



Irrigated Lands Program Domestic and Irrigation Well Monitoring and Reporting Guidance

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Description of Requirement

On an annual basis, operators (growers) and/or landowners must sample all on-farm domestic wells and each ranch’s primary irrigation well and report the sampling results to the Water Board. In addition, growers and/or landowners must promptly provide existing and new on-farm domestic well users with a summary of laboratory results and health risk information associated with nitrate and 1,2,3-trichloropropane (1,2,3-TCP).

More details about the on-farm domestic and primary irrigation well monitoring and reporting requirements can be found in this guidance document under Frequently Asked Questions, in the Compliance Calendar

(https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/compliance_calendar/), and on pages 12 through 15 in Attachment B, Monitoring and Reporting

Program for Agricultural Order No. R3-2021-0040

(https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/docs/ag_order_4/2021/ao4_att_b.pdf).

This guidance document provides information to help growers comply with requirements that apply to monitoring and reporting of on-farm domestic use and primary irrigation wells.

Frequently Asked Questions

General Information

Which wells must be sampled?

On an annual basis beginning in 2022, the following wells must be sampled:

- All domestic wells located on each ranch.
- The primary irrigation well located on each ranch (until groundwater quality trend monitoring starts).

Why do my wells need to be sampled?

The annual monitoring of on-farm domestic wells is needed to identify wells that are close to, or exceed, drinking water standards. By requiring growers to share a summary of monitoring results with people who drink or otherwise use water from the on-farm domestic wells, growers and well users can make informed decisions about continued use of water from the wells.

The annual monitoring of a ranch's primary irrigation wells is needed until groundwater quality trend monitoring and reporting starts. Primary irrigation well monitoring, and the reporting of analytical results, are needed to evaluate groundwater conditions in agricultural areas and to inform the establishment of groundwater quality trend monitoring networks.

Which wells are considered "on-farm domestic use" wells?

An on-farm domestic use well is defined as any groundwater well located within the Assessor Parcel Number (APN) of the enrolled ranch that is connected to a residence, workshop, or place of business, and may be used for human consumption, cooking, or sanitary purposes. A grower and/or landowner is responsible for sampling on-farm domestic use wells even if such wells are not included in a grower's leased property (i.e., if the well is within the APN of the enrolled ranch, it must be sampled).

Wells that are used for both irrigation and domestic purposes are "dual-use" wells and must be sampled in accordance with on-farm domestic use well requirements. Dual-use wells must be reported as domestic wells on the ranch electronic Notice of Intent (eNOI).

When must samples be collected and reported?

Beginning in 2022, annual sampling of both the on-farm domestic wells and the primary irrigation well must occur between March 1 and May 31 each year. Sampling results must be reported to the GeoTracker database by July 31 each year.

What if I am a member of a third-party program?

Growers may choose to comply with monitoring and reporting requirements for on-farm domestic and primary irrigation wells either individually or as a member of a third-party program. Central Coast Water Quality Preservation, Inc. is the approved third-party program that is available to assist growers with complying with the on-farm domestic and primary irrigation well monitoring and reporting requirements.

If you are interested in joining the third-party program or are already a member, please contact them directly for information about how they can assist you:

Website: <https://ccwqp.org/>, Email: office@ccwqp.org

How often do my well(s) need to be sampled?

Sampling and reporting must be conducted on an annual basis beginning in 2022.

What laboratory tests are required?

Regardless of the type of well (i.e., domestic or irrigation), all samples must be tested for pH, specific conductance, and temperature in the field.

Laboratory analyses of well samples must be conducted by a qualified laboratory certified for the appropriate analyses through a California Environmental Laboratory Accreditation Program (ELAP certified) and in accordance with approved standard analytical methods.

Samples from on-farm domestic wells must be tested by a qualified, ELAP-certified laboratory for nitrate as nitrogen (or nitrate + nitrite as nitrogen) and 1,2,3-trichloropropane (1,2,3-TCP). The sampling schedule for 1,2,3-TCP may decrease and/or cease if 1,2,3-TCP is not detected in a series of consecutive sampling events. See Table 1 attached to this guidance for analytical methods and reporting limits.

Samples from primary irrigation wells must be tested by a qualified, ELAP-certified laboratory for total dissolved solids (TDS) and nitrate as nitrogen (or nitrate + nitrite as nitrogen). See Table 2 attached to this guidance for analytical methods and reporting limits.

Why do I have to sample for 1,2,3-TCP in my domestic use wells?

1,2,3-TCP in drinking water is a public health concern. Although 1,2,3-TCP is no longer commonly used in agricultural practices, it has been detected in some private domestic wells in the central coast region over recent years. These detections occurred in areas where nitrate has also been detected in groundwater. As noted in Table 1 attached to this guidance, sampling for 1,2,3-TCP may decrease and/or cease if 1,2,3-TCP is not detected in a series of consecutive sampling events.

What is the cost for the sampling and analysis?

The estimated cost is \$120-\$300 per sample, depending on the type of well and the associated analytical constituents. This estimated cost is based on information from laboratories used by growers to comply individually with previous Ag Orders' requirements, and includes sampling, laboratory analyses, and electronic reporting of results to the Water Board's GeoTracker database. If you are a member of an approved third party, that third party will establish fees associated with their services.

Sample Collection

Who must collect the well sample(s)?

Groundwater well samples must be collected by a qualified third-party sampler. A qualified third-party sampler is an individual other than the grower, landowner, or

employee of the operation identified on the electronic Notice of Intent (eNOI). This person must have knowledge and specific training on proper sample collection and handling procedures, chain-of-custody protocol, and sample quality assurance/quality control practices associated with groundwater monitoring for all required constituents of concern. Examples of qualified third-party samplers include, but are not limited to, properly trained environmental consultants and laboratory personnel from a qualified laboratory. The Water Board recommends a qualified third-party sampler is independent from, and has no vested interest in, the agricultural business operation of the enrolled ranch.

Any individual collecting samples from a well, and all other individuals that handle the groundwater sample, must sign the laboratory chain of custody form, and the grower must maintain a copy of the chain of custody form for their personal records.

Growers and/or landowners who are not members of an approved third-party program are responsible for obtaining qualified sampling and laboratory services. A list of laboratories qualified to perform the required analyses and upload results to GeoTracker is on our website at https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/groundwater_quality_monitoring_and_reporting.html.

It is the responsibility of the grower and/or landowner to verify that the laboratory conducting sampling and analyses is ELAP-certified and capable of properly collecting samples and meeting the appropriate analytical reporting limits noted in Tables 1 and 2 attached to this guidance.

Where should the well sample(s) be collected?

A qualified third-party sampler must collect groundwater well samples at or near the wellhead before the pressure tank, before any filters or treatment, and before any fertilizer or soil amendment applicators. In cases where this is not possible, the water sample must be collected from a sampling point as close to the pressure tank as possible, or from a cold-water spigot located before any filters or water treatment systems.

Laboratory Analyses

Which laboratories must perform the analyses and what tests are required?

Sample testing must be conducted by a laboratory certified for the appropriate analysis through a California Environmental Laboratory Accreditation Program (ELAP certified) and in accordance with approved standard analytical methods. Samples must be tested for the constituents shown in Tables 1 and 2 attached to this guidance. Sampling results must be reported electronically to the Water Board's GeoTracker database on behalf of the growers and/or landowners. A list of laboratories qualified to perform the required analyses and data upload is located on our website at https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/groundwater_quality_monitoring_and_reporting.html.

What if I use a different laboratory than I used for previous well sampling?

The new laboratory must have all the appropriate well information, including the existing GeoTracker Global ID (AGL#), ranch names, well name (Field Point) and location

(GEO-XY coordinates). These unique well identifiers must remain the same as those provided to the laboratory previously used to test well samples. It is the responsibility of the grower and/or landowner to ensure that the information presented to the new laboratory is current and correct.

Is nitrate testing by a laboratory required every year for every well or can portable nitrate/nitrogen measuring devices be used?

Growers may **not** use a portable nitrate/nitrogen measuring device or nitrate test strips, and must use a qualified laboratory for sample analysis and reporting to satisfy the on-farm domestic and primary irrigation well monitoring and reporting requirements. Laboratory analysis must be used for the monitoring and reporting of on-farm domestic wells, a ranch's primary irrigation well (prior to the start of groundwater quality trend monitoring and reporting), and in future years, wells within a groundwater quality trend monitoring network.

Portable nitrate/nitrogen measuring devices are permitted, however, for determining nitrogen in irrigation water for total nitrogen applied (TNA) and irrigation and nutrient management plan (INMP) summary reporting purposes. For more information associated with irrigation water nitrogen measurement, please refer to page 6, paragraph 12.d in https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/docs/ag_order4/2021/ao4_att_b.pdf.

Reporting

How should I name my well?

The grower and/or landowner determines the groundwater well name (also known as “field point name” in GeoTracker). It is the responsibility of the grower and/or landowner to make this name known to the person sampling the well and reporting sampling results to GeoTracker. The well name should be simple, informative, and unique to each well (e.g., Dom1 or AgWell2). Growers and/or landowners should keep in mind that well names are displayed on GeoTracker and are, therefore, visible to the public. If a well was previously sampled, the same unique well name should be used for sampling and reporting beginning in 2022.

Do the locations of my wells need to be reported?

Yes, the accurate location (latitude and longitude) of the groundwater well(s) sampled must be reported. The following methods provide acceptable location accuracy: smart phone applications, Google Earth (WGS 84), handheld GPS device, or other similar methods. If you have not determined the accurate location of your well yourself, a qualified third-party sampler can make this determination for you by measuring and reporting the latitude and longitude in the required electronic format to the GeoTracker database on your behalf.

When must the groundwater sample results be reported to GeoTracker?

It is the responsibility of the grower and/or landowner to ensure that sampling results have been appropriately uploaded to GeoTracker Global ID (AGL#) within 60 days of sample collection, but no later than July 31 each year.

How are the sampling results reported for my ranch(es)?

Growers and/or landowners must provide specific information to the laboratory regarding each ranch's groundwater well locations (latitude and longitude), well construction information (well screen interval depths, well total depth), and groundwater well types (domestic [which includes dual-purpose wells] and irrigation). With this information, the qualified laboratory will upload the analytical results directly to your GeoTracker Global ID (AGL#) in the required electronic format.

How does the laboratory report nitrate?

Laboratory results for nitrate must be expressed as milligrams per liter (mg/L) "nitrate as nitrogen" or "nitrate + nitrite as nitrogen".

Drinking Water Notification

What is the drinking water notification, and what do I need to do?

The "drinking water notification" is a summary of well testing results and health risk information that growers and/or landowners must provide to all on-farm domestic well users. The purpose of this notification, which actually applies to all domestic uses (not just drinking of the water), is to inform on-farm domestic well users about nitrate and 1,2,3-TCP that may be in their domestic water supply so they can make decisions associated with health risk considerations.

Notification of well testing results and health risk information associated with nitrate and 1,2,3-TCP must be provided to all on-farm domestic well users in appropriate languages within three days of the grower or landowner receiving well testing results from a laboratory. Health risk information must address risks associated with consuming, boiling, cooking, and showering with water containing nitrate and 1,2,3-TCP. If the population of domestic well users changes, the new well users must also be provided with the most recent well testing results and health risk information within three days of beginning well use.

Annual confirmation of these notification actions must be documented for each ranch in Section XI of the ranch electronic notice of intent (eNOI). The eNOI must be updated within 30 days of receiving results from the laboratory to confirm the following:

1. Well users have been provided with a summary of laboratory analytical results for each on-farm domestic well.
2. Well users have been provided with information regarding health risks associated with nitrate and 1,2,3-TCP.
3. If there has been a change in the population using the well in the past year (e.g., new tenants or residents), new well users have been provided with the information and resources described above.
4. Well users have an alternate source of water for domestic purposes if the sampled well contains nitrate and/or 1,2,3-TCP in excess of their respective maximum contaminant levels (MCLs).
 - For cases where nitrate exceeds the MCL, bottled water for cooking, drinking and other domestic purposes is an adequate alternate source of drinking water.

- For cases where 1,2,3-TCP exceeds its MCL, bottled water is an adequate alternate source **if the only domestic water uses are related to ingestion** (i.e., cooking or drinking). However, if domestic uses also include showering, bathing, hand-washing dishes, or other activities where a person could inhale vapors or steam containing 1,2,3-TCP, use of a whole-house (i.e., “point-of-entry”) treatment system that can reduce 1,2,3-TCP levels below the MCL – and is in good working order -- is necessary to confirm that users have an alternate source of water for domestic purposes.

Therefore, the grower cannot confirm that on-farm domestic well users have an alternate source of water for domestic purposes unless a point-of-entry treatment system capable of reducing 1,2,3-TCP levels below the MCL is being used to address a 1,2,3-TCP MCL exceedance where domestic uses include drinking, cooking, showering, bathing, hand-washing dishes, etc.

Do I have to notify well users even if my domestic well test does not exceed the safe drinking water standards for nitrate or 1,2,3-TCP?

Yes, growers or landowners must provide domestic well users with a summary of well testing results within three business days of receiving results from the laboratory regardless of whether the results exceed drinking water standards.

What are the health risks associated with nitrate and 1,2,3-TCP in drinking water?

Nitrate is a common contaminant found in groundwater that can have serious health effects if consumed at high levels. Infants under six months of age have a greater risk of life-threatening methemoglobinemia (or “blue baby syndrome”), which is characterized by shortness of breath and blueness of the skin around the eyes and mouth. Infants with these symptoms need immediate medical attention. High nitrate levels may also affect the oxygen-carrying capacity of the blood of pregnant women.

1,2,3-TCP is an organic contaminant that easily migrates to groundwater and has been detected throughout California, including in monitoring wells, some public supply water systems, and domestic wells in the central coast region. Common sources of 1,2,3-TCP in groundwater includes solvent-related discharges and a soil fumigant used in agricultural activities from the 1950s until the 1990s. 1,2,3-TCP is classified as a human carcinogen, therefore, exposure to water with 1,2,3-TCP above the maximum contaminant level (MCL) of 0.005 micrograms per liter (µg/L) via consuming or showering with the water may result in serious adverse health effects.

More information is available on our website at

https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/groundwater_quality_monitoring_and_reporting.html.

Grower and Landowner Coordination

If a domestic well is located on a property with an Assessor Parcel Number (APN) that I have enrolled in Ag Order 4.0, but the well is not part of my lease or under my control, who is responsible for sampling?

If the on-farm domestic well is located within the property boundary of your enrolled ranch, it must be sampled and the results must be uploaded to your ranch GeoTracker

Global ID (AGL#). Both the landowner and grower of the enrolled ranch are responsible for compliance with well sampling and reporting, however only one party (typically the grower) is responsible for arranging for sampling and reporting. Therefore, the grower and landowner must coordinate to ensure all on-farm domestic wells are identified and sampled, and the results reported. The landowner will need to provide access for sampling to occur or will be required to complete sampling using a qualified third-party sampler and laboratory.

What if the landowner refuses to provide access to sample an on-farm domestic or primary irrigation well?

Landowners and growers are jointly responsible for compliance with Ag Order 4.0. If the grower has contacted the landowner and the landowner refuses to provide access, then the grower should provide this information to the Water Board in writing (email is acceptable). The Water Board will follow-up with the situation on a case-by-case basis.

If a well is shared between two ranches enrolled in the Ag Order, do both growers sample the well?

No, only one of the two ranches must claim the well in their electronic Notice of Intent (eNOI), and the reported sampling results must be associated with well noted in the eNOI.

What do I do if there isn't a well on the ranch I have enrolled?

If there are no wells located within your enrolled property boundary, no groundwater sampling is required to satisfy the on-farm domestic and primary irrigation well monitoring and reporting requirement. However, when groundwater quality trend monitoring is underway, the grower or landowner is still responsible for complying with groundwater trend monitoring for their enrolled ranch. This can be done as an individual or through a third-party program. See pages 18 – 19, paragraph 29 of https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/docs/ag_order4/2021/ao4_att_b.pdf for more information associated with groundwater quality trend monitoring.

Do I need to sample well(s) if a prior grower has already sampled and reported results for the year?

No, you are not required to sample the same well again if the prior grower or landowner completed the well sampling by July 31 of that year. However, you must confirm with the prior grower or landowner that well sampling and reporting is complete, and you must inform Water Board staff in writing (email is acceptable) on the status of the well sampling and reporting. Water Board staff will work with you to ensure the appropriate information is uploaded to GeoTracker, however, it is the joint responsibility of landowners and growers to fully comply with all requirements.

Tables for Required Groundwater Well Sampling Parameters

The following tables contain on-farm domestic and primary irrigation well sampling requirements that are also contained in Tables MRP-5 and MRP-6 of Attachment B, Monitoring and Reporting Program (MRP) for Agricultural Order No. R3-2021-0040.

Additional information associated with the contents of these tables can be found in the MRP, at https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ilp/docs/ag_order4/2021/ao4_att_b.pdf.

Table 1: Required Groundwater Sampling Parameters for On-farm Domestic Wells

Parameter	Reporting Limit ¹	Analytical Test Method ²	Units
pH	0.1	Field Measurement ³	pH units
Specific conductance	2.5	Field Measurement	µS/cm
Temperature	0.1	Field Measurement	°C
Nitrate + nitrite (as N) <i>or</i> Nitrate as N	0.1	USEPA method 300 or SM 4500NO ₃	mg/L
1,2,3-Trichloropropane (1,2,3-TCP)	0.005	SRL-524M	µg/L

1. Reporting limit, or level of quantification, defined as the level that can be reliably detected and quantified within acceptable limits of precision and bias for a given method.
2. Growers may use alternative analytical methods approved by USEPA after obtaining Executive Officer approval.
3. To ensure the collection of representative groundwater samples, all groundwater samples must be collected once field parameters stabilize (i.e., pH: ± 0.1, specific conductance: ± 3 – 5%, and temperature: ± 3%).

Table 2: Required Groundwater Sampling Parameters for Primary Irrigation Wells

Parameter	Reporting Limit¹	Analytical Test Method²	Units
pH	0.1	Field Measurement ³	pH units
Specific conductance	2.5	Field Measurement	µS/cm
Temperature	0.1	Field Measurement	°C
Nitrate + nitrite (as N) <i>or</i> Nitrate as N	0.1	USEPA method 300 or SM 4500NO ₃	mg/L
Total Dissolved Solids (TDS)	10	SM 2540-D	mg/L

1. Reporting limit, or level of quantification, defined as the level that can be reliably detected and quantified within acceptable limits of precision and bias for a given method.
2. Growers may use alternative analytical methods approved by USEPA after obtaining Executive Officer approval.
3. To ensure the collection of representative groundwater samples, all groundwater samples must be collected once field parameters stabilize (i.e. pH: ± 0.1, specific conductance: ± 3 – 5%, and temperature: ± 3%).