4725.1851 WELL AND BORING RECORDS.

Subpart 1. **General.** A licensee, registrant, or property owner or lessee for a well constructed according to Minnesota Statutes, section 103I.205, subdivision 4, paragraph (e), clause (1), must submit an accurate, verified, legible written record of well or boring construction or sealing on forms provided by the commissioner, or in a format approved by the commissioner, containing the information in subparts 2 to 4 within 30 days after completion of the work. A written construction record is not required for any well or boring sealed within 30 days of the time construction began and for which a sealing record is submitted.

A. A new or amended record is required if a notification or permit is required under parts 4725.1820 to 4725.1838.

B. The licensee or registrant must furnish the owner or owner's agent one copy, retain one copy, and submit the remaining copies to the commissioner, except that where a community health board has been delegated authority under Minnesota Statutes, section 103I.111, the remaining copies must be submitted to the delegated program.

C. A single record may be used to report more than one temporary monitoring well, dewatering well, or environmental bore hole if all the wells or borings on the record are located on a continuous parcel of property, the well or boring depths do not vary by more than 25 feet, and the wells or borings terminate in the same geologic formation. All wells or borings must be of the same type. A map must be attached to the record containing multiple wells or borings, showing all well or boring unique numbers and locations with distances and directions in relation to recognizable landmarks.

D. All depth measurements must be reported from the established ground surface.

Subp. 2. **Construction records.** Construction records for wells and borings must be completed on a form provided by the commissioner and must contain the information in subpart 3, items A to F, and the following information:

A. intended use;

B. depth;

C. drilling method;

D. casing material, diameter, and depth;

E. bore hole diameters and depths;

F. gravel pack and screen type and depth interval, or open hole interval;

G. static water level;

H. type, amount, and intervals of grout or sealing materials;

I. wellhead description including pitless adapter manufacturer and model if installed, and type of casing protection if installed;

J. date of completion;

K. pump and pumping equipment description;

L. description of the geological materials penetrated by the well or boring using terms in subpart 4;

M. hydrofractured interval if hydrofractured;

N. drilling fluid used; and

O. for bored geothermal heat exchangers, the following additional information must be provided either on the commissioner's form or on an accompanying document:

(1) the location where each pipe loop enters the drilled hole must be shown on a scaled map with angles and directions from surveyed property corners, a permanent benchmark, or the corner of a permanent structure;

(2) for bored geothermal heat exchanger piping installed using directional drilling technology, a scaled map showing the location of the entire length of each pipe loop and a cross-sectional profile showing the depth profile of the pipe loops;

(3) GPS coordinates for the location where each pipe loop enters the drilled hole or GPS coordinates marking the corners or perimeter of the loop field;

(4) the number of pipe loops in each bore hole; and

(5) the results of the required pressure test.

Subp. 3. **Sealing record.** A sealing record must be submitted for all wells and borings sealed.

The sealing record must contain the following information:

A. name and address of the property owner, and the well owner if different;

B. name, license or registration number of the contractor doing the work, name of the driller performing the work, and the signature of the certified representative;

C. date work was completed;

D. the county, township, range, section and three quartiles, and the property street address, if assigned, of the well or boring;

E. a map showing the well or boring location with distances and directions in relation to recognizable landmarks;

F. for records submitted under subpart 1, item C, the location data at the center of the project, the number of wells or borings included on the record, and a sketch map showing the location of each well or boring;

G. a description of the geological materials penetrated by the well or boring or a description of material penetrated by the nearest well or boring for which records are available, using terms in subpart 4;

H. the original well or boring depth, if known, and current well or boring depth;

I. the approximate date of construction;

J. the grout or sealing materials, quantities, and intervals;

K. the casing type, diameter, and depth if present;

L. the screen or open hole depth interval if present;

M. a description of any obstruction or pump, if present;

N. the method of sealing the annular space around the casing, if present; and

O. a description of the wellhead completion before sealing was performed.

Subp. 4. **Geological materials.** The geological materials penetrated in drilling a well or boring must be reported. The person completing the record must include the rock and unconsolidated material types, color, and relative hardness. The grain size must be reported for unconsolidated materials and may be based on field observation without technical size measurement. Geological materials must be described using the terms in items A and B, terms contained in the Dictionary of Geological Terms, Third Revision, by the American Geological Institute, or ASTM Standard D2487-00.

A. Unconsolidated materials:

Material	Diameter	Diameter	Screen Slot No.	
	Millimeters	Inches	From	To
(1) Clay	Up to 0.005	Up to 0.0002	-	-
(2) Silt	0.005-0.062	0.0002-0.0025	-	-
(3) Fine Sand	0.062-0.250	0.0025-0.0100	2	10
(4) Medium Sand	0.250-0.500	0.0100-0.0200	10	20
(5) Coarse Sand	0.500-1.000	0.0200-0.0400	20	40
(6) Very Coarse Sand	1.000-2.000	0.0400-0.0800	40	80
(7) Fine Gravel	2.000-4.000	0.0800-0.1600	80	160
(8) Coarse Gravel	4.000-62.500	0.1600-2.5000	160 and larger	
(9) Cobbles	62.500-250.000	2.5000-10.0000	-	-

B. Rock:

(1) basalt, which is a very fine-grained, dark igneous rock, commonly black, dark gray, or dark red-brown in which the mineral grains cannot be distinguished with the unaided eye;

(2) carbonate rock, which is a sedimentary rock consisting of limestone and dolomite or dolostone;

(3) dolomite or dolostone, which is a sedimentary rock composed primarily of the mineral dolomite (calcium-magnesium carbonate), which effervesces weakly in dilute hydrochloric acid;

(4) gabbro, which is a dark-colored, basic intrusive igneous rock comprised principally of basic plagioclase (commonly labradorite or bytownite) and clinopyroxene (augite);

(5) gneiss, which is a foliated rock formed by regional metamorphism, in which bands or lenticles of granular minerals alternate with bands or lenticles in which minerals having flaky or elongate prismatic habits predominate;

(6) granite, which is a plutonic rock in which quartz constitutes ten to 50 percent of the felsic components and in which the alkali feldspar/total feldspar ratio is generally restricted to the range of 65 to 90 percent;

(7) iron formation, which is a chemical sedimentary rock, typically thin bedded and/or finely laminated, containing at least 15 percent iron of sedimentary origin, and commonly but not necessarily containing layers of chert;

(8) limestone, which is a sedimentary rock composed primarily of the mineral calcite (calcium carbonate), which effervesces freely in dilute hydrochloric acid;

(9) metavolcanic (rock), which is a volcanic rock that shows evidence of having been subjected to metamorphism;

(10) quartzite, which is a very hard sandstone, consisting chiefly of quartz grains that have been so completely and solidly cemented with secondary silica that the rock breaks across or through the grains rather than around them, or a granoblastic metamorphic rock consisting mainly of quartz, which is formed by recrystallization of sandstone or chert by metamorphism;

(11) sandstone, which is a sedimentary rock consisting of cemented or otherwise compacted sediment composed predominantly of sand-sized particles generally of quartz;

(12) schist, which is a strongly foliated crystalline rock, formed by dynamic metamorphism, that can be readily split into thin flakes or slabs due to the well-developed parallelism of more than 50 percent of the minerals;

(13) shale, which is a sedimentary rock consisting of compacted or cemented silt and clay;

(14) slate, which is a fine-grained, hard, dark-colored metamorphic rock derived from shale, which typically is gray and which splits readily into flat pieces; and

(15) volcanic (rock), which is a generally finely crystalline or glassy igneous rock resulting from volcanic action at or near the earth's surface.

Statutory Authority: *MS s 103I.101; 103I.111; 103I.205; 103I.221; 103I.301; 103I.401; 103I.451; 103I.501; 103I.525; 103I.531; 103I.535; 103I.541; 103I.621; 144.05; 144.12; 144.383; 157.04; 157.08; 157.09; 157.13*

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