Elevated Metals in Mora County Water Supply

Guidance for Residents and Agricultural Producers

Recent water testing in Mora County has shown elevated levels of several metals in surface and well water, including: *aluminum, arsenic, fluoride, iron, uranium, manganese, antimony, selenium and thallium*. These findings are linked to post-fire landscape changes following the 2022 Hermit's Peak/Calf Canyon Fire.

While there is no immediate concern for human or animal health at current levels, long-term exposure could pose risks.[1] Producers are encouraged to take proactive steps to safeguard crops, livestock and irrigation water.

1 There is a lack of scientific literature on the effects of thallium or antimony on animal health.

Key Findings by Dr. Kate Zeigler of Zeigler Geologic Consulting, LLC

- Boiling water does not remove metals; it can increase their concentration.
- Metals detected but within safe limits: Barium, cadmium, chromium, copper, lead and vanadium.
- Aluminum was higher than EPA's recommended limit in 13 water samples.
- Antimony was above the EPA safety limit in 24 samples.
- Fluoride was higher than what's considered safe for horses in 4 samples from the Turquillo area.
- Thallium was above the EPA limit in 3 samples.
- Uranium was above the EPA limit in 3 samples, all from Turquillo.
- Iron was above the safe level for horses in 28 samples.
- Manganese was above safe levels for horses in 23 samples.
- Selenium was slightly above the safe level for horses in 15 samples.

GENERAL RECOMMENDED ACTIONS

1. TEST ALL AGRICULTURAL WATER SOURCES

Producers using private wells or surface water for irrigation or livestock should have their water tested. Testing kits are available in limited quantity at the Mora County Extension Office. Re-test regularly, especially after heavy rainfall, flooding, or fire-related runoff events.

2. PROTECT LIVESTOCK HEALTH

- Avoid using water that exceeds EPA limits for livestock drinking until treat or alternative sources are available.
- Monitor the health of animals and livestock on irrigated pasture. Contact your veterinarian in case of sudden illness or notable poor performance, changes in feed or water intake, reproductive failures or unexplained weight loss.

Metals such as arsenic and manganese can accumulate in animal tissues with prolonged exposure, potentially affecting growth, reproduction, and milk quality. Consider alternative or hauled water sources if elevated metals are detected.

3. MANAGE IRRIGATION AND CROP SAFETY

- Limit irrigation from affected sources until the water is treated.
- Use drip or targeted irrigation to minimize soil contact and reduce uptake.
- Consider soil testing in areas irrigated with surface water. For specific questions or help analyzing test results email swcenter@nmsu.edu or contact your local extension agent.
- Be aware that sprinkler or flood irrigation with contaminated water can leave metal residues on leaf surfaces.
- Growers should also watch for signs of metal exposure or dietary imbalance in livestock, as they may indicate potential contamination issues.

4. WATER TREATMENT OPTIONS

Certified filtration systems *(e.g., reverse osmosis or anion exchange)* can reduce metal levels. For filter guidance and options, visit the NMDOH Private Well Water Treatment webpage.

5. FINANCIAL AND RECOVERY ASSISTANCE

Water treatment and testing costs related to wildfire impacts may be eligible for compensation through the Hermit's Peak Calf Canyon Claims Office. Contact the Disaster Case Management Team for help: (505) 670-4662.

NOTES

HORSE OWNERS

Different minerals pose varying risk depending on exposure time, chemical form and animal factors such as age, species and activity level.

- Fluoride: Avoid water from Turquillo sites to reduce risk. Horses tolerate fluoride better than other species, and long-term exposure to 50 ppm has shown no detrimental effects.
- Iron & Manganese: Horses regulate absorption well; levels found are unlikely to cause toxicity.
- Selenium: Of greatest concern. Horses poorly regulate absorption, and multiple dietary sources (soil, forage, feed, water) may contribute to chronic toxicity. Symptoms may include dullness, poor body condition, cracked hooves, lameness, and loss of mane/tail hair.

HOUSEHOLDS WITH PETS

Pets can also be affected by elevated metals in drinking water. While current levels in Mora County do not pose an immediate concern, long-term exposure may increase risk for dogs, cats, and other small animals.

- Use treated, filtered or alternative water for pets if your well or surface water tests above EPA drinking water limits.
- Avoid letting pets drink from irrigation ditches, puddles or standing water, especially after heavy rainfall or runoff.
- Watch for changes such as reduced appetite, vomiting, diarrhea, lethargy or increased drinking/urination, and contact a veterinarian if symptoms appear.

LITERATURE RESOURCES

- Mineral contamination of water sources and potential for toxicity in horses (Dr. Turner, Nov. 24, 2025)
- Heavy metal content of produce grown in San Juan County (New Mexico, USA) (Matthews, et al 2020)

MORE INFORMATION & CONTACTS

- For human health questions, contact the NMDOH Helpline at 1-833-SWNURSE (1-833-796-8773).
- For animal health questions, contact your local veterinarian or the New Mexico Livestock Board at 505-841-6161.
- For environmental guidance, see the New Mexico Environment Department website. Find a certified laboratory for testing your drinking water.
- For agricultural guidance, see the New Mexico Department of Agriculture website or contact your nearest NMSU Cooperative Extension Service Office.
- For fire-related water impact assistance, contact the Hermit's Peak/Calf Canyon Claims Office at 505-670-4662.

Recommended Upper Safe Levels of Water Contaminants
for Horses and Other Livestock

Water Contaminant	Horses (mg/L)*	Livestock (mg/L)**
Arsenic	0.2	0.025
Cadmium	0.05	0.08
Calcium	500	1000
Chloride	3000	NA
Chromium	1	0.05
Cobalt	1	1
Copper	0.5	0.5 to 5.0
Cyanide	0.01	None
Fluoride	2	1 to 2
Hardness	200	NA
Hydrogen Sulphide	0.1	NA
Iron	0.3***	NA
Lead	0.1	0.1
Magnesium	125	NA
Manganese	0.05***	NA
Mercury	0.01	0.03
Nickel	1	1
Nitrate	400	100
Nitrate nitrogen	100	23
Nitrite nitrogen	10	3
Potassium	1400	NA
Selenium	0.01	0.05
Silver	0.05	NA
Sodium	2500	NA
Sulphate	2500	1000
TDS	6500	3000
Vanadium	0.1	100
Zinc	25	50

* Adopted from Lewis, 1995;
** CCME Guidelines for Livestock (2005), NA-recommendation not available
*** Most likely for distribution purposes

ISSUED BY: New Mexico Department of Agriculture (NMDA), in collaboration with the New Mexico Livestock Board, New Mexico State University, New Mexico Department of Health (NMDOH), New Mexico Environment Department (NMED) and New Mexico Department of Homeland Security and Emergency Management (NMDHSEM).