

STATE OF MONTANA
DEPARTMENT OF ENVIRONMENTAL QUALITY

INSTRUCTIONS
MONITORING WELL CONSTRUCTION FORM

General Instructions:

Fill out a Monitoring Well Construction Form for every boring completed as a well. All applicable portions of the Monitoring Well Construction Form must be properly completed. Check the appropriate routing box at the top of the form to ensure proper routing once the form reaches the Department.

TOP SECTION

Facility/Project Name:

List the name of the landfill or project.

Well Name:

Provide the common name for the well, such as B-11, MW-13R, PCLF-2. (Use the suffix "R" for a replacement well.)

MT GWIC Well Number:

Provide the unique well number assigned by the Montana Bureau of Mines and Geology Groundwater Information Center, if one has been assigned.

Facility License Number:

The landfill license number assigned by the Department to the facility where the boring was drilled. If unknown, or a license number has not been issued, leave blank.

Well GPS Location/Well Location:

Provide the Latitude and Longitude of the well using the NAD 83 reference. Additionally, provide the legal location (Section, Township, Range) of the well to the nearest ¼, ¼ section.

Type of Well:

Check whether the well is a groundwater monitoring well, a piezometer, or an RPOC well. RPOC is a relevant point of compliance well used to monitor a specific disposal unit or units. A piezometer is a well used to measure the hydraulic head in the aquifer and typically has a shorter screen interval below the water table. The well may be an RPOC well and a groundwater monitoring well at the same time.

Date Well Installed:

Provide the date the well installation was completed in month/day/year (mm/dd/yyyy) format.

Distance from Waste Source Boundary:

Enter the distance, in feet, from the monitoring well to the edge of a facility waste storage or discharge structure, for example, from the edge of the approved waste fill boundary for a landfill or the edge of a wastewater lagoon. For a contaminant source which is not a facility, for example a spill, enter the distance the well is from the contaminant source.

Location of Well Relative to Waste Source:

Check whether the well is located upgradient, downgradient, side-gradient of the waste source, or unknown, if the gradient is unknown.

Well Installed By:

Provide the first and last name of the person installing the well, as well as their company affiliation.

Well Constructor License Number:

Provide the well constructor license number for the person installing the well.

LEFT SIDE

Numerical specifications: Fill in data for letters A through N which refer to design elements on the figure on the form. Letters A through K must be reported as elevations in feet above mean sea level (MSL) to the nearest 0.01 ft.

- A. **Protective Pipe, top elevation:** With cap off, referenced to MSL.
- B. **Well Casing, top elevation:** With cap off, referenced to MSL.
- C. **Land Surface Elevation:** Referenced to MSL.
- D. **Surface Seal, bottom:** Fill in elevation, referenced to MSL.
- E. **Bentonite Seal, top:** Referenced to MSL.
- F. **Fine Sand, top:** Referenced to MSL.
- G. **Filter Pack, top:** Referenced to MSL.
- H. **Screen Joint, top:** Referenced to MSL.
- I. **Well Bottom:** Referenced to MSL.
- J. **Filter Pack, bottom:** Referenced to MSL.
- K. **Borehole, bottom:** Referenced to MSL.
- L. **Borehole, diameter:** Diameter to nearest 0.1 inch.
- M. **O.D. Well Casing:** Outside diameter to nearest 0.1 inch.
- N. **I.D. Well Casing:** Inside diameter to nearest 0.1 inch.

LEFT CENTER INSERT (BOX)

- 12. **USCS classification of soil near screen:** Check boxes for all soil types, or bedrock, found at the depths spanned by the well screen, using the Unified Soil Classification System symbols. Refer to the native soil near the screen, not the filter pack material.
- 13. **Sieve analysis?** A sieve analysis is required for soil near the screen at all wells. Check box if the analysis is attached to the well construction form.
- 14. **Drilling method used:** Choose either Rotary or Hollow-Stem Auger, if applicable. If by another method, specify from one of the choices below:
*Reverse Rotary Solid Stem Auger Cable Tool Drive Point Vibratory
Casing Hammer Wash Boring*
- 15. **Drilling fluid used:** Check appropriate box or boxes.
- 16. **Drilling additives used:** Check box. If yes, describe.

17. Source of water: Cite source(s) of any water used to drill the well **OR** to hydrate dry bentonite **OR** to mix annular space sealant. Cite exact source so that a sample of the water can be obtained later, if necessary.

RIGHT SIDE

- 1. Cap and lock:** Check box.
- 2. Protective pipe:** Provide the information below.
 - a. Inside diameter – give to nearest 0.1-inch
 - b. Length – give to nearest 0.1 ft.
 - c. Material – check box or, if other, then specify.
- 3. Surface seal:** Check box for the material used to prevent surface water from entering the borehole. If other, specify.
- 4. Material between well casing and protective pipe:** Check box. If other, then describe.
- 5. Annular space seal:** Check boxes for materials used, volume used, and how installed.
- 6. Bentonite seal:** Check box for material used. If pellets used, also check the pellet diameter. If material installed was the same as the annular space seal, or if not filter pack seal was installed, write “NONE”.
- 7. Fine sand material:** Fine sand material is used to prevent migration of annular space seal material into the filter pack. Indicate the manufacturer, product name, and mesh size, as well as the volume added.
- 8. Filter pack material:** Indicate manufacturer, product name or number, and volume added. Attach grain size analysis of filter pack and indicate volume used.
- 9. Well casing:** Check box for PVC size. If “other”, then specify, such as stainless steel, steel, Teflon®.
- 10. Screen material:** If same as well casing, write “SAME”.
 - a. Screen type – check box. If *Other*, describe the design.
 - b. Manufacturer – List the name of the manufacturer.
 - c. Slot size – Give the width of slot in thousandths (0.001) of an inch.
 - d. Slotted length – Give distance from top slot to bottom slot, to nearest 0.1 ft.
- 11. Backfill material:** Describe any backfill installed below the filter pack. If none, check “none”.

Certification

Sign the form and indicate the name of the firm installing the well.