

Private Well Resources  
Wildfire and Flooding, General Information and Resources

# New Mexico Private Well Owners Handbook

Private Well Epidemiology, Health Education, Water Fairs, Well IDs

Learn more by scanning the QR code and selecting Drinking Water Quality or  
by visiting <https://nmtracking.doh.nm.gov/environment/Introduction.html>



Revised February 2024

State of New Mexico

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## Additional Private Well Owner/User Resources

- New Mexico Department of Health, Environmental Health Epidemiology Bureau
  - [DOH-EHEB@doh.nm.gov](mailto:DOH-EHEB@doh.nm.gov)
  - 1-833-796-8773
  - <https://nmtracking.doh.nm.gov/environment/climate/WellsAndDisasters.html>
- Center's for Disease Control and Prevention  
<https://www.cdc.gov/healthywater/emergency/drinking/private-drinking-wells.html>

Please note: All NMTracking.org sites referenced in this primer have had an updated new web address as of May 16, 2022. The new home address is <https://nmtracking.doh.nm.gov/>. You will be redirected from NMTracking.org if you have the previous one.

## Private Wells: Before, and After a Wildfire

New Mexico Department of Health recommends that private well owners take steps to protect wells, water quality, and your health when natural disasters like wildfire or flooding may impact your private well. Further information is provided here.

- **Burn scars may leave an area more vulnerable to flash flooding.** Private well owners are encouraged to take precautions to prepare for floods.
- After impact by a natural disaster, private wells should be inspected, flushed, water quality should be tested, and the well should be disinfected.
- Some steps may best be performed by a well contractor.  
You can contact the NGWA customer service department at (800) 551-7379 or visit NGWA's Web site for well owners, [www.wellowner.org](http://www.wellowner.org), and click on "Contractor Lookup" for a list of member contractors in your area.

### Wildfire

#### Wildfire and Wells Preparation Quick Tips

##### Private Wells in a Wildfire Prone Area

- Maintaining your private well will help it withstand the stress of wildfire.
- Know your private well and take pictures of the following to reference later if there is damage:
  - Storage or pressure tanks, Pump, Treatment system, Well documents, Electrical components
- Store things that easily start on fire away from your well (e.g., paint, gasoline).
- Use a well house made of fire-resistant materials and use fire-resistant electrical coverings.
- Keep the surface seal in good condition and keep extras.
- A well contractor can assist with other protective measures. Learn more at:  
<https://nmtracking.doh.nm.gov/environment/climate/WellsAndDisasters.html>

New Mexico Environmental Public Health Tracking Program

New Mexico Private Wells Program

New Mexico Department of Health/ Environmental Health Epidemiology Bureau

## Wildfire

### Wildfire and Wells Preparation Quick Tips



#### Private Wells: What to do if a Wildfire is Coming

- Buy or store safe water to use for drinking, cooking, and bathing for several days.
- Have contact information for a licensed well contractor, health department, and certified laboratory on hand.
- Clear away debris near the wellhead.
- Turn off power to your well pump and equipment (if possible) and shut off the water (if possible) using shut off valves.
- Wrap the well cap and well casing with durable flame-retardant sheet plastic and duct tape to form as tight a seal as possible.
- Place fire resistant sand bags around the well. If possible, cover the wellhead with a sealed stand pipe and bury it with fire-resistant sand bags.

<https://nmtracking.doh.nm.gov/environment/climate/WellsAndDisasters.html>



## Wildfire

### Wildfire and Wells Preparation Quick Tips



#### Private Well Tips After a Wildfire

- Step 1: Well Inspection and repair
- Step 2: Flush the well (best done by a well contractor)
- Step 3: Test your well water
  - coliform bacteria, E. coli, nitrate, other contaminants of concern
  - Retest the water in several weeks to confirm.
- Disinfect your well if:
  - Water tests positive for bacteria (E. coli)
  - Repairs done
- Prepare for flooding
  - Areas burned by fires have little to no vegetation increasing the chances of sudden floods and mudslides.

<https://nmtracking.doh.nm.gov/environment/climate/WellsAndDisasters.html>

updated 2024



# Private Wells

## WHAT TO DO BEFORE, DURING AND AFTER FLOODS

### What to do before it floods

Flooding especially after monsoons and spring runoff, is a common drinking water concern in the southwest. While floods cannot be avoided, there are some steps all well owners should do to reduce the impacts of upcoming flooding.

### Proactive Steps

1. Private well owners should make sure that their well has a cap or sanitary seal.
2. Have the well water tested annually for bacteria, nitrates, pH and conductivity.
3. Keep records of well maintenance
4. Make sure that the ground is sloped away from the well so that surface water flows away instead of towards the well head.
5. Avoid mixing, using or storing pesticides, fertilizers, fuels or any other pollutant near the well.
6. Ensure that all animal waste piles are situated on the property where water will not flow from the pile towards the well head.
7. Make sure that well casing extends at least 18 inches above land surface (NMAC 19.27.4)
8. If you have a well pit, consider upgrading your system (see factsheet on well pits).

### Prepare if flooding is likely

- If water is likely to flow towards the well head, sand bags should be used to divert the flowing water away from the well head.
- Consider protecting the area over the water line between the well and the house with sand bags, as a recent or improperly backfilled trench may provide a flow path for the flood water to the well casing.
- All capped wells are vented to allow proper functioning of the pump. Consider wrapping this vent with a tarp and duct tape or some other similar removable "seal" to keep water from flowing through the vent.
- Well heads in pits are difficult to protect. The pit should be protected using plywood, sheet plastic/ tarps, and sand bags.
- When flooding is imminent and/or evacuations are likely to occur, prepare for evacuation by turning off all utilities at the main power switch h

### Typical Construction of Private Domestic Wells

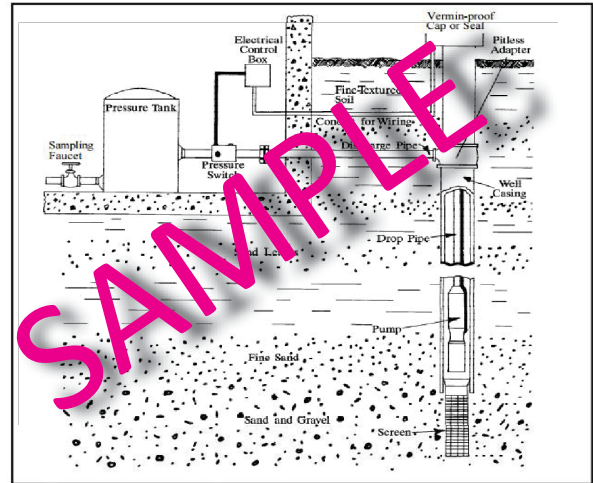


Figure 2: Typical domestic well installation with discharge pipe extending into the home. Source: Adapted from Planning Your Well: Guidelines for Safe, Dependable Drinking Water. University of Illinois-Champaign Cooperative Extension Service, December 1988. F1.3

### What to do after it floods

- Stay away from the well pump while flooded to avoid electric shock.
- Do not drink or wash from the flooded well to avoid becoming sick.
- Get assistance from a well or pump contractor to clean and disinfect your well before turning on the pump.
- After the pump is turned back on, pump the well until the water runs clear to rid the well of flood water.
- Get the water tested for bacteria before resuming use for drinking water even if the well did not get overtopped.
- IMPORTANT: If any part of the electrical system or control box has been submerged, avoid risk of electrocution and do not attempt to restart the well by yourself, call a professional well service company.

## Testing Resources

Well owners impacted by wildfire and/or flooding should have their well water tested at a certified drinking water laboratory to be sure contamination has not occurred. **At a minimum, water should be tested for bacterial contamination. If well piping (PVC or HDPE) is damaged, tests should include volatile organic compounds (VOC's) such as BTEX.** A list of labs is included. For the most current list of certified laboratories visit: [https://www.env.nm.gov/drinking\\_water/sampling-and-analysis/](https://www.env.nm.gov/drinking_water/sampling-and-analysis/)

Basic water testing services are available through free **Private Well Water Fairs**

A great partnership, NMED sponsored by the EPA, and NMDOH, sponsored by CDC, host approximately 8 water fairs a year. You can see the current schedule here:

<https://nmtracking.doh.nm.gov/environment/water/TestFairs.html>, or <https://www.env.nm.gov/events-calendar/>

Included in the on-site fields test panel are:

- Arsenic
- Electrical Conductivity
- Fluoride
- Iron
- Nitrate
- pH
- Sulfate



Testing the water from a private well will help you understand the drinking water quality.

We test for these because these are the ones that can be done in the field/on-location. Other parameters or constituents need to be tested in a certified lab, where the conditions can be controlled. But this gives you a good starting point and a chance to learn the basic chemistry of your water. In some instances, the results from the free field tests will also help guide what else to get the water tested for when you work with a private lab.

### NMED Field Offices

Besides participating in local water fairs, limited free well water testing is available through NMED field offices for: Nitrate, Iron, and Fluoride. Learn more about the Onsite Wastewater Bureau at: [https://www.env.nm.gov/liquid\\_waste/](https://www.env.nm.gov/liquid_waste/)

### What about home testing kits?

Home water testing kits (available in many hardware stores) may be an affordable option for screening water quality. However, any positive results should be confirmed by a certified laboratory. These kits should not be used to make decisions about water treatment without confirming the results.

## Laboratories Certified by NMED-DWB to Analyze Drinking Water Samples for Water Systems in New Mexico

Last Updated: 2.27.2024

Laboratory	Lab Certification Number	Certified to Analyze for Analyte group(s)*	Location	Certification Expiration Date	Phone	** On Contract
ABCWUA Water Quality Lab	NM9402	M	Albuquerque, NM	7/31/2024	(505) 289-3499	Y
ACZ Laboratories	CO00028	HM, Pb/Cu, IO, RAD, TOC, SD	Steamboat Springs, CO	7/31/2024	(970) 879-6590	N
ALS Laboratory Group - Cincinnati	OH01323	A	Cincinnati, OH	4/1/2024	(513) 733-5336	N
Anatek Labs Inc. -Moscow	ID00013	HM, SOC, VOC, IO, DBP, SD, Pb/Cu, PFAS, TOC, DOC	Moscow, ID	6/30/2024	(208) 883-2839	N
Anatek Labs Inc. -Spokane	WA00169	RAD	Spokane, WA	6/30/2024	(509) 838-3999	N
Aqua Environmental Testing -Alamogordo	NM1608	M	Alamogordo, NM	8/16/2025	(575) 921-8330	Y
Aqua Environmental Testing -Las Cruces	NM1201	M	Las Cruces, NM	5/20/2024	(575) 526-0871	Y
BSN dba Indepth Water Testing	NM9412	M	Santa Fe, NM	4/16/2025	(505) 471-2023	Y
Cape Fear Analytical	NC01894	DI	Wilmington, NC	8/31/2024	(910) 795-0421	N
Cardinal Laboratories	NM00036	M, VOC, DBP, SOC, HM, PFAS, RAD, DI, A, IO, Pb/Cu, TOC, DOC	Hobbs, NM	4/30/2024	(575) 393-2326	Y
City of Carlsbad	NM9405	M	Carlsbad, NM	4/6/2024	(575) 628-8176	Y
Farmington Environmental Lab	NM9448	M, E	Farmington, NM	7/17/2024	(505) 325-6953	Y
City of Hobbs	NM9411	M	Hobbs, NM	6/8/2024	(575) 397-9315	Y
City of Las Cruces	NM9415	M	Las Cruces, NM	10/19/2025	(575) 528-3604	N
City of Rio Rancho	NM1301	M	Rio Rancho, NM	3/17/2025	(505) 891-5024	N
City of Roswell	NM9422	M	Roswell, NM	6/1/2025	(575) 624-6752	Y
City of Tucumcari	NM9429	M, E	Tucumcari, NM	1/26/2027	(575) 461-4372	Y
Diagnostic & Technology Center	NM0301	M, E	Alamogordo, NM	8/15/2025	(505) 434-4944	Y
EMSL Analytical	NJ00337	SUR, RAD, PFAS, Pb/Cu	Cinnaminson, NJ	6/30/2024	(800) 220-3675	N
Environmental Testing Services Co., Inc.	NM9414	M, E	Albuquerque, NM	4/26/2024	(505) 881-0243	Y
EPCOR Water	NM9901	M	Clovis, NM	3/15/2025	(575) 763-5538	Y
Eurofins CEI, Inc.	NC02074	A	Cary, NC	4/1/2024	(919) 481-1413	N
Eurofins Environment Testing - Orlando	FL00091	IO, HM, SD, VOC, SOC, TOC	Altamonte Springs, FL	6/30/2024	(407) 339-5984	N
Eurofins Environment Testing South Central (formerly Hall Environmental)	NM9425	A, RAD, HM, SOC, VOC, IO, DBP, SD, Pb/Cu, PFAS, M, E, SUR, TOC, DOC, SUVA, SD	Albuquerque, NM	2/25/2025 & 1/5/2025 (M, E)	(505) 345-3975	Y
Eurofins -Savannah	GA00006	HM, VOC, IO, DBP, SD, Pb/Cu, TOC, DOC, SUVA	Savannah, GA	6/30/2024	(912) 354-7858	N
Eurofins Eaton Analytical - Pomona (formerly Monrovia)	CA00006	DI, VOC, DBPs, PFAS, TOC, DOC, SUVA, M, E, NO2/NO3	Pomona, CA	1/31/2025	(626) 386-1100	N
Eurofins Eaton Analytical - South Bend	IN00035	HM, SOC, VOC, RAD, IO, DBP, SD, Pb/Cu, SUR, M, E, PFAS, TOC, DOC, SUVA	South Bend, IN	6/30/2024	574-233-4777	N
Eurofins TestAmerica - St. Louis	MO00054	RAD	St. Louis, MO	6/30/2024	314-298-8566	N
Gallup Microbiology Lab	NM0501	M	Gallup, NM	3/15/2026	(505) 863-2001	Y
GEL Laboratories, LLC	SC00012	HM, RAD, IO, SD, Pb/Cu, PFAS (537.1 only)	Charleston, SC	10/31/2024	(843) 556-8171	N
Green Analytical	CO01041	Pb/Cu, IO	Durango, CO	1/31/2025	(970) 247-4220	N
High Desert Agricultural Consulting	NM1305	M	Deming, NM	4/4/2026	(520) 400-8845	Y
IEH Scientific Methods	IN01704	SUR	Granger, IN	4/8/2024	(574) 277-4078	Y
Industrial Water Engineering	NM2201	M, E	Albuquerque, NM	2/4/2025	(505) 345-5055	Y
National Testing Laboratories, Ltd.	MI00044	HM, VOC, RAD, IO, DBP, SD, Pb/Cu, M, E, TOC, DOC	Ypsilanti, MI	6/30/2024	(734) 483-8333	N
Niagara Bottling, LLC	PA01348	M, E	Howard, PA	6/30/2024	(814) 357-6084	N
NM Microbiology Lab	NM9428	M	Milan, NM	9/15/2026	(505) 259-8847	Y
NM Water Testing Laboratory	NM9419	M, E	Espanola, NM	6/8/2025	(505) 929-4545	Y
Northeast Laboratory Services	ME00009	M, E	Winslow, ME	12/7/2024	(207) 873 7711	N
Pace Analytical National - TN	TN00003	HM, Pb/Cu, SD, VOC, DBP, RAD, TOC, DOC	Mt. Juliet, TN	7/31/2024	(615) 758-5858	N
Pace Analytical Services, Inc. - PA	PA01457	RAD	Greensburg, PA	3/31/2025	(724) 850-5600	N
SLD - Scientific Laboratory Division	NM9424/NM00023	HM, SOC, VOC, RAD, IO, DBP, SD, Pb/Cu, M, E, TOC, SUVA	Albuquerque, NM	12/30/2023	(505) 383-9000	Y
Raton Waste Water Laboratory	NM9454	M	Raton, NM	10/29/2026	(575) 445-3861	Y
Red River AWWT Laboratory	NM9420	M	Red River, NM	11/30/2026	(575) 754-2277	Y
Town of Silver City	NM9427	M	Silver City, NM	3/4/2024	(575) 388-4981	Y

*Analyte Group Names						
HM = heavy metals		Pb/Cu = lead and copper		E = E. coli enumeration		IO = inorganics (NIT, FLU, CYA)
SOC = synthetic organic chemicals		DBP = disinfection byproducts		A = asbestos		PFAS = Per- and Polyfluoroalkyl Substances
VOC = volatile organic chemicals		SUR = Cryptosporidium, Giardia, MPA		DI = dioxin		TOC = Total Organic Carbon
RAD = radiologicals		M = microbiological		SD = secondaries		DOC = Dissolved Organic Carbon
						SUVA = Specific UV ABS

\*\* Laboratories listed as "N" are not on contract with NMED-DWB and may not submit invoices for payment of sample analyses. Systems utilizing labs which are not under contract with NMED-DWB are responsible for payment of services.

Laboratory has submitted an application to New Mexico Drinking Water Laboratory Certification Program. Certification renewal is in progress. Lab is "Provisionally Certified" at this time. Items in RED, lab is certified, but not on contract.



# Bacteria, Parasites and Viruses in Water

## Waterborne Organisms and Private Wells

### How microorganisms get in your water

Infected human or animal waste comes in contact with the water. Common ways this happens is from nearby septic systems, animals/livestock, and fertilizer (manure). After maintenance or a disturbance (like a flood) if the well head is damaged or not properly maintained.

### What you can do

Make sure the ground is sloped away from the well so water flows away from the well head.

Make sure your well has a sanitary cap or seal.

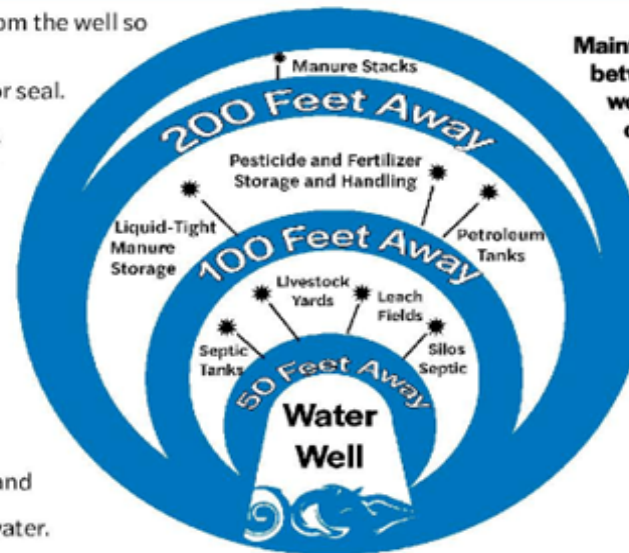
Make sure the casing extends 18 inches above the land surface (NMAC 19.27.4).

Test your well water regularly and after potential contamination (flooding).

Prepare for floods by using sandbags to divert water away from the well head.

Protect any vented areas with a tarp or duct tape.

If your system becomes contaminated, options for improving the water quality include filtration systems, disinfection, and boiling water. Learn more at <https://nmtracking.org/environment/water>.



**Maintain distance between private wells and common contamination sources.**

<https://nmtracking.doh.nm.gov/environment/Introduction.html>



Environment & Health



DMS.2018

Get details at: <https://nmtracking.doh.nm.gov/environment/water/WaterRelatedDisease.html>

Learn about private wells and drinking water quality at: <https://nmtracking.doh.nm.gov/environment/water/PrivateWells.html>

# Bacteria, Parasites and Viruses in Water

## Waterborne Organisms and Illness

Coliform bacteria are in the environment naturally and are usually not harmful.

However, when coliforms show up in your well water after testing, it could be a sign that other organisms are also in your water.

Organisms including: bacteria, parasites, and viruses found in human or animal waste can make people sick.

Children, the elderly and immune-compromised people are susceptible to stomach illness (gastro-intestinal problems) and dehydration.

### What these can do to you

Not all microorganisms found in well water will present a health risk.

However, some organisms including bacteria, parasites and viruses are in human or animal waste. The waste can get into groundwater (well water) and cause illness.

Depending on the organism, symptoms can last from 5 days to 6 weeks.

The most common type of illness is gastrointestinal with symptoms such as: stomach cramps or pain, diarrhea (sometimes bloody), vomiting, and fever.

If you have symptoms you should discuss these with your doctor and have your well water tested. Learn about water testing at [nmtracking.org/water](https://nmtracking.org/water).

<https://nmtracking.doh.nm.gov/environment/Introduction.html>



Environment & Health



## Well Water Recommended Testing Schedule

Water Quality Concern (Constituent)	Testing Schedule	Where to Test		
		NMDOH/NMED Water Fair	NMED Liquid Waste Program	Certified Lab
<b>Arsenic</b>	Periodically. When you move in and every 5-10 years.	✔💧		✔
<b>Bacteria and Pathogens (E Coli)</b>	Yearly (Spring is best). Or specifically in the case of a flood event, identifying a major water leak, or if having problems with the septic tank, or if the well/pump has been serviced.			✔
<b>Cadmium</b>	Periodically. As needed*			✔
<b>Electrical Conductivity or Hardness or Total Dissolved Solids</b>	Periodically. As needed	✔		✔
<b>Fluoride</b>	Periodically. When you move in and every 5-10 years	✔	✔	✔
<b>Iron</b>	Periodically. As needed	✔	✔	✔
<b>Lead</b>	Periodically. Test the drinking taps (kitchen sink) in the hot months. Collect first thing in the morning after the water has sat in the pipes overnight.			✔
<b>Manganese</b>	Periodically. As needed			✔
<b>Nitrate and Nitrite</b>	Yearly (spring is best).	✔ (Nitrate)	✔ (Nitrate)	✔
<b>pH</b>	Periodically. As needed	✔		✔
<b>Sulfate</b>	Periodically. As needed	✔		✔
<b>Uranium</b>	Periodically. Probably 5-10 years.			✔
<b>Any Constituent of Concern</b> Based on the human activities in the property/well location (Agricultural or mining activities for example).	Periodically.			✔

### Test When\*:

There are Natural Disasters, Floods; Well Damage; New Well Construction; Addition of Water Treatment; When Buying A Home with A Well; When Adopting A Child; When Children and Babies Will Be Living in the Home; If Well Has Never Been Tested; Changes in Water Availability (Water Table Dropped).

Learn more at: <https://nmtracking.doh.nm.gov/environment/water/PrivateWellTesting.html>

New Mexico Private Wells Program March 2024

Key: NMDOH- New Mexico Department of Health  
NMED: New Mexico Environment Department

💧 Values above 10 micrograms per Liter (mcg/L) or 0.01 milligrams per Liter (mg/L), the maximum contaminant level (MCL) recommended by the EPA, should be verified by a certified drinking water laboratory.



## Understanding Your Water Quality Results

Water Quality Concern (Constituent)	Recommended Comparison Value (sample should be less than this value**)	What Can Happen	Consider Water Treatment?		Also Test	Possible Treatment Options			
			Yes	Maybe		Whole House System ▲	At the Tap (Point of Use) ▲	Disinfection	Bottled or Hauled Water
<b>Arsenic (As)</b>	0.01 mg/L* or 10 mcg/L	(Long term exposure) skin or circulatory system problems, certain cancers	✓		<b>Fe, Mn, pH</b>	adsorption media filter or reverse osmosis	adsorption media filter or reverse osmosis		✓
<b>Coliform Bacteria and E. coli</b>	5% TC or 5 CFU/100 mL	Stomach cramps, pain, diarrhea, vomiting, fever	✓		<b>nitrate, nitrite</b>		water purifier	Boiling or chlorine bleach	✓
	Presence of E. coli		✓						
<b>Cadmium (Cd)</b>	0.005 mg/L	Kidney and bone problems, <b>children more sensitive</b>					certified Cd reducing filter or reverse osmosis		✓
<b>Electrical Conductivity (EC) or Hardness or Total Dissolved Solids</b>	1000 mcgS/cm 180 mg/L CaCO3 500 mg/L	unpleasant taste and odor, mineral deposits		✓	<b>pH</b>	cation exchange softener			✓
<b>Fluoride (F)</b>	0.7 mg/L	Ideal amount for oral health							
	2 mg/L 4 mg/L	Tooth discoloration Tooth and bone problems, <b>children more sensitive</b>	✓	✓			reverse osmosis or activated alumina filter		✓
<b>Iron (Fe)</b>	0.3 mg/L	Poor taste, color, plumbing problems		✓	<b>Mn, As</b>	oxidizing filter or cation exchange softener			✓
<b>Lead (Pb)</b>	0.015 mg/L	<b>Adults-</b> kidney problems, high blood pressure <b>Children-</b> physical or mental delays	✓		<b>pH</b>	acid neutralizer system	certified lead reducing filter		✓
<b>Manganese (Mn)</b>	0.05 mg/L	Poor taste, color, staining		✓		oxidizing filter or cation exchange softener			✓
<b>Nitrate (NO3-)</b>	10mg/L	<b>Blue baby syndrome, trouble breathing, possibly death in infants under 4 months</b>	✓		<b>bacteria</b>		reverse osmosis		✓
<b>Nitrite (NO2-)</b>	1 mg/L								
<b>pH</b>	6.5-8.5**	<6.5- dissolve metal in plumbing, tastes metallic >8.5- soda taste, slippery		✓	<b>hardness, CO2; &lt;6.5- lead</b>	<6.5- Acid Neutralizer System; >8.5 ion exchange			✓
<b>Sulfate (SO4-)</b>	250 mg/L	Laxative effect- <b>Children and seniors more sensitive</b>		✓	rotten egg smell- <b>hydrogen sulfide</b>		reverse osmosis or ion exchange or distillation		✓
	500 mg/L	Strong laxative effect	✓						
<b>Uranium (U)</b>	0.03 mg/L or 30 mcg/L	Changes in the kidneys	✓				reverse osmosis		✓

Key: ▲mg/L = milligrams per Liter ▲mcg/L= micrograms per Liter ▲TC= Total Coliform ▲CFU= colony forming units ▲mL= milliliter ▲mcgS/cm= microsiemens per centimeter

▲CaCO3= calcium carbonate ▲CO2= carbon dioxide \*mg/L sometimes shown as ppm or parts per million \*\*pH value should be in this range

▲ Recommend using products certified to NSF/ANSI standards for constituent of concern.

Learn more at: <https://nmtracking.doh.nm.gov/environment/water/PrivateWellTesting.html>

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# Water Treatment

## Disinfection of Drilled or Driven Wells

### Guidelines from the Centers for Disease Control and Prevention

#### Safety Precautions

Clear hazards away from wells before cleaning and disinfecting them. Follow these precautions:

- Turn off all electricity to the well area before clearing debris. Do not attempt to repair the water system unless you are experienced with this type of work: electrical shock can occur. Inspect all electric connections for breaks in insulation and for moisture. Connections must be dry and unbroken to avoid electric shock.
- Carefully inspect the area around the well for hazards such as power lines on the ground or in the water; sharp metal, glass, or wood debris; open holes; and slippery conditions.
- Do not enter the well pit. Gases and vapors can build up in well pits, creating a hazardous environment. Clear debris from dug wells using buckets, grappling hooks, nets, and long-handled scoops.
- Before the power is turned back on for the well, a qualified electrician, well contractor, or pump contractor should check the equipment wiring system.
- Wear protective goggles or a face shield when working with chlorine solutions. Chlorine solutions may cause injury to the eye, irritate skin and damage clothing.
- Work in well-ventilated areas and avoid breathing vapors when mixing and handling chlorine solutions.
- Warn users not to drink or bathe in water until all the well has been disinfected.

#### Follow these steps:

1. If the well is equipped with an electrical pump, turn off all electricity and clear debris from around the top of the well.
2. Repair the electrical system and pump if needed. Contact a qualified electrician, well contractor, or pump contractor if you are not experienced with this type of work.
3. Start the pump and run water until it is clear. Use the outside faucet closest to the well to drain potentially contaminated water from the well and keep unsafe well water out of the interior household plumbing. If there isn't a pump, bail water from the well with a bucket or other device until the water is clear.
4. If the well is connected to interior home plumbing, close valves to any water softener units.
5. Use the table to determine the amount of liquid household bleach needed to disinfect the well. **Use only unscented chlorine bleach.**

**Table: Approximate Amount of Bleach for Disinfection of a Drilled or Driven Well**

Depth of Water	Diameter of Well Casing						
	2 inches	4 inches	6 inches	8 inches	10 inches	24 inches	36 inches
10 feet	3/4 tbsp	3-1/4 tbsp	1/2 cup	3/4 cup	1-1/4 cups	7 cups	1 gal
20 feet	1-1/2 tbsp	6-1/2 tbsp	1 cup	1-1/2 cups	2-1/2 cups	14 cups	2 gal
30 feet	2-1/4 tbsp	9-3/4 tbsp	1-1/2 cups	2-1/4 cups	3-3/4 cups	1-1/4 gal	3 gal
40 feet	3 tbsp	13 tbsp	2 cups	3 cups	5 cups	1-3/4 gal	4 gal
50 feet	3-3/4 tbsp	1 cup	2-1/2 cups	3-3/4 cups	6-1/4 cups	2-1/4 gal	5 gal
100 feet	7-1/2 tbsp	2 cups	5 cups	7-1/2 cups	12-1/2 cups	4-1/2 gal	10 gal

**Notes**

- Use only unscented household liquid chlorine bleach.
- Bleach concentrations are generally between 5-6% and 8.25%.
- Quantities given in this table are approximate and are rounded to the nearest practical measurement. Amounts given are calculated in accordance with reaching a chlorine concentration of > 100 mg/L

**Key**

- tbsp: tablespoon
  - gal: gallon
  - 1 cup = 8 fluid ounces = 16 tablespoons
  - 1 gallon = 16 cups
6. Using a 5-gallon bucket, mix the bleach from the table with 3-5 gallons of water (12-19 liters).
  7. Remove the vent cap.
  8. Pour the bleach water mixture into the well using a funnel. Avoid all electrical connections. Attach a clean hose to the nearest outside faucet and use it to circulate water back into the well for thorough mixing.
  9. Rinse the inside of the well casing with a garden hose or bucket for 5-10 minutes.
  10. Open all faucets inside the home and run the water until you notice a strong odor of chlorine (bleach) at each faucet. Turn off all faucets and allow the solution to remain in the well and plumbing for a minimum of 12 hours.
  11. After at least 12 hours, attach a hose to an outside faucet and drain the chlorinated water onto an area without plants or other vegetation, such as a driveway. Continue draining until the chlorine odor disappears. Avoid draining into open sources of water (streams, ponds, etc.).
  12. Turn on all indoor faucets and run water until the chlorine odor disappears.

13. Until well water has been tested, boil it (rolling boil for 1 minute) before using or use another alternative water source. Wait at least 7-10 days after disinfection, then have the water in your well sampled. Water sampling cannot be done until all traces of chlorine have been flushed from the system.

### Sampling After Disinfection


- Wait at least 7 to 10 days to test the water after disinfection to ensure that the chlorine has been thoroughly flushed from the system. **Until well water has been tested, boil it** (rolling boil for 1 minute) before using or use another alternative clean water source.
- Have the water tested at a certified laboratory.
- Sample the water for total coliform and either *E. coli* or fecal coliform bacteria to confirm that the water is safe to drink.
- If results show no presence of total coliforms or fecal coliforms, the water can be considered safe to drink.
- Follow up with two more water tests, one in the next 2 to 4 weeks and another in 3 to 4 months.
- Check the safety of your water over the long term: continue to monitor bacterial quality at least twice per year or more often if you suspect any changes in your water quality.

If results show the presence of any coliform bacteria, repeat the well disinfection process and test again. If tests continue to show the presence of bacteria, contact your local health department for assistance.

### Disinfection Issues and Concerns

The disinfection process may damage water softeners due to the large amounts of chlorine used. Follow your manufacturers' instructions for appropriate methods to disinfect your softener unit. You will need to bypass the unit until completing the disinfection process.

<https://www.cdc.gov/disasters/wellsdisinfect.html>

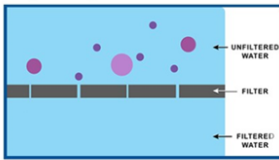


## Water Treatment Basics— Methods

### Some Methods to Reduce Harmful Microorganisms

#### Filtration

A water filter physically removes impurities from water, including disease causing microorganisms.



Filtration is classified by the pore size, or the size of the hole allowing the water through.

- ◆ **Microfiltration** (0.1 micron)- removes protozoa (*Cryptosporidium*, *Giardia*); some bacteria.
- ◆ **Ultrafiltration** (0.01 micron)- removes protozoa; bacteria (*Campylobacter*, *Salmonella*, *Shigella*, *E. coli*); some viruses.
- ◆ **Nanofiltration** (0.001 micron)- removes protozoa; bacteria; viruses (Enteric, Hepatitis A, Norovirus, Rotavirus); some chemicals.

#### Disinfection

Disinfection is a physical or chemical process which kills (or deactivates) pathogenic (illness causing) microorganisms.

**Disinfection with chlorine bleach**


- ◆ Can be a way kill bacteria and other waterborne organisms in well water.
- ◆ This type of disinfection is best done by a well contractor.
- ◆ If well owners do it themselves, it is recommended they follow safe guidelines.

**Boil your water** If your water has tested positive for bacteria, boiling it to kill germs may be a good option.

- ◆ Water should be brought to a **rolling boil for 1 minute or 3 minutes for altitudes greater than 6,562 feet.**
- ◆ If the water contains other potentially harmful chemicals or constituents, boiling the water may concentrate them.

**Ultraviolet (UV) treatment**

- ◆ Ultraviolet light is used to disinfect (reduce amount of bacteria) in water.



New Mexico Environmental Public Health Tracking and Private Wells Programs

New Mexico Department of Health/ Environmental Health Epidemiology Bureau

## Boil Water Guidelines

If your drinking water might be contaminated by microorganisms, such as bacteria, boiling can be an easy disinfection option. Some guidelines are below.

### Do I need to use boiled water for...

Drinking	YES
Cooking	YES
Washing fruits and vegetables	YES
Feeding a baby	YES (see note below)
Brushing teeth	YES
Preparing drinks (coffee, tea, Kool-Aid, frozen juices, etc.)	YES
Making ice	YES (turn off automatic ice maker)
House pets (drinking water)	YES
Hand washing	SOMETIMES (see note below)
Bathing/Showering	NO (see note below)
Shaving	NO
Washing dishes	NO (see note below)
Laundry/Washing clothes	NO
Watering house plants	NO

If certain bacteria, viruses, or parasites are in your well water, there is chance that people could get sick. Boiling the water reduces that risk.

Boiling can be used as a pathogen reduction method that should kill all pathogens. Water should be brought to a rolling boil for 1 minute. At altitudes greater than 6,562 feet (greater than 2000 meters), you should boil water for 3 minutes. Boiling (rolling boil for 1 minute) has a very high effectiveness in killing bacteria, *Cryptosporidium*, *Giardia*, and viruses.

For questions about potential health problems associated with the water, please call NMDOH at **1-833-SWNURSE (1-833-796-8773)**

### Steps for boiling water to reduce the risk of getting ill:

1. Collect your water from the tap, or other source. Look at the water. Is it cloudy/discolored? Or clear?

#### CLOUDY/DISCOLORED

- a. Filter it through a clean cloth, paper towel, or coffee filter OR allow it to settle.
- b. Draw off the clear water.
- a. Bring the clear water to a rolling boil (with bubbles) for at least one minute. At elevations above 6,500 feet, boil for at least three minutes.<sup>1</sup>

#### CLEAR

- b. Bring the clear water to a rolling boil (with bubbles) for at least one minute. At elevations above 6,500 feet, boil for at least three minutes.<sup>1</sup>

2. Turn off the heat and let the boiled water cool.
3. Store the boiled water in clean sanitized containers, with tight covers.  
<http://www.cdc.gov/healthywater/emergency/drinking/cleaning-preparing-storage-containers.html>
4. You can now use this water for drinking, washing fruits and vegetables, feeding a baby, brushing teeth, preparing drinks, making ice, preparing or washing food, providing drinking water to pets, or for hand washing before preparing or eating food.



## What should I do about feeding my baby?

Breastfeeding is best. Continue to breastfeed. If breastfeeding is not an option:

- Use ready-to-use formula, if possible.
- Prepare powdered or concentrated formula with bottled water. Use boiled water if you do not have bottled water. Disinfect water for formula if you cannot boil your water (instructions below).
- Wash and sterilize bottles and nipples before use.
- If you cannot sterilize bottles, try to use single-serve, ready-to-feed bottles.

## **Disinfecting water**

Our recommendation is to boil your water as a way to kill pathogens, which are the primary concern. However, if boiling your water is not a possibility, another method is to disinfect it.

In an emergency, liquid chlorine bleach (use bleach that does not have an added scent, like lemon) can be used. If water is clear, add 1/8 teaspoon (8 drops or about 0.75 milliliters) of household liquid bleach to 1 gallon (16 cups) of water. Mix well and wait 30 minutes or more before drinking. If water is still cloudy or not filtered, add ¼ teaspoon of household liquid bleach to 1 gallon (16 cups) of water. Store disinfected water in clean container with a cover.

## **Using un-boiled or not disinfected water**

### Bathing and showering

Un-boiled water will generally be safe for bathing/showering. Adults or children should take care not to swallow water when showering.

#### ***Special considerations:***

- Use caution when bathing infants and young children. Consider giving them a sponge bath to reduce the chance of them swallowing water.
- Individuals who are immunocompromised/immunosuppressed, and/or have open cuts, wounds, or sores should not bathe/shower with un-boiled water when a boil water advisory has been issued.

## Hand washing

Vigorous handwashing with soap and your tap water is safe for basic personal hygiene. However, if you are washing your hands to prepare food or before eating, you should use boiled (then cooled) water, disinfected or bottled water with handwashing soap. Hand sanitizer may substitute boiled water for handwashing if the hands are not visibly soiled.

## Washing dishes

You can use a dishwasher if it has a sanitizing cycle. If it does not have a sanitizing cycle, or you are not sure if it does, you may hand wash dishes and utensils by following these steps:

1. Wash the dishes as you normally would.
2. As a final step, immerse the dishes for at least one minute in lukewarm water to which a teaspoon of bleach per gallon of water has been added.
3. Allow the dishes to completely air dry.
4. You may also use boiled and cooled water or bottled water.

## **Pets**

Pets can get some of the same diseases as people. For drinking water, it is a good idea to give them boiled water that has been cooled. Pet fish should not be exposed to water containing elevated levels of bacteria. If the organism's water needs to be refreshed use appropriately boiled or bottled water.

## **Health-related questions**

### What if I already drank the water?

Most people who drink this water will not get sick. If you do get sick, the symptoms are similar to food poisoning and these symptoms would have occurred within a few days: nausea, diarrhea, cramps, and possibly a mild fever.

### What should I do if I have symptoms?

The most important thing to do is avoid dehydration. Drink plenty of fluids (such as bottled water or treated water from other sources) and avoid drinks with caffeine, such as soda, coffee, and tea. If you are concerned about your health or the health of a family member, contact your health care provider.

# Abandoned & Unused Wells

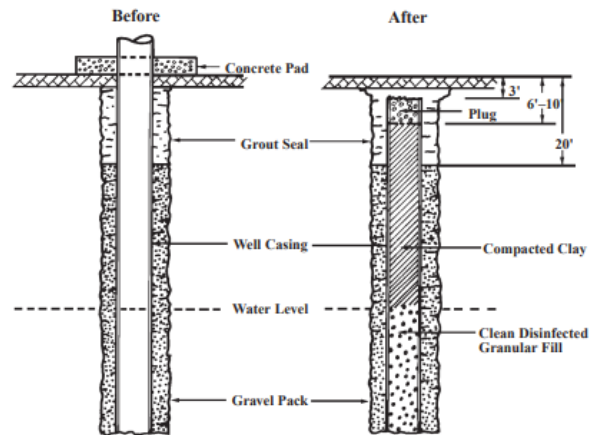
## Well Plugging Basics

**It is important to plug abandoned & unused wells. This is a safety concern for you, your family, your livestock, your pets, and your surrounding environment.**

Well use changes over time. A well may become unused for various reasons such as:

Well dries up.

- Well becomes damaged.
- Well becomes contaminated.
- Well is lost or abandoned during change of property ownership.
- Changes in land use.
- Property connects to a community water system.



### What could happen if a well isn't plugged?

- Environmental damage
  - Wells can become contaminated.
    - Higher chance for this during floods.
    - Over time some wells sink/depress, and contaminated water can pool at the well head.
    - A contaminated well can contaminate your aquifer making the water unusable.
    - Animals may get into the well, drown, and pollute the water.
- Physical injury
  - Family, pets, and livestock can fall into the well.
    - Wells can collapse.
    - When this happens, there is a chance of injury, and even death.
    - Small children and animals may not realize the dangers of a well, making them more prone to accidents.
    - Physical injury on your property can open you up to financial liability and potential lawsuits.

### What are the steps to getting my well plugged?

- Any person who engages in well drilling activities must obtain a well driller's license issued by the Office of the State Engineer (OSE). Well drilling activities include plugging of a well amongst other activities. A list of licensed well drillers may be found on the OSE website located here:  
<http://nmwrrs.ose.state.nm.us/nmwrrs/drillerLicense.html>
- To plug a well, you need to obtain approval by the OSE for sealant material and methods to be used. A licensed well driller can complete form WD-08 Well Plugging Plan of Operations (no fee) for approval and then the licensed well driller may properly plug the well.
- For more information around well plugging, contact your district OSE office which can be found here  
<https://www.ose.state.nm.us/index.php#>

