

TIER 2/TIER 3 FARMS WITH HIGH NITRATE LOADING RISK TOTAL NITROGEN APPLIED REPORT - RANCH/RISK UNIT and FIELD/BLOCK INSTRUCTIONS

August 31, 2016

GENERAL INFORMATION ABOUT TOTAL NITROGEN APPLIED REQUIREMENT

Who Is Required to Report TNA:

- A- Tier 2 and Tier 3 Ranches with a HIGH nitrogen loading risk determination are required to have records of the Total Amount of Nitrogen Annually Applied from September 1st to August 31st, and to report Total Nitrogen Applied (TNA) annually by October 1st.
- B- Ranches that have received Request for Information letters under Water Code Section 13267 are required to report Total Nitrogen Applied by October 1st, or by the date specified in the letter.

Records Required to Report TNA:

1. Total nitrogen applied in pounds per crop-acre (lbs/crop-acre) in fertilizers and amendments and all other materials/products containing nitrogen in any form or concentration, including but not limited to, organic and inorganic fertilizers, slow release products, compost, compost teas, manure, and extracts;
2. Average nitrogen concentration in irrigation water applied during the annual reporting period, and the calculated or estimated nitrogen load in lbs/ranch-acre (the acres correspond to the ranch, risk unit, block or field, depending on the acres reporting TNA);
3. The total nitrogen present in the soil (lbs/crop-acre) that is available for crop uptake. The total nitrogen present in the soil must be measured at least once per annual reporting period, for each field within the ranch or risk unit (ranch subdivisions).

How to Report the Ranch/Risk Unit or Block/Field Risk and TNA: The risk of the ranch/risk unit or block/field calculated previously, has to be confirmed by August 31st in Section C of the ACF, considering the existing activities during the previous 12 months. If the ranch/risk unit or block/field is confirmed to be high risk, report Total Nitrogen Applied by the following October 1st (31 days after the risk confirmation date).

For all ranches, the risk confirmation is calculated based on the conditions existing at any time from September 1st of the previous year through the current August 31st.

How to Report Crop Information:

- A. For short-term crops grown for less than 12 months and harvested during the reporting period (reporting period is September 1st to August 31st), excluding strawberries and bell peppers, report the TNA to the entire crop throughout its growing cycle by the October 1st dateline.
- B. i. For strawberry and bell pepper crops harvested during the reporting period, report the TNA to the entire crop throughout its growing cycle by the October 1st dateline.
ii. For strawberry and bell pepper crops grown but not finally harvested during the reporting period, select "Crop, Not Final Harvest" option (e.g. Strawberry, Not Final Harvest) from the specific crop dropdown menu to indicate that the crop is still in the ground and will be finally harvested after the current October 1st; report the TNA to the entire crop so far by the October 1st dateline. Resubmit the completed form after the crop is finally harvested (kill-date), and provide the nitrogen applied to the crop from fertilizers and other materials throughout its growing cycle. If possible, update the calculation for the nitrogen applied through irrigation water to include the nitrogen applied from the

total amount of irrigation water applied to the crop throughout its growing cycle.

C. For crops that are long-term and grown for more than 24 months, such as blueberries, report the total nitrogen applied from September 1st to August 31st on an annual basis by October 1st.

- 1: For crops that are considered baby crops, such as baby lettuce, select the “crop, baby” option (e.g. Lettuce, Baby) in the specific crop dropdown menu.
- 2: For crops grown and that are NOT listed in the specific crop drop down menu, including any crops grown for an intermediate-length of time that do not have the “Not Final Harvest” option, contact Water Board staff immediately at AgNOI@waterboards.ca.gov to add the specific crop to the list.

How to Report Acreage Information:

- A. For acreage that previously reported TNA in risk units, blocks, or fields, and would like to now report TNA for the entire ranch, report current TNA on a single reporting form specifying the corresponding reporting acres and Assessor Parcel Numbers (APNs).
- B. For acreage that previously reported TNA for the entire ranch and would like to now report TNA in different or smaller risk units, fields, or blocks, a unique form should be used for each distinct risk unit, field, or block. Specify the corresponding reporting acres and Assessor Parcel Numbers (APNs).

WARNING MESSAGES THAT APPEAR WHEN THE FORM IS SAVED

The electronic form has embedded error and warning messages that will be displayed when the form is saved to alert the user if there are problems with the information reported in the form. Please make sure you read them completely and correct the problems, otherwise you will be contacted by Water Board staff. The following errors and warning messages may appear:

1. Not all required fields have been completed (RED OUTLINES) and/or one or more values have been entered in an incorrect format (RED TEXT).
2. Error in Section I: The Sum of Total Crop Acres (RED BACKGROUND) plus the Fallow Acres cannot be less than the Physical Ranch Acres Reporting.
If you receive this error, double-check to ensure that you are reporting all the crop acres grown and harvested during the reporting period and any/all acres that were fallow throughout the entire reporting period. If any acres of the ranch were fallow throughout the entire reporting period, enter them as Fallow Acres.
3. Error in Section II-E: The estimated acre-feet of water applied per crop acre (RED BACKGROUND) are outside the typical application values (low or high). Double-check the values entered in Sections I, II, and IV. This error is most commonly caused by an incorrect estimate of the total volume of irrigation water applied.

Additional Features in Form

The form has buttons located at the top right of the first and second pages that allow information in particular sections or in the entire form to be quickly cleared to assist with growers who are reporting Total Nitrogen Applied for multiple ranches.

Reporting Period	The default dates display the current reporting period. Growers may modify the reporting period only under special circumstances, such as if the operator has not been farming the ranch during the entire 12-month reporting period. Changes in the reporting period require staff approval. Therefore, if the reporting period is modified, please provide detailed information explaining the reason/s why the change was necessary in the Explanations & Comments section on page 2 of the form. Water Board staff will review the explanation provided and contact you. The lack of records
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	<p>or required information will not be accepted as a justification to modify the reporting period.</p> <p>Note: if the reporting period is modified, both the average nitrate concentration of the irrigation water and the nitrogen applied with irrigation water (as well as the estimated volume) must correspond to the months that are now modified as part of the new reporting period.</p>
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SECTION I: GENERAL RANCH INFORMATION

AW#	Provide the AW identification number that is assigned to your operation.															
Ranch Global ID	Provide the ranch global identification number that is assigned to the ranch. The ranch global ID can be found on the upper right corner of the specific ranch eNOI in GeoTracker. Example, Global ID: AGL020013962.															
Ranch, Risk Unit, Block or Field Name	Provide the specific ranch, risk unit, block, or field name, as identified in GeoTracker, for which you are reporting total nitrogen applied.															
Physical Ranch Acres Reporting	Report the total acreage for which you are reporting total nitrogen applied. The acres should represent the entire ranch, individual risk units, block, or field, determined to be high risk. The reporting acreage should include all acres that were determined to be high risk and that were farmed during the reporting period, plus any fallowed acres if not all acres were under crop production,. Report the fallowed acres as part of the Physical Ranch Acres Reporting box and separately in the corresponding Fallow Acres box. If part of the acreage was under cover crops, the reporting acreage must include the acres with cover crops, even if no nitrogen applications were made to the cover crops. Cover crops should be selected in the Specific Crops Grown dropdown menu, and the cover crop acreage should be provided.															
Fallow Acres	If any acreage in the ranch was fallow throughout the entire reporting period, report the number of fallow acres.															
County	Select the county or counties where the physical ranch-acres reporting are located. Note: If acreages are located in more than one county, report all other counties and APNs on the second page of the form.															
APN(s) Assessor Parcel Numbers	<p>Report all assessor parcel numbers (APNs) where the physical ranch acres reporting are located.</p> <p>Notes:</p> <ol style="list-style-type: none"> 1. Additional APN boxes are located on the second page of the form, 2. If more than 20 APNs are reported, include a list of all APNs when emailing the Total Nitrogen Applied form to Water Board staff, 3. Enter all the digits of one entire APN in each of the boxes provided, 4. APN numbers are formatted by the specific counties. Make sure you are reporting the APNs correctly for your county/counties as follows: <table border="1"> <tr> <td>Ventura</td> <td>XXX-X-XXX-XXX</td> <td>10 digits</td> </tr> <tr> <td>Santa Barbara San Luis Obispo San Mateo</td> <td>XXX-XXX-XXX</td> <td>9 digits</td> </tr> <tr> <td>Monterey San Benito</td> <td>XXX-XXX-XXX or XXX-XXX-XXX-000</td> <td>9 or 12 digits</td> </tr> <tr> <td>Santa Cruz</td> <td>XXX-XXX-XX</td> <td>8 digits</td> </tr> <tr> <td>Santa Clara</td> <td>XXX-XX-XXX</td> <td>8 digits</td> </tr> </table>	Ventura	XXX-X-XXX-XXX	10 digits	Santa Barbara San Luis Obispo San Mateo	XXX-XXX-XXX	9 digits	Monterey San Benito	XXX-XXX-XXX or XXX-XXX-XXX-000	9 or 12 digits	Santa Cruz	XXX-XXX-XX	8 digits	Santa Clara	XXX-XX-XXX	8 digits
Ventura	XXX-X-XXX-XXX	10 digits														
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Santa Cruz	XXX-XXX-XX	8 digits														
Santa Clara	XXX-XX-XXX	8 digits														

<p>If the ranch entirely or partially contains a greenhouse, nursery, or hydroponic system, select from the drop down menu</p>	<p>Select one of the options that best describes how the irrigation water is managed, collected, and drained out of the ranch. For example, if the greenhouse operation has a reverse osmosis (RO) system installed which recycles the water up to 5 times, and the salts (brine) of the RO system is cleaned and removed as dry material, then the proper selection is <i>"All excess water is captured and recycled; the only waste is dry material, which is properly disposed of"</i>.</p>
<p>Sum of Total Crop Acres</p>	<p>This dotted cell will automatically calculate the sum of the crop acres reported in section IV. This box is intended to be a "quick review" or "help cell" to make sure all the required acres were reported. The sum of the crop acres plus the fallow acres should equal or exceed the physical ranch acres reporting. If there are special circumstances where the sum of the total crop acres plus fallow acres are less than the physical ranch acres reporting, provide an explanation in Section VI. The background of this cell will be red if the sum of the crop acres plus the fallow acres is less than the physical ranch acres reporting.</p>
<p>SECTION II: NITROGEN APPLIED WITH IRRIGATION WATER</p>	
<p>SECTION II-A: PVWMA/CSIP water use</p>	
<p>Was PVWMA/CSIP Water Used During the Reporting Period?</p>	<p>Report if the ranch has received irrigation water from either the Pajaro Valley Water Management Agency, Watsonville Area Water Recycling Project (PVWMA), or the Monterey County Water Resources Agency, Castroville Seawater Intrusion Project/ Salinas Valley Reclamation Project (CSIP). Follow the instructions that appear in the Total Nitrogen Applied reporting form, below the selected option.</p> <p>If the ranch only received well water, or water from another source other than PVWMA or CSIP during the reporting period, select the option that reads: "No. Only well, city, or other water".</p>
<p>SECTION II-B: PVWMA/CSIP delivered water</p>	
<p>Estimated Total <u>Volume</u> of PVWMA/CSIP Water Applied to Entire Reporting Acres During Reporting Period (gallons)</p>	<p>This field is not required, but is used to auto-calculate the box in section II-D: "Total Nitrogen Applied with Irrigation Water." Enter the total gallons applied from PVWMA or the CSIP projects, to the entire acreage that received water from either project during the September 1st to August 31st reporting period (or throughout an approved modified reporting period, if applicable). The value in this field can be erased after the Nitrogen Applied with Irrigation Water box is auto-calculated.</p> <p>Note 1: Growers should contact the corresponding agency (PVWMA or CSIP) to verify the volume of recycled water applied.</p> <p>Note 2: The Total Volume of recycled Irrigation Water Applied should include any recycled water applied for leaching. Note: rain water should not be included.</p>
<p>Average NO₃-N Concentration of PVWMA/CSIP Water (mg/L)</p>	<p>These dotted cells will automatically populate the corresponding values based on recycled water used from the PVWMA or the CSIP project.</p>
<p>Average Total Nitrogen Concentration of PVWMA/CSIP Water (mg/L)</p>	<p>The auto-populated values can be changed if a grower measured total nitrogen and/or nitrate-nitrogen concentration for their irrigation water that was delivered to their particular ranch from either project.</p> <p>The Total Nitrogen concentration and the volume reported in Section II-B are used to calculate the Nitrogen Applied with Irrigation Water in Section II-D.</p>
<p>SECTION II-C: Well/City water (or other source)</p>	
<p>Average Nitrate Concentration in</p>	<p>Report the average nitrate concentration in the irrigation water used on this ranch, risk unit, block, or field. This number should include the amount of nitrate naturally</p>

<p><u>Well/City Water</u> (mg/L)</p>	<p>dissolved in the irrigation water as it is pumped out of the ground, or delivered to your ranch, block or field by the irrigation district, water agency, etc. This number should <u>not</u> include liquid fertilizers applied during fertigation. To report the average nitrate concentration you must obtain a laboratory analysis or utilize a portable measuring device that results in a discrete numeric result for nitrate concentration from the <u>primary source of irrigation water applied</u> to the ranch/risk unit, during the reporting period.</p> <p>For more accurate reporting, operators may also measure the nitrate concentration from the <u>other sources of irrigation water applied</u>, besides the primary source of irrigation water, to the ranch/risk unit, during the reporting period. In the case that more than one well is used to irrigate, each well's average annual concentration and volume applied could be measured to obtain the weighted averages. Therefore, if more than one irrigation source is used, the weighted averages could be reported instead of information from only the primary source of irrigation water. To help calculate the weighted concentration averages if multiple wells are in use, click on the blue link in the form to access a simple excel file developed to calculate the weighted average. The excel file may also be found on the ILRP website, http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/index.shtml#resources, and is titled "weighted_avg_water".</p> <p>Note 1: A discrete measurement is required for the primary source of irrigation water applied. However, any methodology, such as nitrate quick test, can be used to measure the concentration of all other sources of irrigation water applied, e.g. backup wells.</p> <p>Note 2: mg/L = ppm</p>
<p>Units of Nitrate Concentration (<i>select one</i>)</p>	<p>Select the proper units you are using to report the irrigation water nitrate concentration. Nitrate as Nitrate (commonly shown as NO₃ in laboratory reports) or Nitrate as Nitrogen (commonly shown as N, NO₃-N, or NO₃NO₂N in laboratory reports).</p>
<p><u>Estimated Total Volume of Irrigation Water Applied to Entire Reporting Acres During Reporting Period</u> (gallons or acre-feet using link beside the estimated volume value cell)</p>	<p>This field is not required, but is used to auto-calculate the next box titled "Total Nitrogen Applied with Irrigation Water." Enter the total gallons of water from wells (or other sources, excluding PVWMA and CSIP) applied to the entire reporting acreage during the September 1st to August 31st reporting period (or throughout an approved modified reporting period, if applicable). To convert the total volume applied if calculated as acre-feet or acre-inches to gallons, click on the blue link in the form to access a simple excel file developed to convert acre-feet or acre-inches to total gallons applied. The excel file may also be found on the ILRP website, http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/index.shtml#resources, and is titled "convert_to_gallons". The value in this field can be erased after the Nitrogen Applied with Irrigation Water box is auto-calculated.</p> <p><i>The Total Volume of Irrigation Water Applied should include any water applied for leaching. Note: rain water and water from PVWMA or CSIP should not be included.</i></p>
<p>SECTION II-D: Nitrogen applied</p>	
<p>Total Nitrogen Applied with <u>Irrigation Water</u> (water from all sources) (lbs/acre)</p>	<p><u>Auto-calculation</u> For simplicity, use the form's built-in automatic calculation feature. The value in this cell will be automatically calculated by reporting the following information:</p> <ol style="list-style-type: none"> 1. If no PVWMA or CSIP water was used: provide a value for the Physical Ranch-Acres Reporting (Section I); and provide values for the irrigation water nitrate concentration, units of concentration (nitrate as NO₃ or nitrate as

NO₃-N), and the total gallons of well/city water applied (Section II-C). Section II-D will auto-calculate.

2. If only PVWMA or CSIP water was used: provide a value for the Physical Ranch-Acres Reporting (Section I); and provide a value for the total gallons of PVWMA or CSIP water applied (Section II-B). Section II-D will auto-calculate.
3. If PVWMA or CSIP water was used and water from another source (such as a well) was also used: provide a value for the Physical Ranch-Acres Reporting (Section I); provide a value for the total gallons of PVWMA or CSIP water applied (Section II-B); provide values for the irrigation water nitrate concentration of the other (non-PVWMA/CSIP) water, the units of concentration (nitrate as NO₃ or nitrate as NO₃-N), and the total gallons of non-PVWMA/CSIP irrigation water applied (Section II-C). Section II-D will auto-calculate and will sum the nitrogen applied with the PVWMA or CSIP water and the nitrogen applied with the water from the other source.

Note: This value corresponds to the pounds of nitrogen applied to each acre of the ranch/risk unit or block/field (physical ranch-acre) that received irrigation water during the reporting period (that is, acres that were not fallow throughout the entire reporting period).

Manual Calculation

The following instructions apply only to those ranches where only well/city (non PVWMA or CSIP recycled projects) water was applied.

Calculate and report the total nitrogen applied with irrigation water. The information must be reported as the total pounds of nitrogen applied to each acre of the ranch, risk unit, or block/field that received irrigation water during the reporting period. If any acres of the ranch were fallow for the entire reporting period, they should be excluded from this calculation. To report the amount of nitrogen applied with irrigation water (to all the crops grown on the ranch or risk unit during the reporting period), the following information must be known:

1. The average nitrate concentration in the primary source of irrigation water, or the weighted average of nitrate concentration in the irrigation water applied, if more than one well is used for irrigation.
2. Total volume of irrigation water applied (to all the crops grown on the ranch, risk unit or block/field during the reporting period).
3. Estimated volume of water applied from each source of water applied, (e.g. recycled or well).

To calculate the total amount of nitrogen applied with irrigation water in lbs/ranch-acre (counting only irrigated acres, and excluding all acres that were fallow for the entire reporting period), in cases where more than one water source is used to irrigate crops in the ranch/risk unit or block/field, the volume of water applied from each source should be accurately measured. The Nitrogen Applied with Irrigation Water can be manually calculated by following the steps outlined in the example described on pages 11 and 12.

Note: If PVWMA or CSIP water was used during the reporting period, for simplicity, it is recommended that the auto-calculation capabilities of the form be used rather than manual calculations. Growers may still choose to perform the calculations manually. The Total Nitrogen concentration must be used to calculate the Nitrogen Applied with irrigation water for all water from PVWMA or CSIP.

SECTION II-E: Volume check

This dotted cell will automatically calculate the estimated average acre-feet of water applied to each crop-acre. This cell is intended to be a “quick review” or “help cell” to make sure the reported volumes correspond to the acre-feet applied to each crop acre. The background of this cell will be red if the estimated acre-feet of water applied to each crop acre is too high or too low. If the cell indicates that the water applied to each crop acre was too low or too high, or if the value does not correspond with your estimated volume of water applied to your crops, review all information reported in Section I, II, and IV.

SECTION III: NITROGEN APPLIED WITH COMPOST AND AMENDMENTS (Not to a Specific Crop)

Physical Acres Receiving Compost & Amendments

Report the total number of ranch, risk unit, or block/field acres (physical-acres) where nitrogen applications from compost and amendments were made.

Nitrogen Applied In Compost & Amendments (TOTAL lbs)

Report in this section the total number of pounds of nitrogen applied from compost, amendments, and all other nitrogen containing materials (such as compost teas, humic acids, bacterial extracts, soil enhancers, but NOT including fertilizers, which must be reported in Section IV) if the applications were:

1. Applied to improve the soil physical and/or chemical properties (increase organic matter, improve structure or moisture retention), and usually applied when there are no crops growing on the ground, or
2. Intended for multiple crops, so the nitrogen would be distributed to many crops and the nitrogen is not already distributed among all the crops and reported in section IV.




Note 1: Also report in this section all other applications of nitrogen that are not reported in section IV.
Note 2: In the case where multiple applications are made during the year, sum the applications and report the total applied nitrogen in pounds.
Note 3: Make sure the value reported from the compost and amendment applications is converted from pounds or tons of the gross material to pounds of nitrogen.
Example 1: if you apply 20 pounds of N to 10 physical ranch-acres, then 30 pounds of N to a different 5 physical ranch-acres of the ranch, and finally 30 more pounds of N to another 10 physical ranch-acres; report 80 pounds of N to a total of 25 ranch-acres.
Example 2: if you apply 20 pounds of N to 10 physical ranch-acres, then 30 pounds of N to those same 10 physical ranch-acres, and finally 30 more pounds to the same 10 physical ranch-acres; report 80 pounds of N to 10 ranch-acres.

SECTION IV: NITROGEN APPLIED WITH FERTILIZERS & OTHER MATERIALS AND NITROGEN PRESENT IN SOIL

Specific Crop(s) Grown and Harvested During Reporting Period (Select from List)

Select specific crop/s from the drop-down menu or the attached list on page 11.
Note: See picture-examples below to determine under what circumstances a specific crop can be reported as mixed greens or spring mix.

Report information for each specific crop grown on the ranch, risk unit or block/field during the reporting period. For example, all the broccoli crops grown and harvested during the reporting period should be reported on one line. Growers also have the option to report information for a specific crop separately (more than one line) if the amounts of water or fertilizer inputs differ. For example, water and fertilizer inputs might be different for lettuce crops grown and harvested in the winter versus the summer. In this case, the grower might report information for lettuce crops on two reporting lines.

	<p>Different specific crops can be aggregated and reported on one line only if: these crops were intermingled with individual plants of different specific crop growing next to each other in the same row on the same field at the same time, and receiving the same amount of water and fertilizer. For clear examples, refer to the pictures below.</p> <p>Growers with strawberry crops can choose the option “Strawberry (Not Final Harvest)” if the crop is still on the ground and receiving nitrogen inputs at the time of the reporting due date, but will be finally harvested (kill-date) within the next reporting period. In this case, by October 1st submit the TNA form including the N inputs applied to the strawberry crop up to the time of submittal, and re-submit the form when the crop is finally harvested (kill-date) with updated information of the TNA to the strawberry crop during the entire growing season. The re-submitted form should only include the updated TNA applied to the strawberry crop and not any other crop harvested after August 31st. Strawberry growers now have the option to select from a list of multiple strawberry options for varieties with different lengths of time in the ground, or special programs. Spinach and spring mix growers can also report crops with multiple cuttings. Bell pepper growers can indicate single-harvest or multiple-harvest. And lastly, broccoli, cauliflower, and lettuce growers can report different crop seasons, such as winter or summer options.</p>
	<p>This example can be reported as “spring mix” or “mixed greens” if it represents a mix of different specific crops growing together such as radicchio, escarole, and arugula; are intermingled, grown on the same row and field; and at the same time and receiving the same amount of water and fertilizer.</p>
	<p>This is an example of different varieties of lettuce that are grown together, next to each other at the same time in the same row. This should be reported on a single line as “lettuce” or “lettuce, mixed”.</p>
	<p>This is an example of alternating rows of different crops. If the crops are different varieties of the same specific crop, such as red-leaf lettuce, green-leaf lettuce, butter-head lettuce, etc., these can be aggregated together and reported as “lettuce” or “lettuce, mixed” on one reporting line on the form.</p> <p>If the crops are different crops in the alternating rows, such as radicchio, arugula, escarole, lettuce, etc., each of these must be reported on a separate line on the form.</p>
<p>Total Crop Acres</p>	<p>Report the crop-acres in each row for each specific crop reported. If a specific crop is grown and harvested more than one time during the annual reporting period, the total crop acres of that crop equals the sum of the acres planted of that crop. Example: if on the same ranch, a grower has a crop of head lettuce in the spring on 10 acres, a second crop with 10 acres of broccoli, and then a third crop with head lettuce on 10 acres, they would report 20 acres head lettuce and 10 acres broccoli. Therefore, each individual Total Crop Acres box on the form can be the same, more, or less than the total acreage of the whole ranch, risk unit or block/field.</p> <p>Note: if the grower chooses to report their crops seasonally (such as reporting Lettuce (Spring/Summer) and Lettuce (Fall/Winter) on separate lines, then the crop-</p>

	<p>acre reported for each crop should correspond to the acres grown and harvested for that particular crop only. In the example above, the grower would report 10 acres of Lettuce, Head (Fall/Winter) and on another line would report 10 acres of Lettuce, Head (Spring/Summer).</p>
<p>Nitrogen Present in <u>Soil</u> (lbs/crop-acre)</p>	<p>Report the nitrogen present in the soil. This information must be reported as the total pounds of soil nitrogen present on each acre of the specific crop. The content of nitrogen in the soil must be measured at least once per annual reporting period for each field within the ranch or risk unit, if TNA is reported for the entire ranch or risk unit. If TNA is reported by block or field, the content of nitrogen in the soil must be measured at least once per annual reporting period for each management block or field. The goal is to measure the content of nitrogen present that is available in the soil for the subsequent crop uptake.</p> <ul style="list-style-type: none"> • To meet the requirement to record total nitrogen in the soil, growers may either take a soil sample for laboratory analysis, use the nitrate quick test, or use an alternative method to evaluate nitrogen content in soil, prior to planting, prior to seeding the field, prior to pre-sidedressing, or when appropriate to determine nitrogen available in the soil for the following crop. • Report the content of available nitrogen present in the soil in lbs/acre. For the purpose of measuring nitrogen content in the soil, in those cases where many small blocks exist in the ranch, the grower has the option to group the blocks into a large management unit to comply with the soil measurement requirement. • The method chosen to measure nitrogen content, the forms of nitrogen to measure (nitrate, urea, ammonia, all), and the effective rooting depth, should be decided when samples are taken. Unit conversions also apply: nitrogen in ppm (parts per million) in the effective root-zone must be converted to pounds of nitrogen per acre. • Reporting of available soil N content depends on the approach used to collect the samples. If multiple soil-samples are collected from different parts of the ranch, risk unit or block/field, then are mixed into a composite sample to measure available N in the soil of the whole ranch, risk unit or block/field, resulting in only one result from the lab, report this amount on the line corresponding to each crop where fertilizer applications will be modified based on N present in soil. If samples are gathered to determine nitrogen availability by specific crop(s), field(s), or soil type(s), report the average soil nitrogen content from the samples under the subsequent crop(s). • Some crops may not have a soil nitrogen content to be reported on this form because the nitrogen present in the soil was not measured prior to that particular crop. In these cases, the soil nitrogen content cell on the form should be left blank. • Growers must maintain information of the amount(s) of nitrogen content in the soil, the date(s) of measurement, along with a justification for the timing of the measurements in the Farm Plan. • Refer to conversions on pages 10 and 11 of the instructions. <p>Note 1: The proper timing to measure the nitrogen content in the soil depends on the crop growing cycles and fertilizer management. Measure nitrogen content in the soil at the time of the year when soil nitrogen content is high and must be accounted for as a source of nitrogen for the following crop and prior to or at the time when the crop fertilizer application decisions are made. It would be incorrect to measure nitrogen in the soil after the rainy season, when values are low, or at a time when no fertilizer application decisions are made. In the Salinas Valley, with multiple crop rotations, the appropriate time is between the first and second crops or in the spring. For strawberry crops the appropriate measurement may be prior to slow release</p>

	<p>fertilizer applications. Consult with your local crop advisor to determine the appropriate time to measure soil nitrogen content in a particular situation. Note 2: This value corresponds to the pounds of nitrogen present on each acre of the crop (crop-acre).</p>
<p><u>Nitrogen Applied in Fertilizers and Other Materials</u> <i>(lbs/crop-acre)</i></p>	<p>Report the total nitrogen applied in fertilizers, amendments (if not reported in Section III above), and all other materials/products containing nitrogen, to each specific crop(s) harvested during the reporting period. This section includes composts, manures and any other N-containing organic materials that were accounted for as a nitrogen input to the specific crop and not reported in Section III. This information must be reported as the total pounds of nitrogen applied to a crop-acre of a specific crop grown on the ranch, risk unit or block/field that was finally harvested (kill-date) during the reporting period.</p> <p>Note: in the case of multiple crop rotations of the same specific crop, the total nitrogen applied in pounds/crop-acre is the average applied on all the rotations and on all the acres. You can click on the blue link in the Section IV header on the form to access a simple excel file developed to calculate the value to report in the case of multiple plantings and harvests of a specific crop on different acres. The file can also be found at the ILRP website and it titled "N_from_fertilizers", http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/index.shtml#resources</p> <p>Example: if on the same ranch, a grower has a crop of head lettuce in the spring on 10 acres and applies nitrogen at 200 pounds/crop-acre, a second crop of lettuce on 50 acres and applies nitrogen at 400 pounds/crop-acre, and then a third crop of lettuce on 100 acres and applies nitrogen at 300 pounds/crop-acre, they would then calculate the total applied on all acres as follows: 200 pounds/crop-acre x 10 crop-acres + 400 pounds/crop-acre x 50 crop-acres + 300 pounds/crop-acre x 100 crop-acres = 2,000 + 20,000 + 30,000 pounds. Then divide this total by all the crop-acres (160 crop-acres). This is 52,000 pounds divided by 160 crop-acres. The final number to report is 325 pounds/crop-acre in the Nitrogen Applied in Fertilizers and Other Materials box in Section IV of the form.</p> <p>For long-term crops, report the total amount of nitrogen applied during the 12 months reporting period (Note: see the first page of these instructions, letter C under "How to Report Crop Information").</p> <p><u>To calculate the amount of N applied with fertilizers</u>, convert the fertilizer N-P-K % to pounds of nitrogen per acre by multiplying the percent nitrogen content in the fertilizer product by the total amount of fertilizer applied per acre. Report the nitrogen applied with fertilizers containing nitrogen including urea, ammonia, ammonium, nitrate, and all other nitrogen containing materials/products. Liquid fertilizers and other materials applied through the irrigation as fertigation should be accounted for in this section. Note: This value corresponds to the pounds of nitrogen applied to each crop-acre.</p>
<p>O / C</p>	<p>Specify if the crop was certified organic (O) or conventionally (C) grown.</p>
<p>Additional information</p>	<p>Report any additional information corresponding to the specific crop reported in Section IV.</p> <p>Nursery, greenhouses and hydroponic operations will need to select the option that best describes how the crops were grown.</p>

	<p>Select R if the crop is grown as part of a research trial or study and “not to maximize yields” and “not for human consumption.”</p> <p>Select “NY” or “LY” if applications of nitrogen were made to a crop, but the applications were low due to loss of all or a portion of the crop, such as if the crop was “disked in” due to pests, disease, etc.</p> <p>Note: All crops must be reported/included if they have been harvested, killed, disked in, left on field, or, in other words, terminated, during the reporting period.</p>
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ADDITIONAL CROPS AND COUNTIES - CONTINUED FROM SECTION I AND IV

Specific Crop(s) Grown and Harvested During Reporting Period	Report all crops grown during the reporting period and all other required information.
County	Report all additional counties where the reported acres are located.
APN(s) Assessor Parcel Numbers	Report all additional APNs where the reported acres are located. Use APN format by county provided in Page 3.

SECTION V: BASIS FOR THE AMOUNT OF TOTAL NITROGEN THAT WAS APPLIED

Identify the basis for the amount of total nitrogen applied. Report the source of the information you used to guide you in your fertilizer application decisions. This type of information refers to the known values of the amount of nitrogen taken up and/ or needed by the crop(s) to grow and produce a desired yield.

Note: Cells in this section will remain red, incomplete, unless one is checked.

SECTION VI: EXPLANATIONS AND COMMENTS

Other comments/notes	Provide a brief explanation in this box if the information on this form does not represent the entire 12-month reporting period, if the reporting acreage is different than the required (high risk) acreage in annual compliance form (this applies specifically to ranches that have fallowed acres), or if any other section in the form is incomplete.
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SECTION VII: CERTIFICATION

This form must be reviewed and certified by the Operator/Responsible Party listed in the eNOI.

Water Code Section 13267	Review the declaration stating that, to the best of your knowledge and belief, under penalty of perjury, the information provided is true, accurate, and complete.
Indicate that you have read the terms	Check the box to indicate that you have read and accept the above terms.
Operator/Responsible Party and Preparer Information	<p>Provide the name of the operator/responsible party and the preparer of the report, the preparer title, the preparer contact information, and the date prepared. The preparer and the operator/responsible party should be knowledgeable and understand the ranch/risk unit specifics regarding the total nitrogen applied and present in the soil for the selected reporting period. Both, the preparer and the operator/responsible party should be available to respond to questions from Water Board staff.</p> <p>The operator/responsible party, as listed on the operation’s eNOI, must review the report prior to submittal.</p>

CALCULATIONS AND CONVERSIONS

<p>Estimate volume of water applied per ranch-acre</p>	<p>Section-II of the form provides an auto-calculation to calculate the total nitrogen applied with irrigation water. In order to use the auto-calculation, you will need to first complete all of Section-I, then begin to complete Section-II working from left-to-right.</p> <p>Manual calculation: If you want to calculate the total nitrogen applied with irrigation water yourself and not use the auto-calculation feature, use the following instructions.</p> <p>First, you need to convert your estimated volume of water used from gallons to acre-feet, by doing the following: 1st. Estimate the total gallons applied to the entire acres that were irrigated during the reporting period (acres that were not fallow throughout the entire reporting period). 2nd. Calculate the acre-feet applied per ranch, risk unit or block/field-acre.</p> <p>Example (if volume is known in gallons): Ranch = 10 acres Gallons applied = 5,000,000</p> <p>-Convert gallons to acre-feet using the following formula: <u>Gallons applied</u> ÷ 325,851 Example use the numbers above: 5,000,000 ÷ 325,851 = 14.17 acre-feet of water applied to entire ranch</p> <p>-Now, divide total acre-feet (from above) by the ranch reporting acres (from Section-I of the form) 14.17 acre-feet on entire ranch ÷ 10 ranch-acres = 1.41 acre-feet per ranch-acre</p> <p>If volume is known as acre-feet per crop-acre: Use the Excel file found on the ILRP website, http://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/index.shtml#resources, and is titled "convert_to_gallons". This tool will allow you to convert from acre-feet of water applied per crop-acre grown to total gallons of water applied to all crops grown.</p>
<p>Calculate the Pounds of Nitrogen applied with the irrigation water (non CSIP/PVWMA water)</p>	<p>To determine pounds of nitrogen applied with the irrigation water (required in Section II of the form) you will need the nitrate concentration of your irrigation water and the total volume of water used (in acre-feet from above calculation). The basic formula is:</p> <p>= <u>Nitrate concentration in water</u> x <u>Total volume water applied</u> x <u>conversion factor</u></p> <p>The conversion factor to use depends on the units the lab used to report nitrate concentration. They typically use either Nitrate-Nitrogen (NO3-N) or Nitrate-Nitrate (NO3-NO3)</p> <p>For nitrate-nitrogen (NO3-N) use the following formula: Lbs N applied per ranch-acre = <u>NO3-N concentration</u> x <u>ac-ft. water used per ranch-acre</u> x <u>2.72</u></p> <p>For nitrate-nitrate (NO3-NO3) use this formula: Lbs N applied per ranch-acre = <u>NO3-NO3 concentration</u> x <u>ac-ft. water used per ranch-acre</u> x <u>0.62</u></p> <p>Example, following from above: Total volume of water = 1.41 acre-feet per ranch-acre</p>

	<p>Average nitrate concentration = 20 mg/l as NO₃ Conversion factor = 0.62</p> <p>Calculation: <u>1.41 acre-feet/ranch-acre</u> x <u>20 mg/l</u> x <u>0.62</u> = <u>17.5 lbs. N/ranch-acre</u></p> <p>Report the result in Section II-D of the form.</p>
<p>Conversion 1 Fertilizer grade from Pounds of fertilizer applied to Pounds of Nitrogen applied.</p>	<p><u>Dry fertilizer</u> and its active ingredients are expressed as a weight per area. For this type of fertilizer, the calculations are fairly straightforward. For example, 100 pounds of a 10-20-30 fertilizer-grade material contains 10 pounds of active ingredients nitrogen (N), 20 pounds of phosphorus (P₂O₅), and 30 pounds potassium (K₂O), equaling 60 pounds total of active ingredients, while the remaining 40 pounds consist of inactive materials.</p> <p>Example: Pounds of fertilizer applied per acre = 50 lbs. (Fertilizer grade) = 10-20-30. Percent Nitrogen content = 10/100 = 10% = 0.1 Lbs. of N applied = 50 lbs. fertilizer x 0.1 nitrogen = 5 Lbs. N</p> <p><u>Liquid fertilizer.</u> The density of the liquid fertilizer is a key detail because it is impossible to know the weight of a liquid fertilizer before the density is known. Typically, the net volume and net weight are available on the liquid fertilizer label. The liquid density can be calculated based on these values. For a few more examples visit http://edis.ifas.ufl.edu/hs1200</p>
<p>Conversion 2 Interconverting Nitrate as Nitrate (Nitrate-NO₃) and Nitrate as Nitrogen (Nitrate-N)</p>	<p>To convert Nitrate-NO₃ (mg/L) to Nitrate-N (mg/L): <u>Nitrate-NO₃ (mg/L) x 0.2259 = Nitrate-N (mg/L)</u></p> <p><u>For example, to convert 45 mg/L NO₃-NO₃ to NO₃-N:</u> <u>0.2259 x 45 mg/L NO₃-NO₃ = 10.2 mg/L NO₃-N</u></p> <p>And to convert Nitrate-N (mg/L) to Nitrate-NO₃ (mg/L): Nitrate-NO₃ (mg/L) = 4.4268 x Nitrate-N (mg/L)</p> <p><u>For example, to convert 10 mg/L NO₃-N to NO₃-NO₃:</u> <u>4.4268 x 10 mg/L NO₃-N = 44.3 mg/L NO₃-NO₃</u></p> <p>Note: Some laboratories might have provided the nitrogen concentration in the irrigation water as Nitrate + Nitrite as Nitrogen (NO₃NO₂-N). In these cases, the conversions that apply to the concentrations expressed as NO₃-N (Nitrate as Nitrogen) apply.</p>
<p>Conversion 3 Soil analysis conversion from Soil Nitrogen content in parts per million (ppm) to Pounds of Nitrogen present in soil per acre (lbs/acre).</p>	<p>N (lbs/acre) = Nitrate-N (NO₃-N) concentration (ppm) x 2 x soil sample thickness (in.) ÷ 6 in. (Assuming 2 million pounds of dry soil in upper 6 in/acre)</p> <p>Example: Depth NO₃-N (nitrate expressed as N) is 0 - 6 inch is 8 ppm 6 - 24 inch is 4 ppm</p> <p>Then: Lbs N in 0 - 6 inch soil depth = <u>8 ppm</u> x <u>2</u> x <u>6 in</u> ÷ <u>6 in</u> = 16 lbs. N/acre</p> <p>Lbs N in 6 - 24 inch soil depth = <u>4 ppm</u> x <u>2</u> x <u>18 in</u> ÷ <u>6 in</u> = 24 lbs. N/acre</p> <p>Lbs N total in 0 - 24 inch profile = 16 lbs + 24 lbs = <u>40 lbs. N/acre</u></p>

	For conversions that apply when using the Nitrate quick test to measure nitrogen content in the soil, review the supplemental sheets with calculations.
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LIST OF GREENHOUSE/NURSERY/HYDROPONIC DROPDOWN MENU OPTIONS (SECTION I)

- No recycling occurs; all excess water is captured and conveyed to a surface water ditch or stream
- No recycling occurs; all excess water infiltrates into the ground
- No recycling occurs; some excess water is captured and conveyed to a surface water ditch or stream and some infiltrates into the ground
- No recycling occurs; all excess water is captured and conveyed to a stormdrain, sewer, or city channel collection system
- All excess water is captured and recycled; brine/flush water is conveyed to a field or pond for percolation into the ground
- All excess water is captured and recycled; brine/flush water is conveyed to a surface water ditch or stream
- All excess water is captured and recycled; some brine/flush water is conveyed to a surface water ditch or stream, and some is conveyed to a field or pond for percolation into the ground
- All excess water is captured and recycled; brine/flush water is conveyed to a stormdrain, sewer, or city channel collection system
- All excess water is captured and recycled; the only waste is dry material, which is properly disposed of
- Other, contact Water Board staff

LIST OF ADDITIONAL INFORMATION DROPDOWN MENU SELECTIONS (SECTION IV)

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|---|---|--|
| <ul style="list-style-type: none"> • N/A – None Apply • GC – Greenhouse in Container • GG – Greenhouse in Ground | <ul style="list-style-type: none"> • NC – Nursery in Container • NG – Nursery in Ground • H – Hydroponic • P – Propagation Crop | <ul style="list-style-type: none"> • R – Research, not for human consumption • LY – Low Yield • NY – No Yield |
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LIST OF SPECIFIC CROPS IN DROPDOWN MENU (SECTION IV)

Alfalfa	Chile	Lettuce, Head (Fall/Winter)	Spring Mix, Baby (multiple cuttings)
Amaranth	Chinese Greens (A Choy)	Lettuce, Head (Spring/Summer)	Sprouts
Anise	Chinese Greens (Bok Choy)	Lettuce, Iceberg	Squash, Summer
Apples	Chinese Greens (Bok Choy, Baby)	Lettuce, Iceberg (Fall/Winter)	Squash, Winter
Apricots	Chinese Greens (Bun Choy)	Lettuce, Iceberg (Spring/Summer)	Squash, Zucchini
Artichoke	Chinese Greens (Gai Choy)	Lettuce, Leaf	Tomato
Artichoke, Seed	Chinese Greens (Gai Lan)	Lettuce, Leaf (Fall/Winter)	Turnip
Arugula	Chinese Greens (On Choy)	Lettuce, Leaf (Spring/Summer)	Strawberry (Not Final Harvest)
Arugula, Baby	Chinese Greens (Shanghai Bok Choy)	Lettuce, Romaine	Strawberry, Up to 12-months variety (Final Harvest)
Arugula, Wild	Chinese Greens (Snow Pea Tips)	Lettuce, Romaine (Fall/Winter)	Strawberry, Over 12-months variety (Final Harvest)
Asparagus	Chinese Greens (Tong Ho)	Lettuce, Romaine (Spring/Summer)	Strawberry, 2nd year (Final Harvest)
Beans	Chinese Greens (Yam Leaves)	Lettuce, Romaine Hearts	Strawberry, 2-step program, 1st step (Final Harvest)
Beans, Dry	Chinese Greens (Yu Choy)	Lettuce, Romaine Hearts (Fall/Winter)	Strawberry, 2-step program, 2nd step (Final Harvest)
Beans, Lima	Chives	Lettuce, Romaine Hearts (Spring/Summer)	Papaya
Beans, Seed	Cilantro	Mache	Parsley
Beets	Collard Greens	Malabar	Parsnip
Blackberry	Corn	Mango	Peas
Blueberry	Corn, Sweet	Marjoram	Peas, Seed
Bok Choy	Cover Crop, Legume	Melon	Peas, Snap
Bok Choy, Baby	Cover Crop, Non-Legume	Mixed Greens	Peas, Sugar
Borage	Cress	Mixed Greens, Baby	Peppers, Bell (Not Final Harvest)
Broccollette	Cucumber	Mizuna	Peppers, Bell (Final Harvest; Multiple Harvest Variety)
Broccoli	Dandelion Greens	Mustard	Peppers, Bell (Final Harvest; Single Harvest Variety)
Broccoli (Fall/Winter)	Daikon	Mustard, Baby	Peppers, Chili
Broccoli (Spring/Summer)	Dill	Nursery Perennials	Pimiento
Broccoli, Seed	Eggplant	Nursery Shrubs	Pineapple
Broccoli Rabe	Endive	Nursery Trees	Potato
Broccolini	Escarole	Oat Hay	Pumpkin
Brussels Sprouts	Fennel	Onion, Dry	Radicchio
Cabbage	Flowers	Onions	Radish
Cabbage, Chinese	Frisee	Onions, Green	Rapini
Cabbage, Green	Garlic	Orach	Raspberry
Cabbage, Napa	Grapes, Table	Orchids	Rosemary
Cabbage, Red	Grapes, Wine	Oregano	Ryegrass, Winter
Cabbage, Savoy	Greenhouse Flowers	Safflower	Thyme
Cantaloupe	Greenhouse Perennials	Seed Crops	Tomatillo
Carrot	Greenhouse Shrubs	Shallots	Walnuts
Cauliflower	Jalapeno	Sorrel	Watercress
Cauliflower (Fall/Winter)	Kale	Spinach, Baby	Watermelon
Cauliflower (Spring/Summer)	Kale, Baby	Spinach, Baby (multiple cuttings)	Yam Leaf
Cauliflower, Seed	Kalettes	Spinach, Bunch	Zucchini
Celery	Kohlrabi	Spinach, Bunch (multiple cuttings)	<i>Other - Contact Water Board</i>
Chard, Green	Leek	Spinach, Clip	
Chard, Red	Lettuce, Baby	Spinach, Clip (multiple cuttings)	
Chard, Swiss	Lettuce, Baby (Fall/Winter)	Spring Mix	
Cherry	Lettuce, Baby (Spring/Summer)	Spring Mix (multiple cuttings)	
Chicory	Lettuce, Head	Spring Mix, Baby	