (1) Waste Water, amounts and test results
 - (2) Manure, amounts and test results
 - (3) Crop, amounts and test results
- (b) Groundwater Monitoring Element (domestic and ag wells), test results.
- (c) Certification of Nutrient Monitoring Program "retrofitting."
- (d) Certification of storage capacity "retrofitting."
- (e) Certification of flood protection "retrofitting."
- (f) Certification of housing and manure storage area "retrofitting."

The 2007 Order required most of the 2009 and 2010 reports, technical and otherwise, to be prepared by licensed professionals/engineers and consultants, with all of the sample testing to be done by licensed laboratories, all of which are very expensive.

3. During 2008 and 2009, the dairy industry suffered through a dreadful period due to a combination of low milk prices and high feed costs that were unprecedented in recent memory. Virtually all dairies, large and small, had to borrow substantially in order to remain in business. It was a period from which most dairymen have not yet financially recovered. Indeed, the Regional Board's 2009 Order (R5-2009-0029) acknowledged the seriousness of the situation, and recited that "CARES points out that the cost of the report can be as high as \$30,000.00 per facility." As a result, the Order postponed for a year the filing of these reports. In this manner, the Board accepted the notion not only that these reports were very expensive, but that their costliness was a justifiable reason for postponement of the filing of the reports. (Exhibit 1)
4. This year, the dairy industry has returned to a period of low milk prices and high feed and energy costs. For most, there is insufficient revenue to pay all bills, and because of seriously depleted equity, lenders are unwilling to loan additional funds to most dairies to make up the shortfall.

5. Environmental groups have often been critical of large dairies, referring to them as “mega dairies” and “factory farms.” Larger dairies discharge larger volumes of waste and generally pose a greater potential threat to our groundwater. Yet, in adopting the 2007 Order, the Regional Board imposed very costly monitoring and reporting requirements that are pretty much the same for all dairies, regardless of size. Because smaller dairies have fewer cows over which to spread these fixed regulatory costs, it is much more burdensome, and puts them at an even greater competitive disadvantage. In some cases it is fatal, and we know of a number of small dairies who told us that they sold out because they could not afford the costs of complying with the new reporting requirements imposed by the 2007 Order.
6. In response to our request, the Regional Board’s staff supplied us with data (broken down by herd size) that show the number of dairies that filed reports in the Fresno Office in 2010, versus 2007. While there was less than a 1% decline in the number of large dairies (over 700 cows) filing reports between 2007 and 2010, there were 36% fewer medium sized dairies (between 400 and 700 cows), and 46% fewer small dairies (less than 400 cows) that filed reports in 2010 than did in 2007. So the evidence is not just anecdotal; the data shows that it was the smaller dairies that were disappearing in much larger measure during this financially stressful period. There should be no dispute that the Regional Board’s costly reporting requirements as set forth in the 2007 Order are a contributing reason why large dairies are growing even larger, and are taking over the production lost by the small dairies going out of business.
7. As a result of the financial situation in which we found ourselves in 2009 and 2010, we wrote a letter dated March 28, 2010 to the Regional Board’s staff – more than three months before the July 1, 2010 filing deadline - in which we asked for a waiver from submitting these reports. (Exhibit 2) We wrote a follow-up letter dated April 7, 2010 to the Regional Board staff in which we requested a one-year suspension of filing the reports. (Exhibit 3) Anticipating that the staff would refuse to grant said relief, we stated in both of these letters that if the staff was unable to grant our request, to please schedule the matter for a face-to-face hearing before the Regional Board at a future meeting so that we could present our request for relief to the Board.
8. The Regional Board’s staff replied to our March 28 and April 7 letters by a letter dated June 15, 2010, in which they did not agree to our request to a one-year suspension, and they did not schedule a hearing before the Regional Board as we had asked. Instead, they advised us that we could address the Board during the “Public Forum” section of their agenda. Such presentations are limited to three (3) minutes. (Exhibit 4)
9. Concluding that three minutes was completely inadequate to present all of our evidence and arguments, we again asked the staff in a letter dated June 27, 2010 to schedule a full hearing before the Regional Board, and it was ignored. (Exhibit 5)
10. On August 20, 2010, we received a Notice of Violation dated August 16, 2010 from the Regional Board staff charging us with failing to file the July 1, 2010 reports.

11. In a letter to the Regional Board's staff dated August 22, 2010 we again mentioned our request for a hearing before the Regional Board. (Exhibit 6) Again, the staff continued to ignore our request. We later found out why. At the July 14, 2011 hearing before the Hearing Panel, Mayumi Okamoto, one of the Regional Board's legal counsel, stated that "the decision to place a matter on the agenda remains with the discretion of your [Regional Board's] management in consultation with the Executive Officer as the *gatekeeper*." (Exhibit 7) Regional Board staff member, Clay Rodgers, also testified that "Mr. Sweeney did approach us to ask for an extension. We decided that an extension, as the *gatekeepers* to the Board, that the extension of the Waste Management Plan had already been granted. ... And we did not feel that the extension of the annual report would be appropriate." (Exhibit 8)

While the Regional Board may delegate some of its powers and duties, some are not delegable. According to Section 13223 (a) of the California Water Code, the modification of any waste discharge requirement is one of those powers and duties that is not delegable. It is the Regional Board's nondelegable duty and responsibility to hear and decide, or to refuse to hear and decide, our request for a modification of the waste discharge requirements contained in the 2007 Order. Since Section 13223 (a) grants only the Regional Board the authority to make such determinations, Ms. Okamoto and Mr. Rodgers both admitted that the staff operated outside their legal authority.

12. On May 10, 2011 an Administrative Civil Liability Complaint, R5-2011-0562, (2011 Complaint) was served on us for failing to file the July 1, 2010 reports, and seeking civil penalties against us in the amount of \$11,400.00. Oddly, the Complaint prejudicially failed to mention our multiple efforts to schedule a hearing before the Regional Board to seek relief.
13. On July 1, 2011, the 2010 Annual Reports became due, but we did not file them as we were still seeking a hearing before the Regional Board to obtain relief from having to file them.
14. On September 21, 2011, we emailed Alex Mayer, one of the Regional Board's legal counsel, wherein we again asked that a hearing be scheduled before the Regional Board where we could ask the Board for a modification of the reporting requirements of the 2007 Order. (Exhibit 9)
15. We were advised by Mr. Mayer's email dated September 29, 2011 that he had no authority to schedule the hearing we requested before the Board, but that we could appear before the Board as "a member of the public" and would be allowed only three minutes to speak during their "public forum" section of their agenda. (Exhibit 10)
16. On October 2, 2011, eleven days before the Regional Board's October 13, 2011 hearing, we submitted our written testimony and all of our arguments to the Regional Board by sending it to its counsel, Mr. Mayer. This thirteen-page document included another written request for a hearing before the Regional Board where we could request a

modification of the reporting requirements. The document included a great deal of evidence and all of our arguments opposing the ACL Complaint and supporting our request. (Exhibit 11)

17. On October 13, 2011, we appeared at the hearing before the Regional Board on the 2011 Complaint. As shown by the transcript of the hearing, Mr. Mayer mentioned our October 2 document, but he recommended that it not be accepted into the record. Chair Hart, without asking for our response, immediately ruled that it would not be accepted. She then informed us that we would only be given five minutes and that I was limited to testifying only about the dairy herd size data (not a particularly significant issue). (Exhibit 12) I began reading a two-page presentation, beginning with an introduction. One minute into the presentation, just as I was beginning to request a specific hearing for a modification of the 2007 Order's reporting requirements, Board legal counsel Okamoto interrupted me and objected to what I was beginning to request. Chair Hart responded by telling me the following untrue statement: "We are fully advised what your position is." Chair Hart then ordered me to limit my comments to just the herd size data. (Exhibit 13) I began commenting on the herd size data. However, the hearing transcript shows how, during that time, the Chair, Mr. Landau and both legal counsel interrupted me, debated the herd size issue, and ended up taking up much of my five minutes. Then Chair Hart stopped me and said "Thank you Mr. Sweeney and your time is up." The Regional Board then went ahead and moved, seconded and voted to adopt the proposed order for civil liability against us in the amount of \$11,400.00.
18. We were sent an email on October 25, 2011 by Ken Landau, Assistant Executive Officer of the Regional Board, in which he listed the documents that had been "made available to the Board members for their consideration at the 13 October hearing." (Exhibit 14) Although I had expected my October 2 written testimony/argument document to have been given to the Regional Board members to read before the hearing, Mr. Landau's email revealed that our October 2 document was not on the list of documents given to the Board, confirming that the its counsel and the staff had withheld it from them. Therefore, the record is clear that our request and the supporting reasons for a modification hearing was neither read nor considered, nor acted upon by the Regional Board as part of the action it took against us at the October 13 hearing.
19. On November 9, 2011, we appealed all of the Regional Board's decisions at its October 13, 2011 hearing by filing a Petition with the State Water Resources Control Board (A-2190). Said petition/appeal is still pending decision before the State Board.
20. On May 9, 2012 an Administrative Civil Liability Complaint, R5-2012-0542 (2012 Complaint), was mailed to us for failing to file the reports due on July 1, 2011. The Complaint seeks civil penalties against us in the amount of \$7,650.00. The Complaint fails to mention our efforts to secure a hearing before the Regional Board to obtain relief from these reporting requirements. It also fails to note that the Regional Board failed to grant us such a hearing, and that this failure is currently under appeal by us to the State Water Resources Control Board.

C. Legal Arguments and Analysis.

1. **The 2012 Administrative Civil Liability Complaint (R5-2012-0542) is legally defective because it is premature and is the result of us being deprived of due process.**
 - (a) The 2007 Order declares that it “serves as general waste discharge requirements of waste from existing milk cow dairies ... of all sizes.” (2007 Order, p.1) The Order describes the procedures where a Discharger makes a request for a modification of the Order or of any of its general waste discharge requirements. (2007 Order, SPRR-2) The reporting requirements, including the filing deadlines for annual and technical reports, are part of the Order’s general waste discharge requirements for which someone like us may seek modification, exemption or other similar relief.
 - (b) Addressing waste discharge requirements, Section 13263 (e) provides that “(e) Upon application by any affected person, or on its own motion, the regional board may review and revise requirements ...” Therefore, we, as affected persons, have the right to apply to the Regional Board for a *modification* or *revision* of the general waste discharge requirements, including the reporting requirements contained in the 2007 Order.
 - (c) Section 13269 (a) (1) and (2) of the Water Code goes on to say that a regional board may *wave* waste discharge requirements (dealt with in section 13263) as they apply to the performance of an individual, such as ourselves.
 - (d) Section 13223 (a) of the Water Code specifies that the regional board may not delegate modification of waste discharge requirements. It is the regional board’s undelegable duty and responsibility to hear and decide our request for relief from these waste discharge requirements. The staff cannot appoint itself as the “gatekeepers” in these matters, and the board is prohibited under section 13223 (a) and other applicable law to appoint the staff as “gatekeepers.” This is why it is odd that the Prosecution’s counsel so readily admits in her rebuttal statement that the Regional Board’s staff and Executive Officer can act as “the gatekeepers” in matters concerning requests for modification of WDRs.

We have a right to appear before the Regional Board to ask for a modification or waiver from any of the Order’s WDRs. Even a decision to not grant us a hearing on our request for relief would have to be made by the Regional Board - not by its staff. The evidence in the record is that our requests for such a hearing were never communicated to the Board by the staff and there is no evidence in the record that the Board deliberated and voted on whether or not to grant us such a hearing. Page 30 of the October 13, 2011 hearing transcript (Exhibit 15) clearly shows that the Board moved, seconded and approved “the motion,” which was only to impose the civil liability penalty sought against us for failing to file the 2009 Annual Reports. There was no discussion or debate among the Board members about whether to grant us a hearing to request a modification, and there was nothing said by any of them that can

be construed as an acknowledgment that we had made such a request, or that they had voted to deny such a request.

In preventing our request for such a hearing from being heard and decided by the Board, the staff acted unlawfully and beyond their statutory authority. They deprived us of due process and violated our civil rights.

- (e) Had the Regional Board's staff scheduled such a hearing before the Board, as we had requested over and over, there is the possibility that the Board would have granted us relief from some or all of those reporting requirements, including the July 1, 2011 deadline, in which case, we would not be in violation of the reporting requirements. The Regional Board cannot contend that we have violated the 2007 Order's reporting requirements due on July 1, 2011 until such time as the Regional Board has heard and denied such a request and after we have exhausted our appeal and all other legal remedies afforded us under the Water Code. (Water Code Sections 13320, 13325, and 13330) Thus, the filing and serving of the 2012 Complaint is premature.

2. Order R5-2007-0035 is unlawful and unenforceable against us because it fails to comply with applicable law, including provisions of the Water Code and Government Code.

(a) **The need for the 2007 Order is not supported by substantial evidence.** No rule or regulation of a state agency is valid and enforceable unless the administrative record shows that it is supported by substantial evidence. We have reviewed all 34,000 pages of the administrative record of the hearings held in connection with the adoption of the 2007 Order, and we found no substantial evidence – in fact, no evidence whatsoever – that supports the need to replace the former reporting requirements with the new reporting requirements adopted in the 2007 Order. We have encountered no evidence in the record that the data, reports and information that the Regional Board staff obtained from or about dairies prior to the 2007 Order were inadequate, insufficient, unreliable or otherwise flawed. And we have encountered no evidence in the record that claimed or demonstrated that the new reporting requirements were necessary or needed to replace the former.

(b) **The Regional Board has not shown the need for the reports specified in the 2007 Order and has not justified their burden.** The “Monitoring and Reporting Program” of the 2007 Order recites that it is issued pursuant to Water Code Section 13267. (2007 Order, p. MRP-1) Section 13267 (b) (1) states that “the regional board may require that any person who ... discharges ... waste within its region ... shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires.”

But Section 13267 (b) (1) goes on to say that “The burden, including costs, of the reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring these 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.”

The Regional Board has failed to comply with Section 13267 in that the 2007 Order does not contain “a written explanation with regard for the need for the reports,” and it fails to “identify the evidence that supports requiring [us] to provide the reports.” In addition, the Regional Board never provided us with “a written explanation with regard for the need for the reports,” and it did not “identify the evidence that supports requiring [us] to provide the reports.”

Over the years, the Regional Board’s staff visited our dairy site to inspect and obtain information about it. For example, staff member Ken Jones visited our dairy in 2003 and spent one day gathering information. He measured and calculated the storage capacity of our three waste water lagoons and concluded that our storage capacity exceeded what the Regional Board required. In fact, it was 128% of what was required. He also concluded that we had sufficient cropland for application of waste water. We have his letter dated April 17, 2003, confirming that our dairy was in full compliance with all Regional Board requirements. (Exhibit 16) We are prepared to submit evidence that our dairy has essentially the same number of animals, the same lagoon capacity and even more cropland now than we had in 2003.

The 2007 Order, at page MRP-7, orders dairymen to “sample each domestic and agricultural supply well,” and to submit the laboratory analysis for nitrate-nitrogen to it on an annual basis. In 2003, 2007 and 2010, we submitted to the Regional Board staff test results from water samples taken from our supply wells:

Our 2003 groundwater supply well test results:

| | | |
|--------------------|---------------|----------|
| Irrigation Well #1 | Nitrate (NO3) | 2.0 mg/L |
| Domestic Well | “ “ | 3.2 mg/L |

Our 2007 groundwater supply well test results:

| | | |
|--------------------|---------------|----------|
| Irrigation Well #1 | Nitrate (NO3) | 1.1 mg/L |
| Irrigation Well #2 | “ “ | 1.2 mg/L |
| Domestic Well | “ “ | 3.2 mg/L |

Our 2010 groundwater supply well test results:

| | | |
|--------------------|---------------|----------|
| Irrigation Well #1 | Nitrate (NO3) | 1.1 mg/L |
| Irrigation Well #2 | “ “ | .2 mg/L |
| Domestic Well | “ “ | 1.4 mg/L |

As stated earlier, a dairy has continuously operated on our site for over eighty years, but as can be seen above, these supply well test results have ranged between .2 and 3.2 mg/L. They are all incredibly low levels, well below the state’s maximum contaminant level (MCL) of 10.0 mg/L.

We have argued to the Regional Board staff that the above test results are compelling evidence that our operation was and is not adversely impacting ground water, and therefore the cost of filing these reports due July 1, 2011 did not and do not, in the words of Section 13267, "bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports." But the Regional Board recently brushed off these results by telling us in a letter dated May 23, 2012 that "Groundwater supply wells are typically screened in deeper aquifer zones ... groundwater quality data collected from the Dairy's on-site supply wells do not necessarily represent the quality of first encountered groundwater beneath the Dairy."

The Regional Board has the audacity to tell us this after demanding for years that we test our supply wells and send them these costly results. And now they tell us that they are meaningless. Absolutely outrageous!

It is actually worse than that. The Regional Board has recently been advising dairymen, including us, that as an alternative we can join a "Representative Monitoring Program," (RMP) and the results from RMP monitoring wells can be submitted and will be treated as satisfying the monitoring well requirement. (Exhibit 17) I then asked the Regional Board staff what RMP they would accept for my dairy. Clay Rodgers responded with an email dated May 27, 2012 in which he informed me that I could join the Central Valley Dairy Representative Monitoring Program (CVDRMP) administered by CARES in Sacramento. (Exhibit 18) I checked with CARES and was advised by email dated May 29, 2012 that it would accept my application to join the program. (Exhibit 19) I also discovered that the nearest CVDRMP monitoring wells are many, many miles away from my dairy. After being admonished by the Regional Board staff that my supply well test results "do not necessarily represent the quality of first encountered groundwater beneath the Dairy," they then tell me they will accept the results from monitoring wells that are miles and miles away from my dairy as meaningful information! This is insanity of the highest level. One cannot imagine a more egregious example of the worthlessness of the reports that the 2007 Order and the staff require.

In conclusion, the reports due on July 1, 2011 were, for the most part, redundant, duplicative, unneeded, unjustified and added nothing useful or valuable, besides being terribly costly. In this regard, the Regional Board's refusal to accept already available information in its files ignores Section 13267's requirement that the reports should "bear a reasonable relationship to the need for the reports."

(c) The 2007 Order fails to implement the most modern and meaningful scientific findings and technologies. Section 13263 (e) of the Water Code provides that "any affected person may apply to the regional board to review and revise its waste discharge requirements. All requirements shall be reviewed periodically." If new and more cost effective ways can accomplish the same purpose, we contend that the above section imposes on the Regional Board a legal duty to review such issues and revise its requirements accordingly. New and old research and advanced

technologies presently exist which may provide less expensive means for evaluating groundwater contamination risk, of determining non-contamination of groundwater, and of using less expensive practices that can still prevent such contamination.

For example, Lawrence Livermore National Laboratory published two papers in 2007 in *Environmental Science Technology*, (2007) 41, 753-765, (Exhibits 20 and 21) in which they stated that they discovered that soil bacteria break down and eliminate nitrates in dairy waste water in a substantial if not complete degree. They have also ascertained that there are certain compounds and gasses in manure water that can be used to determine whether water from dairy lagoons or from waste applied in irrigation water has infiltrated into first encountered groundwater. There are also simple and inexpensive ways to show the amount of highly compacted clay layers sitting beneath a dairy site and whether they constitute an impervious barrier between the dairy and the groundwater. Yet, the 2007 Order contains a “one-size-fits-all” approach, and generally requires reports that provide little to no meaningful information. Indeed, some of these reports are ludicrous and unnecessary. One example is that we are required to provide monthly photos of our lagoons to show that the water level was not too high during the month. This is as absurd as requiring us to photograph our speedometer to prove we didn’t drive over the speed limit during the month.

In short, most of the Order’s reporting requirements are primitive, antiquated, obsolete, and provide nothing of real value, except for lining the pockets of engineers, consultants and laboratories. The Regional Board has not continued to sufficiently examine and consider recent research results and advanced testing technologies, and it has not modified its Order accordingly.

- (d) **The 2007 Order fails to take into account economic considerations.** Small dairies are under much greater economic stress than larger, more efficient dairies and, therefore, are less able to handle the high costs of complying with the 2007 Order’s reporting requirements. The 2007 Order’s waste discharge requirements as they relate to water quality objectives must take into account economic considerations. (Water Code Sections 13241 and 13263) The 2007 Order does not do so. It specifically fails to set or implement water quality objectives that are within the economic means of smaller dairies – operations that have to deal with disproportionately higher per cow reporting costs. Indeed, the Order fails to address the special economic circumstances of smaller dairies in any way whatsoever.

The administrative record (AR) of the 2007 Order consists of 34,000 pages of documents and testimony. A great deal of testimony was presented concerning how expensive the new reporting requirements would be, and how especially unbearable it would be for smaller dairies:

- (1) Ms Asgill, an agricultural economist, testified that because of these regulations, “we are probably looking at the smaller dairies going under. Probably

those dairies that we [are] usually fond of protecting – dairies under 500 milking cows - will be going out.” (AR 000444)

(2) A letter from the State Department of Food and Agriculture Board mentioned that Governor Schwarzenegger “made a commitment to reject new regulations that unfairly impact small business. ... It is expected that new and existing regulations will be reviewed for economic impact to small business. ... we encourage the RWQCB to review your proposal ... propose alternatives that are less burdensome.” (AR 007297)

(3) The Federal government presented input: The EPA’s Small Business Advocacy Panel submitted its recommendation to streamline the reporting requirements and that operations under 1000 animal units should be exempted from certain requirements. (AR 02397)

(4) The State Water Board expressed concern in its submission during the hearings that the proposed requirements “may have significant adverse economic impact on small business.” The State Board went on to recommend “different compliance or reporting requirements ... which would take into account the resources available to small business ... [and] exemption or partial exemption from regulatory requirements for small business.” (AR 019632)

(5) Even Regional Board member Dr. Longley expressed concern: “Whereas larger dairies, a 10,000 cow dairy, would be able to absorb the costs, a 100 cow dairy is going to be faced with possible disaster.” (AR 002163)

(6) In response to a written question submitted by Baywatch, Sierra Club, California Sportfishing Protection Alliance and Waterkeeper Alliance, the Regional Board staff gave them assurances that “the Board has the option of limiting the application of this order based on the *size of herd*,” and that “waste discharge requirements or a *waiver* of waste discharge requirements would be adopted for facilities that are not covered by the order.” (AR 000583)

(7) No economic analysis or evidence was presented into the record that disputed the testimony that the proposed 2007 Order would be harmful, even fatal, to smaller dairies.

As mentioned earlier, CARES of Sacramento estimated that the costs of these reports could be as high as \$30,000.00 per facility. The Regional Board incorporated this comment in its 2009 Order as part of its justification for postponing the filing of these expensive reports.

As another example of how the 2007 Order adversely affects smaller dairies, CARES of Sacramento has also estimated that the average cost for a dairy to install their own individual monitoring well system would be \$42,000.00, and thousands of dollars

each year thereafter for ongoing sampling, testing and reporting. The cost of monitoring well programs, both the installation and the periodic reporting costs, are for the most part the same for large dairies as they are for small dairies. (Exhibit 22)

We requested data from the Regional Board staff that would reveal the report filing compliance rate of dairies, broken down by herd size. In response to our request, Jorge Baca, from the CVRWQCB, provided us with data concerning the dairies dealt with by its Fresno office. But the compliance rate is not what is most meaningful in this data. Rather it is the rate of loss of dairies, by herd size, since the adoption of the 2007 Order. This data shows the following with respect to the dairies that provided reports to the Fresno office:

| <u>Herd Size</u> | <u>2007</u> | <u>2010</u> | <u>Attrition</u> |
|--------------------|-------------|-------------|-----------------------------|
| Less than 400 cows | 56 | 30 | -26 = 46% attrition |
| 400 to 700 cows | 92 | 62 | -30 = 32% attrition |
| Over 700 cows | 485 | 455 | -30 = .6% attrition |
| Total | 633 | 547 | -86 = 13% overall attrition |

In other words, only about half the number of smaller dairies filed reports in 2010 as compared to the number of smaller dairies that filed reports in 2007.

Prosecution's counsel claims on page 5 of her rebuttal statement that "In 2007 evidence existed to show that small dairies pose a threat to water quality." Yet, she does not state what that evidence was or where it appeared in the administrative record of the 2007 Order.

Not only have we shown that small dairies are less able to deal with the high regulatory costs, we can also show that they pose a dramatically smaller threat to the groundwater. The above numbers roughly show that the number of cows in 2007 in dairies under 400 cows represented only about 3/10 of 1% (.3%) of all cows in the region. Since then, California DHIA data now shows that DHIA dairies in the San Joaquin Valley of our size or smaller represent less than 1/10 of 1% (.09%) of all DHIA cows in the San Joaquin Valley. (Exhibit 23) This means that only one out of every 1000 cows is located in a smaller dairy.

Other agencies recognize these facts. Both the North Coast Regional Water Quality Control Board and the San Francisco Bay Regional Water Quality Control Board have recognized how smaller dairies have a much smaller impact on groundwater, and how they are less able to bear the same regulatory expenses and burdens that larger dairies can. These Regional Boards saw fit to adopt special performance and reporting relief for dairies under 700 cows (See Orders R1-2012-003 and R2-2003-0094, respectively).

In the case of the North Coast Region's Order R1-2012-0003, it declares that "this Order applies to dairies that pose a low or insignificant risk to surface water or

groundwater.” The Order goes on to say that “economics were considered, *as required by law*, during the development of these objectives,” and “that a waiver of WDRs [waste discharge requirements] for a specific type of discharge is in the public best interest.”

In the case of the San Francisco Bay Region, it requires smaller dairies to complete and file a two-page “Reporting Form” which does not require the involvement of expensive engineers. (Exhibit 24)

It should also be noted that the SJ Valley Air Pollution Control District exempts smaller dairies from many of its requirements.

Despite the foregoing, the CVRWQCB refused to adopt any waivers, or make any special provisions for, or grant any reporting relief, to smaller dairies, and none appear in its 2007 Order. In conclusion, its refusal/failure to do so violates sections 13241 and 13263 (a) of the Water Code. Moreover, it puts smaller dairies in the Central Valley region at a greater competitive disadvantage with larger dairies in the Central Valley, and at a competitive disadvantage with small dairies in the North Coast and San Francisco Bay regions.

(e) The 2007 Order is subject to the requirements of the California Administrative Procedure Act (APA). The California Administrative Procedure Act (Chapter 3.5 of the California Government Code, Section 11340 et seq) is intended to keep the regulations of state agencies from becoming unreasonably costly and otherwise burdensome. Section 11340 of APA recites that the legislature found that “the complexity and lack of clarity in many regulations put small businesses, which do not have the resources to hire experts to assist them, at a distinct disadvantage.” APA created the Office of Administrative Law to administer the Act. Section 11340.1 declares that it is the legislature’s intent under APA for state agencies to “actively seek to reduce the unnecessary regulatory burden on private individuals.” It is undisputed that the regional water boards are state agencies.

While Section 11340.9 (i) of APA states that this chapter does not apply to a number of matters, including a regulation that “does not apply generally throughout the state,” it does apply however, under Section 11353, to “any policy, plan or guideline” that (1) the State Water Resources Control Board has adopted after June 1, 1992, or (2) that a court determines is subject to this part. In other words, Section 11353 is a specific exception to the more general exception under 11340.9 (i).

Section 11353 goes on to say that the policies, plans and guidelines adopted by the SWRCB are not effective until their regulatory provisions are approved by the Office of Administrative Law.

The Tulare Lake Basin Water Quality Control Plan of 1995 and its subsequent amendments are covered by APA because it is a “plan” adopted by the State Board in 1995. The Office of Administrative Law (OAL) has reviewed and approved this Plan and its amendments. The 2007 Order recites on its page 3 that its waste discharge

requirements are an “implementation” of the Tulare Lake Basin Plan. Therefore, we contend that the 2007 Order and its WDRs should be considered a part of and an extension of said Plan. If the law requires a regional plan such as the Tulare Lake Basin Plan to be reviewed and approved by State Board and the OAL, then logic tells us that it is just as important that the waste discharge requirements adopted to implement the Plan should also be reviewed and approved by the OAL. Thus, it is our contention that the 2007 Order should have been reviewed and approved by the OAL. But it is undisputed that the 2007 Order has not been reviewed and approved by the OAL.

The Government Code provides that if any regulation or order that should be reviewed and approved by the OAL is not, then the same is invalid and unenforceable. Because the 2007 Order was not reviewed and approved by the OAL, we contend that it is invalid and unenforceable.

Under Government Code sections 11350 and 11353, we have the right to file an action for declaratory relief with the superior court, under which we can ask the court whether this Order is a “regulation” that should be subject to the requirements of APA. Given the significant adverse impact that the Order has on small dairies, we are inclined to think a court would see fit to declare that the 2007 Order is subject to APA requirements, and that it is invalid and unenforceable because the Regional Board did not follow the APA requirements.

3. The Regional Board has not already made factual determinations about many issues raised by us herein.

The Prosecution’s counsel made the claim on pages 4 and 5 of her rebuttal statement that, during the October 13, 2011 hearing on the 2011 ACL Complaint, the Regional Board “already made a factual determination “ about many of the issues we have raised herein, and “found Mr. Sweeney’s arguments to be unpersuasive.” She also claimed on page 6 that “the full board rejected Mr. Sweeney’s arguments. Nothing could be further from the truth, and she should be more careful with her assertions. In paragraphs 17 and 18 of section B. on page 5 herein we point out where the record shows that the Regional Board’s counsel withheld from the Board our October 2, 2011 written testimony/arguments. He then mentioned the document to the Board at the beginning of the October 13 hearing and recommended that it not be admitted. Without any discussion whatsoever, the Chair ruled that it was not to be admitted. The Ken Landau email of October 25, 2011 confirmed that this document, containing all of our testimony, evidence and arguments, was never given to the Board to read or consider.

The Chair then limited my oral testimony and argument during the hearing to five minutes during which I was to only comment on the herd size data. Hence, the record clearly shows that the Board never read, heard or considered the written testimony, evidence and arguments contained in my thirteen-page document dated October 2, 2011. Therefore, the Board could not and did not make any specific factual determinations on the issues raised by us. It only moved, seconded and voted to adopt the proposed order,

which was the imposition of a civil liability penalty against us for not filing the 2009 Annual Reports. The Regional Board did not find all of my “arguments to be unpersuasive;” it never read or heard them! We are stunned that counsel would so profoundly misrepresent the facts.

4. Water Code Section 13320 does not bar us from attacking the legality of the 2007 Order.

The Prosecution’s counsel argues on page 11 of her rebuttal statement that we are barred from attacking the legality and enforceability of the 2007 Order because of section 13320 of the Water Code. This section says an aggrieved person may petition the state board within 30 days of a regional board’s action, in this case the adoption of the 2007 Order. But she cites no legal authority that establishes that a person cannot defend himself against enforcement of such an order against him, or against punishment thereunder, if the order, as adopted, is illegal and unenforceable because it violates specific provisions of the statutes that authorize it. If it is illegal, it is illegal.

5. Our filing of the 2007 and 2008 Annual Reports does not constitute a waiver of our objections to the filing of the 2010 Annual Report.

The Prosecution’s counsel argues on page 11 of her rebuttal statement that when we filed the 2007 and 2008 reports, we waived our objection to the filing of the 2010 Annual Report. This is not true. The information we submitted to the Regional Board on June 25, 2008 (2007 Report) and on June 26, 2009 (2008 Report) was herd size and nutrient management information, the very same information the Board has been requiring for many years prior to its adoption of the 2007 Order. This information did not need to be developed or certified by a “registered professional” (engineer), and was not costly to produce. In sharp contrast, the 2007 Order imposed an entirely new category of expensive reports that had to be prepared by licensed engineers. These are the reports that we, as small dairymen, could not afford and did not file. To repeat, the Regional Board acknowledged in its 2009 Order that these reports were very expensive, and because of that, postponed their filing deadline by one year. In light of this, it cannot be argued that what we filed in 2008 and 2009 waived in any way our objections to the new burdens imposed by the 2007 Order.

We are sending enough extra copies of this document, including our attached Exhibits 1 through 24, inclusive, to be delivered by you to each Regional Board member. Please get it to them sufficiently ahead of the August hearing so that they may read it beforehand. And we ask that a copy also be introduced into the record of this proceeding.

Respectfully submitted,

James G. Sweeney

Amelia M. Sweeney