



Dye Trace Information and Instructions for Well Owners

Missouri Geological Survey fact sheet
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02/2014

The Missouri Department of Natural Resources performs dye trace testing on a drinking water well to evaluate the quality of their construction or to find the source of a contaminant.

To evaluate the integrity of a well casing, a small hole is dug close to the well. Dye is introduced into the ground.

The department will provide the well owner charcoal packets to be used during the dye trace, along with postage-paid envelopes that should be used to mail the samples to the department.

Four charcoal packets should be placed (one per week) in the back of the toilet tank that is used most often. The toilet tank must be free of cleaners and disinfectants before the recovery packets are introduced, and throughout the duration of the test. It is also important to inform the department if you have a carbon filter in your water line.

During the four weeks of the dye trace the well owner should:

- Remove the packet from the toilet tank at the end of each week. Excess water should be allowed to drain off the packet, but the packet should be left wet. It is important that the recovery packet be packaged individually in a zip-lock bag and labeled clearly with your name and the date the packet was removed.
- Seal the zip-lock bag containing the packet, place it in the envelope provided by the department, and promptly mail it to the address on the envelope.
- Place another packet in the toilet tank the same day the previous packet was removed. The new packet will then remain in the toilet tank for one week.
- Repeat this process until all four packets have been mailed to the Missouri Department of Natural Resources.

Dyes most commonly used are rhodamine, which is red in color, and fluorescein, which is a lime-green color. In concentrations used for dye traces, both dyes are non-toxic and harmless; however, you may not want to use the water for drinking or washing if the dye can be detected visually.

The department will analyze the packets as they are received and mail the well owner a notice of results after all packets have been analyzed. A positive result would indicate the presence of dye; a negative result would indicate no dye was present in the recovery packet. The presence of dye indicates potential problems with the well's casing. If dye is detected, a case will be started and you will be contacted by staff to further inspect your well. Should you have questions during the dye trace, call the department's Wellhead Protection section at 800-361-4827 or 573-368-2165.

Nothing in this document may be used to implement any enforcement action or levy any penalty unless promulgated by rule under chapter 536 or authorized by statute.

For More Information:

Missouri Department of Natural Resources

Missouri Geological Survey

Wellhead Protection Section

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dnr.mo.gov/geology/geosrv/wellhd/