

Draft Minnesota Rules, chapter 4725

SUBMERGED CLOSED LOOP HEAT EXCHANGERS

This is a DRAFT document. None of the proposed language changes are adopted or reflect current rule. Proposed new language is underlined. Existing language proposed for removal is stricken with a ~~strike-out~~.

1 **4725.#### [SUBMERGED CLOSED LOOP HEAT EXCHANGERS – PERMIT**
2 **APPLICATION].**

3 Subpart. 1. **Permit required.** A person must not install or operate a submerged closed loop heat
4 exchanger system until a permit is issued by the commissioner.

5 Subp. 2. **Permit application.** The owner of the property where a submerged closed loop heat
6 exchanger system is proposed to be installed, or the property owner’s agent, must submit a
7 permit application to the commissioner. The application must be legible, accompanied by the
8 correct fee, and completed on a form, or in a format, provided by the commissioner. An
9 application must include:

10 A. Name, address, and signature of:

11 (1) well contractor installing the submerged closed loop heat exchanger system;

12 (2) owner of the submerged closed loop heat exchanger system; and

13 (3) property owner, if not the owner of the submerged closed loop heat exchanger
14 system.

15 B. License number of the well contractor installing the submerged closed loop heat
16 exchanger system;

17 C. Location of the proposed submerged closed loop heat exchanger system including:

18 (1) township, range number, section, and one quartile; and

19 (2) street address, if assigned.

20 D. Construction information for all existing wells proposed for use in the submerged closed
21 loop heat exchanger system including:

22 (1) completed well construction records; or

23 (2) for wells without available construction records:

24 (a) construction date or grouting method used during construction;

25 (b) location;

26 (c) completed depth;

- 27 (d) casing depth;
- 28 (e) casing diameter; and
- 29 (f) a description of the geology the well is completed in.
- 30 E. A description of all proposed wells for use in the submerged closed loop heat exchanger
- 31 system including:
- 32 (1) location;
- 33 (2) completed depth;
- 34 (3) casing depth;
- 35 (4) casing diameter;
- 36 (5) grouting material;
- 37 (6) grouting intervals;
- 38 (7) gravel packed intervals and screened intervals, if applicable; and
- 39 (8) a description of the geology the well is completed in.
- 40 F. Submerged closed loop heat exchanger system specifications including:
- 41 (1) a list of heat transfer fluid additives;
- 42 (2) associated safety data sheets for heat transfer fluid additives;
- 43 (3) proposed maximum use concentrations of heat transfer additives;
- 44 (4) operating pressure;
- 45 (5) pitless make and model;
- 46 (6) submersible pump maximum design flow rate;
- 47 (7) information for all piping anticipated for use including:
- 48 (a) diameters;
- 49 (b) type of material with associated standard;
- 50 (c) pipe wall thickness; and
- 51 (d) pressure rating; and
- 52 (8) type of seals or packers anticipated for use.
- 53 G. Leak detection and mitigation plan describing how the submerged closed loop system
- 54 will be monitored for potential leaks and mitigation strategies. The plan must include:
- 55 (1) design documents with locations of leak detection and mitigation devices;
- 56 (2) proposed system monitoring frequency;
- 57 (3) a description of the conditions that will cause an alert or shut-off;
- 58 (4) a description of the planned response to an alert or shut-off; and

59 (5) a description of entities and roles of persons involved in system monitoring and
60 response.

61 H. Site plan of proposed submerged closed loop heat exchanger system including:

62 (1) all existing and proposed well locations where submerged closed loop heat
63 exchangers will be installed; and

64 (2) distances to:

65 (a) property lines;

66 (b) structures;

67 (c) utilities;

68 (d) other wells on the property, if applicable; and

69 (e) contamination sources.

70 I. Diagram of the proposed submerged closed loop heat exchanger system showing each
71 in cross-sectional view, including:

72 (1) a description of the anticipated geology the wells will be completed in;

73 (2) existing or proposed well construction information including:

74 (a) completed depth;

75 (b) casing depth;

76 (c) borehole diameter; and

77 (d) casing diameter;

78 (3) heat exchanger installation depth;

79 (4) pitless unit installation depth and diameter;

80 (5) depth of seals or packers; and

81 (6) depth of submersible pump.

82 J. Any additional information the commissioner deems necessary to protect public health
83 and safety of the groundwater.

84 **Subp. 3. Incomplete application.** The commissioner will deny the application if required
85 information is not received within 180 days of receipt.

86 **Subp. 4. Leak detection and mitigation plan approval.** The commissioner must approve the
87 leak detection and mitigation plan for an application to be considered complete.

88 **Subp. 5. Additional information.** The commissioner may request additional clarifying
89 information and documents to assess whether the application meets all requirements.

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