

IRRIGATED LANDS REGULATORY PROGRAM

Drinking Water Well Monitoring

FAQ

Updated January 2019

The information contained in this FAQ is for general guidance purposes only and may be revised to answer new questions.

Drinking water well monitoring background

On 7 February 2018 the State Water Board revised the Waste Discharge Requirements (Order) for the Eastern San Joaquin River Watershed. The revised Order includes a new drinking water well monitoring requirement. Beginning 1 January 2019, East San Joaquin Water Quality Coalition (ESJWQC) members must monitor drinking water wells on enrolled parcels for nitrates.

The purpose of this monitoring is to identify drinking water wells that have nitrate concentrations exceeding the drinking water standard and to notify well users of the potential health risks.

1. What is considered a drinking water well?

A groundwater well that is used to provide drinking water.

2. What if I don't use my drinking water well?

If you do not use your well to provide drinking water, you will not be required to monitor for nitrates. You must, however, keep records (e.g. photos, bottled water receipts) establishing that the well is not used for drinking water.

3. Why do I have to sample my drinking water well?

If you are a member of the East San Joaquin Water Quality Coalition and have a drinking water well on your enrolled parcel, you are required by your permit (General Order) to test your well for nitrate + nitrite as nitrogen in 2019. A copy of the General Order can be found here:

https://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/regulatory_information/eastern_sanjoaquin_watershed_wdrs/index.html

4. Which drinking water wells must be sampled?

All drinking water wells that are located on parcels enrolled with the East San Joaquin Water Quality Coalition must be sampled in 2019.

5. When do I start sampling?

Sampling can begin on 1 January 2019 and must be completed by 31 December 2019. You are required to sample annually. Past data may be used (see answer to question 7).

6. I am a member who is leasing the enrolled parcel and don't have access to the drinking water well. How do I fulfill this requirement?

If you don't have access to the drinking water well, you are required to notify the owner of the new monitoring requirements. The owner is responsible for the monitoring.

7. Do I have to sample my well in 2019 if it was sampled previously?

You may not need to sample your well in 2019 if you have qualifying data from the previous 5

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years. If that qualifying data is for three consecutive years, your sampling frequency will depend on the sampling results (see answers to questions 22-24).

Members may submit drinking water well sampling results from the previous 5 years (2014 to 2018) as long as the sampling for nitrate + nitrite as nitrogen was completed using EPA approved methods and by an Environmental Laboratory Accreditation Program (ELAP) certified laboratory. The data will need to be submitted into Geotracker (State database), and the member can work with a laboratory to submit the data. The laboratory will require the member to complete a Drinking Water Well Member Information Form, which was mailed to all members in an outreach package. The Drinking Water Well Member Form can also be found here:

https://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_land/drinking_water

8. Do I have to sample my drinking water well if I have a filter or treatment system?

Yes, you must sample your drinking water well even if you are using a filter or treatment system. Samples should be collected from a point nearest the well head and before any water treatment system. This will help identify if treatment specifications are being met if the treatment system was installed to treat for excess nitrogen. Please note that nitrogen concentration is only one factor that must be evaluated in ensuring an appropriate functioning treatment system.

9. Do I have to sample my drinking water well if I provide bottled water or vended water for drinking?

No, you do not have to sample your drinking water well, but you must keep records (e.g. photos, bottled water receipts) establishing that the well is not used to provide drinking water.

10. What do I have to sample for?

Members must sample for nitrates, using an analysis that measures **nitrate + nitrite as nitrogen**.

11. Where do I find an ELAP certified laboratory?

Environmental Laboratory Accreditation Program (ELAP) certified laboratories must be used when analyzing your drinking water well sample. You can search for an ELAP certified laboratory near you by using the link below:

<https://waterboards.maps.arcgis.com/apps/webappviewer/index.html?id=bd0bd8b42b1944058244337bd2a4ebfa> - search for a commercial lab nearest your location.

When selecting an ELAP certified laboratory, make sure to verify that they can analyze your well sample for nitrate + nitrite as nitrogen and that the laboratory can upload data to GeoTracker.

12. What is GeoTracker?

GeoTracker is a statewide database used to store groundwater data, which is available to the public. The public will only be able to see nitrate concentrations associated with Assessor Parcel Numbers.

Each well will have a GeoTracker account set up by the laboratory. Each GeoTracker account has a unique identification number called a GlobalID. It is important to keep track of your GlobalID so that well results are associated with the correct GeoTracker account from year to year.

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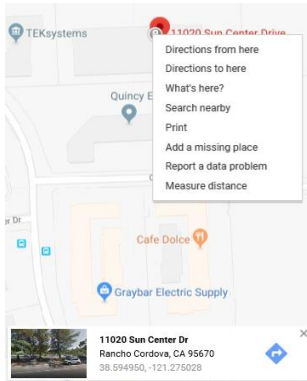
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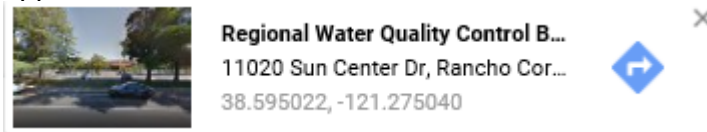
13. How do I find the latitude and longitude of my well using google maps?

While it is not required, it would be helpful to provide latitude and longitude information in your Drinking Water Well Member Information Form. Longitude and latitude can be found by using a cell phone or computer. While using google maps on a computer, type in the address and search.




Once the address is displayed on the map, using your mouse, right

click the pin drop  and select "What's here?" A display box should appear near the bottom of the screen.



In this case the results are: latitude = 38.595022, longitude = -121.275040.

On your cell phone - using google maps drop a pin  (by placing finger on map and hold in place where the drinking water well is located). When a dropped pin box comes up at the bottom of the screen, scroll down to pin symbol for latitude and longitude information.

14. Who must collect the well sample(s)?

Drinking water well samples must be collected by someone who has knowledge and training in proper sampling methods, chain of custody, and quality assurance/quality control protocols. The individual collecting the sample, and all others that handle the groundwater sample, must sign the laboratory chain of custody form. The member/owner must maintain a copy of the chain of custody.

Many laboratories offering analytical services also provide sampling services. In addition, some laboratories provide training and instruction on proper sampling methods and handling, chain of custody, and quality assurance/quality control protocols.

15. What kind of containers do I need to collect samples?

Special sampling kits/containers may be obtained from the laboratory. Members must contact the laboratory to ensure proper sampling containers for the nitrate + nitrite as nitrogen analyses and to confirm proper sample handling/ transportation protocols and hold times.

16. Where should the well sample(s) be collected?

The water sample must be collected from a sampling point as close to the pressure tank as possible; if you are unable to collect a sample close to the pressure tank you can collect the sample from a cold-water spigot located **before** any filters or water treatment systems.

17. What if I cannot collect a sample before any filters or water treatment systems?

If it is not physically possible to obtain a sample before a filter or water treatment system, obtain the water sample where you can and note that it was a treated sample by including "Trt-") at the beginning of your well name. See instructions on the backside of the Drinking Water Well Member Form.

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18. How do I collect a sample?

First, contact an ELAP Certified Laboratory for the appropriate sample bottles, chain of custody, sample procedures and specific hold times for testing nitrate + nitrite as nitrogen. It is important that you follow the procedures provided by the laboratory to obtain acceptable data.

19. When do I have to take my sample to the lab?

You should take the samples to the lab as soon as possible to allow time for analytical testing; samples may need to remain on ice until received by the laboratory. Contact your laboratory for information on hold times and other procedures for collecting samples for nitrate + nitrite as nitrogen.

20. What is the drinking water standard for nitrate?

The California Department of Public Health (CDPH) set the state drinking water standard or maximum contaminant level (MCL) for nitrate at 10 mg/L nitrate as nitrogen. CDPH also set a state drinking water standard for nitrite at 1 mg/L. Since the toxicity of nitrate and nitrite are additive, CDPH also established a standard for the sum of nitrate and nitrite as nitrogen at 10 mg/L. Drinking water with nitrate above the MCL is not safe for human consumption, especially for infants six months of age and younger, and pregnant or nursing women. The State and Regional Water Boards use the MCL (and other water quality limits) as a basis for its regulatory actions regarding the protection of drinking water.

21. How often do I have to sample?

Members must sample annually starting 1 January 2019 unless they submit three consecutive years of qualifying data from the previous 5 years into Geotracker. The monitoring frequency is altered if the nitrogen concentration is below 8 mg/L for three consecutive years or above 10 mg/L as stated in the answers to questions 22 and 24.

22. What if my nitrate + nitrite as nitrogen results are below 8 mg/L?

If the nitrate + nitrite as nitrogen sample results are below 8 mg/L for three consecutive years, members may conduct sampling once every five years going forward (next sample required in 2026 or sooner if previous data was used).

23. What if my nitrate + nitrite as nitrogen results are equal to or greater than 8 mg/L and less than or equal to 10 mg/L?

You must continue to sample your drinking water well annually.

24. What if my sample results exceed 10 mg/L nitrate + nitrite as nitrogen?

You must provide notification to the user and the Central Valley Water Board using the Notification Template provided in the information package that was sent to members or posted on our website (See below). No future sampling is required.

25. Do I have to notify users if there is an exceedance in my well?

If the sample result indicates that there is more than 10 mg/L of nitrate + nitrite as nitrogen in the well water, the member or owner must provide notice to the drinking water users (unless

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they are the member's immediate family). Notice must be provided using the [Drinking Water Notification Template](#) within 10 days of learning of the exceedance. The member or owner must also send a signed copy of the Drinking Water Notification Template to the Central Valley Water Board at irrlands@waterboards.ca.gov or mail to the following address:

ILRP Program
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670

The Notification Template was provided in the outreach materials and can also be found here: https://www.waterboards.ca.gov/centralvalley/water_issues/irrigated_lands/drinking_water

26. What if I'm not the owner of the drinking water well?

If the member is **not** the owner of the drinking water well, the member may provide notice instead to the owner within 24 hours of learning of the exceedance. The owner must provide notice using the [Drinking Water Well Notification Template](#) to the users within 9 days and send a copy of the signed Drinking Water Well Notification Template to the Central Valley Water Board as described above.

27. What if I am the only one using my drinking water well?

If the member, including family, are the only water consumers, no notification is required. The signed Notification Template with nitrate + nitrite nitrogen concentration should be sent into the Central Valley Water Board.

28. When can I stop sampling?

Sampling may cease if a drinking water well is taken out of service or no longer provides drinking water. The member/landowner must keep any records (e.g. photos, bottled water receipts) establishing that the well is not used for drinking water. Sampling can also cease if the nitrogen concentration is above 10 mg/L and the users are appropriately notified.

29. How much will this cost?

The laboratory will be able to provide you with the specific costs associated with analyzing your drinking water well sample; the cost may be higher if you need the laboratory to sample your well for you.

30. Sources of nitrates?

Nitrates (NO₃) are an essential source of nitrogen for plants. Nitrates can occur naturally in surface and groundwater at levels that do not cause health problems. However, levels of nitrates in excess of the standard drinking water standard are dangerous, especially for infants and pregnant women. Nitrate contamination in groundwater is generally associated with septic systems, confined animal feeding operations, or fertilizer use.

31. What health concerns are associated with drinking water with high nitrates (nitrate + nitrite as nitrogen above 10 mg/L)?

High nitrate levels can interfere with the ability of red blood cells to carry oxygen to the tissues of the body, producing a condition called methemoglobinemia. This is of greatest concern in infants; clinical effects on infants ingesting high levels of nitrates are often referred to as the "blue baby syndrome." Symptoms include shortness of breath and blueness in the skin. Symptoms in infants can develop rapidly, with health deteriorating over a period of days. If

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symptoms occur, seek medical attention immediately. High nitrate levels may also reduce the oxygen-carrying ability of the blood in pregnant women and increase the risks for complication in their pregnancies.

32. What can consumers do to reduce their exposure to nitrates in drinking water?

Use bottled water or vended water until an appropriate treatment system is in place.

Drinking water may be treated to remove nitrates. Home filters such as Brita filters do not remove nitrates from drinking water, but other systems can be used to remove nitrates. Treatment technologies that remove nitrate include reverse osmosis, ion exchange, and distillation. The concentration of nitrates should be known prior to selecting a treatment system as most treatment systems have limitations on the amount of nitrates that can be removed. Water supply pressure could also be a limiting factor in treatment systems. To ensure treated water remains safe to drink, treatment systems need to be operated and maintained per the treatment system manufacturer's instructions or directions. Each type of system has advantages and disadvantages, and no single system will correct all water quality problems. Please consult the State Water Board's residential water treatment approved list at:

https://www.waterboards.ca.gov/drinking_water/certlic/device/Documents/wtd2017/76Registered%20Models%20for%20Nitrate%20listing%20081117_WITH%20LINKS%20TO%20PDS.pdf

Boiling water is not a solution, as it will concentrate the nitrate level.

Do not make infant formula with drinking water that contains nitrate levels above 10 mg/L.

33. Can nitrate-contaminated water be used to bathe babies and children?

Yes. Babies and children can be bathed in water with high levels of nitrates. Showers may also be taken. Nitrates are only a concern for ingestion (eating and drinking). Nitrates are not absorbed through your skin. People who install filter systems for nitrates often install them just for their kitchen sink faucet, because they use that faucet for their cooking and drinking water.

34. Can nitrate-contaminated water be used to wash fruits and vegetables before they are eaten?

Generally, fruits and vegetables can be washed with water with high nitrate levels. The amount of water used for this purpose is small, and if the fruits and vegetables are wiped or blotted dry after washing, there should be no health risk. **The water should not be used for cooking.**

35. How can I protect my well from nitrate contamination?

It is important to remember that you are living above your drinking water. Therefore, if you do not want to drink it, do not put it on the ground! The State Water Board recommends that you create a zone of protection around your well and avoid storing, spraying, burying, dumping, or spilling chemicals or other substances within 50 feet of your well. Avoid housing your animals near your well, as their waste can also contaminate your drinking water. Install your septic tank and leach field at least 100 feet away and downgradient from your well. See State Water Board Guide for Well Owners.

https://www.waterboards.ca.gov/gama/docs/wellowner_guide.pdf

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36. What else might be in my groundwater?

In agricultural areas, the Regional Water Board recommends sampling for 1,2,3- TCP and the legacy soil fumigant DBCP.

What is 1,2,3- TCP?

In the 1940s, the agricultural divisions of Dow Chemical and Shell started selling two soil fumigants under the trade names of D-D and Telone to help farmers manage crop damaging nematodes. However, one chemical in D-D and Telone is particularly toxic to humans and persistent in the environment - 1,2,3-TCP, or Trichloropropane (TCP). 1,2,3-TCP is an exclusively man-made chlorinated hydrocarbon commonly used as an industrial solvent, cleaner, and degreaser, as well in the production of paint thinners and varnish removers. TCP is also used in the production of other chemicals, which is how it became a contaminant in two commonly used soil fumigants used in California to manage nematodes.

Because TCP containing fumigants were extensively used in California, particularly in Kern, Tulare, and Fresno Counties, contamination of drinking water wells became widespread in those parts of the state. (<https://www.cleanwateraction.org/features/tcp-californias-drinking-water>)

The maximum contaminant level (MCL) for 1,2,3 TCP has been set to 0.005 micrograms per liter.

What is DBCP?

1, 2-Dibromo-3-chloropropane, better known as DBCP, is the active ingredient in the nematicide Nemagon, also known as Fumazone. It is a soil fumigant formerly used in agriculture. (<https://en.wikipedia.org/wiki/1,2-Dibromo-3-chloropropane>)

The maximum contaminant level (MCL) for DBCP has been set at 0.2 micrograms per liter.