Petitions on the Eastern San Joaquin Agricultural General Waste Discharge Requirements

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State Water Board Workshop

December 6, 2017

Overview

- Procedural background
- Precedential nature of order
- Revisions Proposed
  - First draft order and significant comments
  - Significant revisions in second draft
- Next steps

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Procedural Background

- December 7, 2012: Central Valley Water Board adopted Eastern San Joaquin Agricultural General WDRs
- January 2013: Three petitions challenging the General WDRs filed with the State Water Board

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Procedural Background

- September 2013: State Water Board adopted precedential Central Coast Agricultural Order
- December 2013: Nitrogen Tracking Task Force issued recommendations
- September 2014: Agricultural Expert Panel issued recommendations

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Procedural Background

- February 8, 2016: State Water Board staff issued proposed order
- May-June 2016: Public Workshops and Public Comment
- Fall 2016: Staff workshops
- Spring 2017: Meetings with agricultural representatives and environmental justice representatives

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Procedural Background

- October 10, 2017: Release of second staff-proposed order

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Precedential Nature of Order

- Order requirements provide direction to agricultural programs statewide
- Specific requirements of the newly released order, including timelines, are effective for the East San Joaquin growers upon adoption of the order

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Precedential Nature of Order

- All other permits must be revised by the regional board before precedential direction becomes effective
- Regional Water Board must follow State Water Board direction; however, the Regional Water Board may find that there are significant site-specific conditions that render the requirements inappropriate
- Specific exemption for nitrogen reporting

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Nitrogen Reporting Requirements

First Staff-Proposed Order:

- Uniform reporting requirements in high and low vulnerability areas
- Reporting of nitrogen applied (A) and nitrogen removed values (R)
- Field-level data reported to Central Valley Water Board

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Nitrogen Reporting Requirements: Rationale

- Conclusions of the Agricultural Expert Panel regarding impacts to groundwater in high and low vulnerability areas

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Nitrogen Reporting Requirements: Rationale

- Field-level AR data allows coalition to estimate field-level nitrogen over-application and facilitates follow up and outreach with outliers
- Field-level AR data allows Regional Water Board verify that appropriate follow up is conducted and responsive management practices are implemented

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Nitrogen Reporting Requirements: Rationale

- Field-level AR data allows Regional Water Board to study and determine appropriate multi-year A/R ratio ranges by crop
- Field-level AR data and management practice implementation data may be correlated and analyzed to identify effective management practices

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Nitrogen Reporting Requirements: Significant Comments

- Uniform nitrogen reporting requirements for all areas and growers are not appropriate
- There are significant privacy and liability consequences to field-level reporting

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Revisions to Nitrogen Reporting Requirements

<u>Second Staff Proposed Order maintains uniform reporting but allows phasing:</u>

- Low and high vulnerability areas prepare certified nitrogen plan and submit summary report
- High vulnerability: Already preparing certified plan and submitting summary report
- Low vulnerability: Already preparing plan; must certify beginning March 1, 2020, must submit summary report beginning March 1, 2021

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Revisions to Nitrogen Reporting Requirements

<u>Second Staff-Proposed Order allows exemption:</u>

- Commodity groups or growers in certain areas may demonstrate that nitrogen reporting not appropriate
- Demonstration: "Nitrogen applied to the fields does not percolate below the root zone in any significant amount and does not migrate to surface water through discharges, including drainage, runoff, or sediment erosion."
- To be approved by the regional board

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Revisions to Nitrogen Reporting Requirements

Data Kept on-Farm:

- Irrigation and Nitrogen Management Plan (INMP)
- Certification includes self-certification option
- New certification language to address liability concerns for professional certifiers

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Revisions to Nitrogen Reporting Requirements

Data Reported from Growers to Coalition:

- Nitrogen applied in:
  - irrigation water,
  - in synthetic fertilizers, and
  - in organic amendments
- Crop yield
- Reporting by "field" – allows grouping of multiple fields for reporting

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Revisions to Nitrogen Reporting Requirements

Values Calculated by the Coalition:

- Nitrogen removed based on crop yield and coefficient
- Coefficients to be developed by coalition and approved by Regional Board:
  - crops on 95% of coalition acreage by 2021, and
  - 99% of acreage by 2023
- Nitrogen Applied/Nitrogen Removed (A/R Ratio)
- Nitrogen Applied-Nitrogen Removed (A-R Difference)

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Revisions to Nitrogen Reporting Requirements

Data Reported from the Coalition to the Regional Board:

- Field-level nitrogen data reported to regional board in three tables, without name and location identifiers
  - With anonymous member IDs
  - With anonymous location IDs
  - Aggregated by township
- Exception where no coalition (Central Coast); however, each regional water board directed to develop a coalition option

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TABLE 2

Sample Field-Level Nitrogen Data Reported to the Regional Board by Anonymous Member ID*

(Second Staff-Proposed Order)

Anonymous Member ID	Crop for each field	N Applied via Fertilizer (lbs/ac)	N Applied via Organics/ Compost (lbs/ac)	N Applied via Irrigation (lbs/ac)	Total Nitrogen Applied (lbs/ac)	Nitrogen Removed (lbs/ac)	A/R	A-R (lbs/ac)	3 yr A/R
243721	$Tomato_1$	180	10	6	196	148	1.3	48	1.3
243721	$Tomato_2$	150	0	45	195	60	3.3	135	3.7
243721	Corn, silage	230	0	17	247	210	1.2	37	1.4
341962	Almond	180	5	22	207	140	1.5	67	1.3
810619	Corn, grain	200	0	5	205	120	1.7	85	1.6
810619	Alfalfa	0	0	35	35	510	0.1	-475	0.1
781936	$Almond_1$	250	0	0	250	130	1.9	120	2.1
781936	$Almond_2$	135	10	31	176	54	3.3	122	3.6

*The data in this table is for illustrative purposes only and does not represent actual data collected.

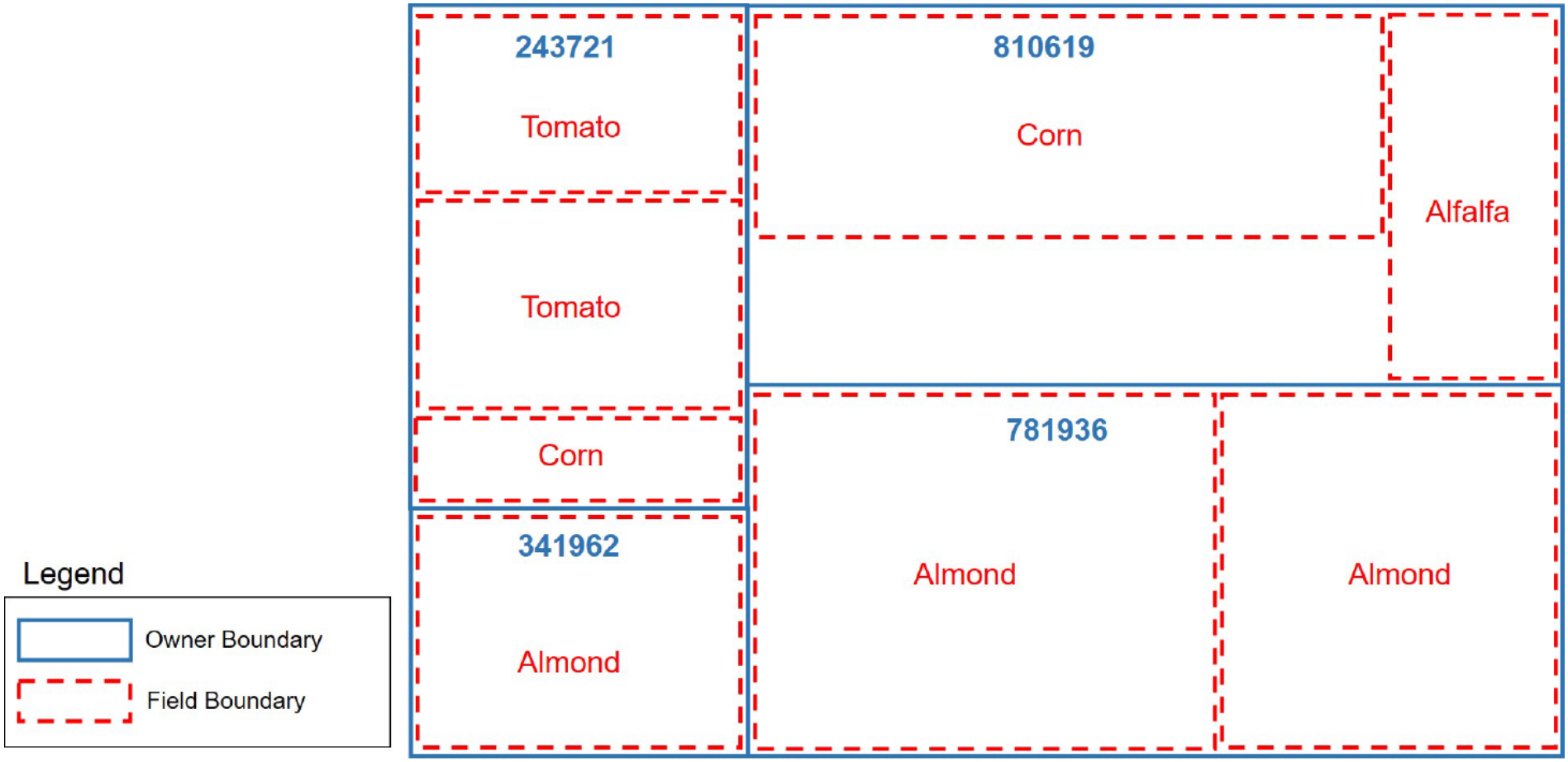

Figure 1. Illustration of Anonymous Member ID, corresponding to Tables 1 and 2

TABLE 3

Sample Field-Level Nitrogen Data Reported to the Regional Board by Anonymous APN ID*

(Second Staff-Proposed Order)

Anonymous APN ID	Crop for each field	N Applied via Fertilizer (lbs/ac)	N Applied via Organics/ Compost (lbs/ac)	N Applied via Irrigation (lbs/ac)	Total Nitrogen Applied (lbs/ac)	Nitrogen Removed (lbs/ac)	A/R	A-R (lbs/ac)	3 yr A/R
AQRTM	$Tomato_1$	180	10	6	196	148	1.3	48	1.3
AQRTM	$Tomato_2$	150	0	45	195	60	3.3	135	3.7
AQRTM	Corn, silage	230	0	17	247	210	1.2	37	1.4
GJZQN	Almond	180	5	22	207	140	1.5	67	1.3
MNOPR	Almond	180	5	22	207	160	1.3	47	1.2
CFRMO	Corn, grain	110	0	5	115	92	1.3	23	1.6
QZIFE	Corn, grain	110	0	5	115	92	1.3	23	1.6
QZIFE	Alfalfa	135	10	31	176	54	3.3	122	3.6
ROTBM	Almond	250	0	0	250	130	1.9	120	2.1
LGTVI	Almond	135	10	31	176	54	3.3	122	3.6

*The data in this table is for illustrative purposes only and does not represent actual data collected.

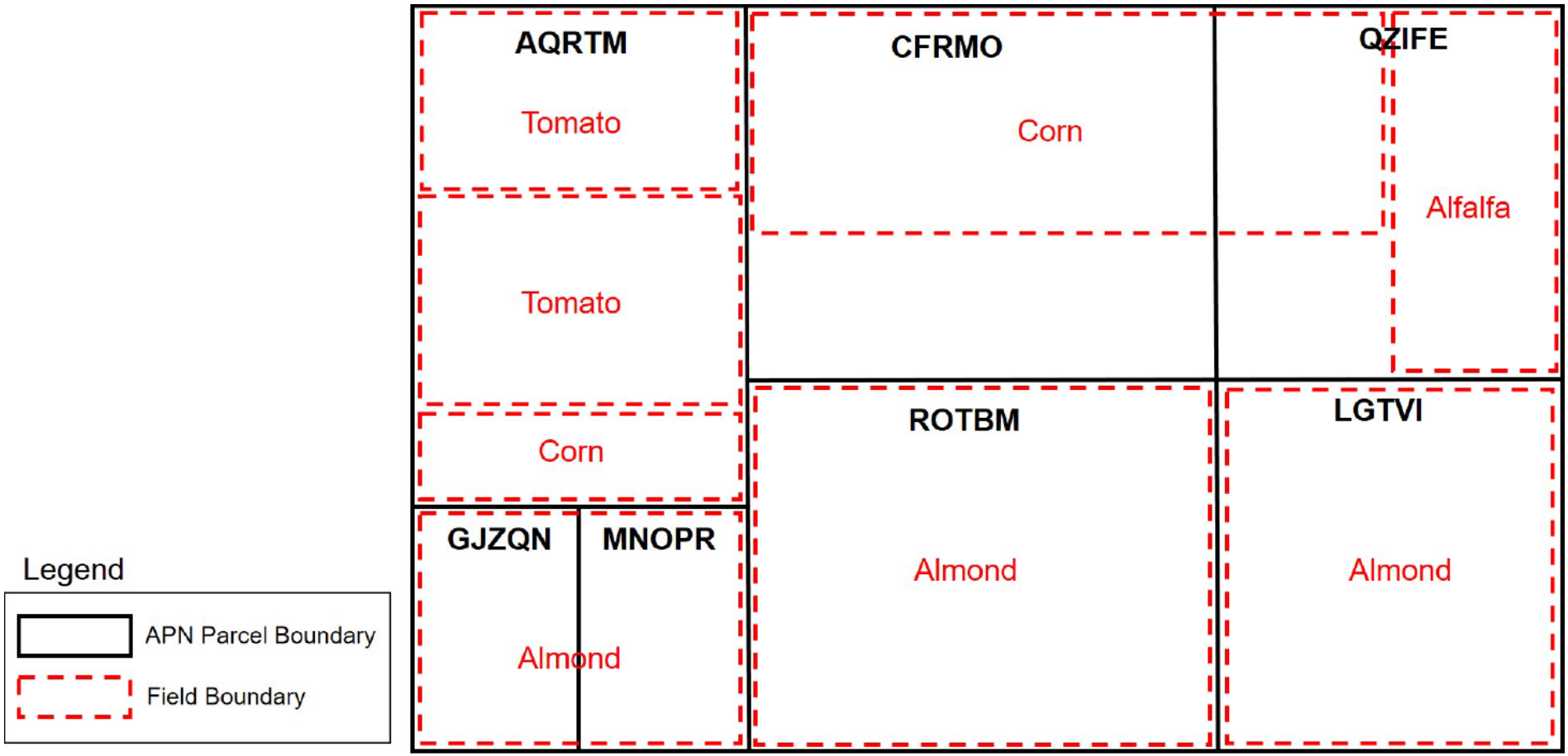

Figure 2. Illustration of Anonymous APN ID, corresponding to Table 3

TABLE 4
Sample Township-Level Nitrogen Data Reported to the Regional Board*
(Second Staff-Proposed Order)

Township Range (TR)	Crop	Total Acreage (ac)	N Applied via Fertilizer (total lbs)	N Applied via Organics/Compost (total lbs)	N Applied via Irrigation (total lbs)	Total Nitrogen Applied (total lbs)	Nitrogen Removed (total lbs)	A/R	A-R (total lbs)
02S07E	Almonds	88	20000	60	2390	22450	22400	1.0	50
02S07E	Corn, silage	54	12420	0	650	13070	11340	1.2	1730
02S07E	Walnuts	35	5250	0	500	5750	3575	1.6	2175
05S14E	Almonds	115	20700	0	3540	24240	16100	1.5	8140
05S14E	Corn, grain	600	66000	250	0	66250	55200	1.2	11050
05S14E	Grapes	112	2800	75	200	3075	3140	1.0	-65
05S14E	Oats	32	--	--	--	--	--	--	--
05S14E	Pistachios	1293	155160	0	3550	158710	108612	1.5	50098
05S14E	Wheat	1040	156000	200	900	157100	104000	1.5	53100
06S09E	Almonds	38	5700	0	705	6405	2052	3.1	4353
06S09E	Corn, grain	2144	235840	0	9858	245698	197248	1.2	48450
07S11E	Almonds	4696	657440	2000	3250	662690	422640	1.6	240050
07S11E	Tomatoes	891	160380	0	9928	170308	131868	1.3	38440
07S11E	Walnuts	105	15750	45	0	15795	8400	1.9	7395
08S13E	Barley	400	57000	200	400	57600	32000	1.8	25600
10S15E	Almonds	9328	2000000	800	14048	2014848	1679040	1.2	335808
10S15E	Corn, grain	387	42570	250	0	42820	35604	1.2	7216
10S15E	Tomatoes	91	12000	30	500	12530	17900	0.7	-5370
10S15E	Walnuts	80	11500	0	50	11550	9600	1.2	1950
11S17E	Almonds	9817	1511000	0	820	1511820	1079870	1.4	431950
11S17E	Corn, silage	54	12420	0	650	13070	11340	1.2	1730
11S17E	Walnuts	760	140000	300	6000	146300	66500	2.2	79800
13S17E	Almonds	1724	410000	0	3760	413760	258600	1.6	155160
13S17E	Tomatoes	186	19500	10	0	19510	1467	13.3	18043
13S17E	Walnuts	189	30000	200	1550	31750	6250	5.1	25500

*The data in this table is for illustrative purposes only and does not represent actual data collected.

Revisions to Nitrogen Reporting Requirements

- Development of township-level nitrogen loading targets to be pursued by agricultural and environmental justice groups in consultation with Central Valley Water Board
- Central Valley Water Board to evaluate field-level data for development of acceptable ranges for multi-year A/R ratio target values

Revisions to Management Practice Reporting

- Reporting split among three reports:
  - Farm Evaluation,
  - Irrigation and Nitrogen Management Plan Summary Report, and
  - new Management Practice Implementation Report
- Farm Evaluation submitted every five years in both high and low vulnerability areas

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TABLE 1
Sample Field-Level Management Practice Data Reported to the Regional Board by Anonymous Member ID*
(Second Staff-Proposed Draft Order)

ID	Data from INMP Summary Report						Data from Farm Evaluation			Data from MPIR			
Anonymous Member ID	Crop	Outlier Notification? (Annual)	INMP Certification Method (Annual)	Irrigation Method	Irrigation Practices (Annual)	Nitrogen Management Practices (Annual)	Pest Management Practices (Every Five Years)	Sediment and Erosion Management Practices (Every Five Years)	Irrigation wells? Abandoned wells? (Eveny Five Years)	In a SQMP area? (Annual)	Practices implemented to comply with SQMP	In a GQMP area?	Practices implemented to comply with GQMP
243721	$Tomato_1$	Yes	CCA	Drip	Measured soil moisture	Evaluated crop nitrogen need; used fertigation	Followed label restrictions	Used off season cover crop	Yes, No	No	NA	No	NA
243721	$Tomato_2$	No	CCA	Drip	Weather-based measured soil moisture	Used tissue/petiole testing	Used drift control agents	Stabilized creek and stream banks	Yes, Yes	No	NA	No	NA
243721	Corn	No	Self	Furrow	Tailwater return	Used split fertilizer applications	none	No irrigation drainage	Yes, Yes	No	NA	No	NA
341962	Almond	No	NRCS	Drip	Weather-based scheduleing	Used split fertilizer applications	Used buffer zones	Field is lower than surrounding terrain	Yes, No	Yes	Limited edge of field spraying	Yes	Used split fertilizer application
810619	Corn	No	CCA	Furrow	Tailwater return	Tested irrigation water nitrogen concentration	Used vegetated drain ditches	Flow dissipaters, stabilitied creed and stream banks	No, No	Yes	integrated pest management	No	NA
810619	Alfalfa	Yes	Self	Border flood	Laser-leveled fields	none	Applied no pesticides	Used in-furrow dams	No, Yes	Yes	integrated pest management	No	NA
781936	$Almond_1$	No	CCA	Sprinkler	Measured soil moisture	Tested soil for residual nitrogen	Mapped sensitive areas	irrigated with drip or micro irrigation syst.	Yes,No	No	NA	Yes	Compost added to soil
781936	$Almond_2$	No	CCA	Flood	Irrigation based on crop water need	Tested soil for residual nitrogen	Used end-of-row sprayer shutoff	Planted cover corps or native vegetation	Yes, Yes	No	NA	Yes	Compost added to soil

*The data in this table is for illustrative purposes only and does not represent actual data collected.

Revisions to Surface Receiving Water Monitoring

- Surface water monitoring approach has evolved over time.
- State Water Board staff considered whether monitored sites are representative and of sufficient spatial density
- First Staff-Proposed Order: Direction to Central Valley Water Board to reconsider representative surface water monitoring provisions

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Revisions to Surface Receiving Water Monitoring

- Comments received: Order should provide more specificity as to how to strengthen the surface water monitoring program
- Second Staff-Proposed Order: Expert panel process
- Links to monitoring reports and technical reports reviewed by staff to be posted

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Requirement for Sampling On-Farm Drinking Water Wells

- Public health issue with precedent for sampling set in previous State Water Board order
- Significant comments: Drinking water well sampling should be part of a statewide program
- Significant comments: Growers should be required to sample drinking water wells for a larger suite of constituents

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Requirement for Sampling On-Farm Drinking Water Wells

Second Staff-Proposed Order:

- Sampling commences 2019 only if no statewide program in place
- Three samples over three years, but may substitute existing data; results reported by lab directly to state database
- Sampling continues to be limited to nitrates
- Notification provided by grower if sample exceeds health standards

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Cost of Expanded Monitoring and Reporting Requirements

- Comments Received: Increased reporting requirements lead to significant cost increases for the coalition, the growers, and the Central Valley Water Board

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Cost of Expanded Monitoring and Reporting Requirements

Second Staff-Proposed Order:

- Cost analysis based on submitted projected costs in comments

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Cost of Expanded Monitoring and Reporting Requirements

<u>Second Staff-Proposed Order:</u>

- Grower direct costs:
  - Primary cost increases in low vulnerability areas for certification ($1500-$4500 for professional certification, $440-$960 for self certification) and submission of Summary Report ($110-$960)
  - Implementation delayed by two years
  - Farm evaluation reporting decreased
  - Drinking water well sampling costs $40 per sample plus grower time $110-$480

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Cost of Expanded Monitoring and Reporting Requirements

<u>Second Staff-Proposed Order:</u>

- Coalition Costs:
  - Additional staff for outreach and training in low vulnerability areas; increased costs of mailing, development of anonymous identifiers, compiling field-level data-sets for submission to Regional Water Board, off-site storage of data
  - Cost increase estimated at 10%; may result in increased fees for growers

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Cost of Expanded Monitoring and Reporting Requirements

<u>Second Staff-Proposed Order:</u>

- Central Valley Water Board costs
  - With elimination of Regional Water Board staff responsibilities for nitrate exceedance notifications, Central Valley Water Board program costs expected to not increase significantly

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Next Steps

Written Comment Submission:
Deadline **December 22, 2017**, 12:00 noon

Ms. Jeanine Townsend, Clerk to the Board
State Water Resources Control Board, 1001 I Street, P.O. Box 100,
Sacramento, CA 95812-0100
Fax: 916-341-5620

Email: commentletters@waterboards.ca.gov

Please indicate in the subject line, "Comments to A-2239(a)-(c)."

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Next Steps

- Following close of written comment period, State Water Board will consider comments carefully
- Adoption meeting projected for January 23, 2018

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