

## **Permit Condition Violation, “Monitoring Well Maintenance” by Treatment, Storage and Disposal Facilities**

[The citation for this violation differs, as the Permits are site specific]

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All owners or operators of facilities with groundwater monitoring wells [for either post-closure units or solid waste management units (SWMUs)] should maintain the wells such that they are well-marked, locked, and in good working order. The structural integrity of the monitoring well casing, seals, and well cap must be maintained in such a way as to prevent surface water and contaminants from the surface from entering the well.

All groundwater monitoring wells should be constructed and maintained as follows:

- a. The sampling interval should be screened, the non-sampling interval should be grouted, and the casing should be installed intact.
- b. A continuous pour, intact (no cracks or gaps) concrete surface seal and well apron should be installed that is at least two feet (2') in diameter, centered around the borehole; is four inches (4") thick; and is raised above ground surface. This surface seal should be sloped away from the well to prevent ponding around the well.
- c. A measuring point should be clearly marked on the inner protective casing.
- d. Wells should be locked to prevent unauthorized entry.
- e. The monitoring well should be constructed such that it represents the quality of the groundwater at that location.
- f. Post-closure units are required to comply with §264.97(a) and §264.97(c) [General Groundwater Monitoring Requirements] of the Georgia Rules for Hazardous Waste Management.
- g. When designing and installing monitoring wells, the owner/operator of the facility should comply with the Georgia Water Well Standards Act, O.C.G.A §12-5-134, which can be found by accessing [www.gaepd.org](http://www.gaepd.org) website, and should follow *Guidance for the Design and Installation of Monitoring Wells* published by the U.S. Environmental Protection Agency's Science and Ecosystem Support Division, which can be found at <http://www.epa.gov/region4/sesd/fbqstp/Design-and-Installation-of-Monitoring-Wells.pdf>.

The facility should create an inspection checklist and inspection schedule (typically provided in the Permit Application or the Corrective Action Plan), and obtain approval from EPD to ensure that they are complete. The facility should conduct thorough, routine inspections of all wells, not limited to, but including when obtaining groundwater samples or water level measurements from the well. All inspections should be documented by an inspection checklist and should include descriptions of any problems found and the remedial actions taken to correct problems. Problems found should be remedied as soon as possible. Inspection records should be maintained at the facility and be readily available for review by EPD.

The routine visual inspections should include, but is not limited to, the identification of such problems as:

- Cracked or corroded well casing;
- Broken, damaged, or missing well cap or lock;
- Damage to protective casing, including missing bolts on flush-mounted well caps;
- On flush-mounted wells, missing or damaged gaskets or o-rings;
- Compromised integrity of the surface seals (including settling and cracking), so that fails to meet the criteria in “b” above;
- Ant mounds in close proximity to well which could lead to erosion near surface seals;
- Erosion around well;
- Ponded water in close proximity to well or inside the protective casing;
- Poorly visible or no visible measuring point/survey point;
- Silt accumulation in the well assessed by measuring total depth of well;
- Poorly visible or no visible monitoring well identification number; and

- Soil, vegetation, or landscaping covering the well, obscuring the ability to locate the well.

When closing monitoring wells, the owner/operator of the facility should comply with the Georgia Water Well Standards Act, O.C.G.A §12-5-134, which can be found by accessing [www.gaepd.org](http://www.gaepd.org) website, and should follow Section 2.8 “Well Decommissioning (Abandonment)” of *Guidance for the Design and Installation of Monitoring Wells* published by the U.S. Environmental Protection Agency’s Science and Ecosystem Support Division, which can be found at <http://www.epa.gov/region4/sesd/fbqstp/Design-and-Installation-of-Monitoring-Wells.pdf>.

Suggestions to prevent violations of this permit condition include the following:

- Thorough routine inspections, using an EPD approved checklist, as discussed above;
- Adequate and timely remedial actions for problems found during inspections; and
- Proper training of personnel involved in maintaining, sampling, installing, and closing wells.