Minutes: Submerged Closed Loop Heat Exchangers Advisory Committee

Date September 23, 2025, 9:00 – 11:00 a.m.

Location Hybrid Teams Meeting; Minnesota Department of Health, Freeman Building, 625 Robert St. N., Saint Paul, MN 55164

Attendees **In Person:** Danny Nubbe (Certified Representative), David Henrich (Advisory Council on Wells and Borings), Jeff Foss (alternate - Geothermal Professional), Jeremy McConkey (Professional Association), Keith Larson (Geothermal Professional), Ryan SanCartier (Professional Association), Wes Rutelonis (alternate - Delegated Well Program), Willy Miley (Geothermal Professional)

Virtual: Dave Schulenberg (Professional Association), Dave Traut (Certified Representative), Don VanKeulen (Delegated Well Program), Jay Egg (Geothermal Professional), Luke Hollenkamp (City Representative)

MDH: Jon Olson (WMS Technical Unit Supervisor), Jennifer Weier (WMS Hydrologist Supervisor), Avery Guertin (WMS Regulatory Coordinator), Kara Dennis (WMS Hydrologist)

Acronyms and Terms

BGHE – Bored Geothermal Heat Exchangers

IGSHPA – International Ground Source Heat Pump Association

IMC – International Mechanical Code

MPCA - Minnesota Pollution Control Agency

SCLHE – Submerged Closed Loop Heat Exchangers

WMS – Well Management Section

Welcome and updates

Guertin provided facility information to committee members attending in person. She also gave an overview of the expedited rulemaking process authorized by Minnesota Statutes, chapter 103I, which could be used to amend the SCLHE rules.

Guertin noted that most of the previous advisory committee meetings took place before the permanent SCLHE rules were adopted in May 2025. The agency convened the advisory committee to maximize the opportunity to learn from members' expertise on topics proposed for consideration during this rulemaking.

After the rule adoption, the agency initiated the expedited process to make amendments. Under this process, any revision must be directly related to SCLHE systems. A notice of the proposed amended rules must be published by December 31, 2025.

Rulemaking path

Guertin provided an overview of the topics that will be addressed in this expedited rulemaking process. These topics include:

- split screen configurations for water-supply wells constructed into bedrock,
- grouting for split screen configurations,
- material requirements, and
- requirements for the pressure test record.

There are additional topics under consideration for inclusion in this expedited rulemaking. Currently, the agency is evaluating information needed to decide on whether the topic will be included in this rulemaking. These topics include adding an individual with an International Ground Source Heat Pump Association (IGSHPA) certification to:

- Conduct a pressure test, and
- Witness a pressure test.

After much consideration, the agency has decided to not include these topics in the expedited rulemaking for SCLHE systems. These topics include:

- reducing isolation distance for water-supply wells used in a SCLHE system,
- updates to drilling methods,
- thermal monitoring requirements for SCLHE systems, and
- changing the category for a SCLHE well.

The agency plans to address isolation distances to contamination sources for all water-supply wells covered under Minnesota Rules, chapter 4725, in an upcoming rulemaking. This topic is not proposed to be addressed during this expedited rulemaking for SCLHE systems. Creating an exception for water-supply wells used in SCLHE systems from the current isolation distance requirements would disallow the water-supply well to be used for another purpose (dual or future use), which was communicated as of interest during previous advisory committee meetings.

Wells can become conduits to groundwater and drinking water resources. Maintaining isolation distances to contamination sources ensures protection of these resources and groundwater quality.

To date, less than three percent of variance requests for SCLHE systems involve isolation distances. Beginning January 1, 2026, the agency will be able to consider criteria for granting a variance in rule, including "undue burden on the applicant," when reviewing variance requests for these systems. Currently, legislation prevents this consideration for a water-supply well used in an SCLHE system if a legal well location exists on the property.

While the agency acknowledges the importance of updating drilling methods to incorporate newer technologies, this topic will not be included in the expedited rulemaking for SCLHE systems. Updates to drilling methods relate to all wells and borings and will be addressed in future rulemaking opportunities.

The agency currently lacks sufficient data to support developing requirements related to thermal monitoring of SCLHE systems. This topic will not be part of the expedited rulemaking but may be considered later if a demonstrated need arises and it falls within the agency's authority.

Finally, changing the classification for water-supply wells for use in SCLHE systems would require a statutory change and will not be included in this expedited rulemaking.

Committee discussion clarifying the proposed rulemaking path

Traut shared that reduced isolation distances from contamination sources were developed for wells meeting minimum construction standards and could be reduces for deeper wells constructed in more protective geology. Hollenkamp expressed disappointment that revisions to isolation distances will not be included in this expedited rulemaking process. He noted that the City of Minneapolis is currently developing a geothermal project that will be unable to comply with the existing isolation distance requirements. Weier explained that changes to isolation distances would be more appropriately addressed through a separate, comprehensive rulemaking effort that would apply to all water-supply wells. She also clarified that well construction can still move forward for SCLHE systems in urban areas and other properties with limited space through a variance. Under the current legislation, a variance to isolation distances for SCLHE wells cannot be considered if a legal location exists on the property to construct the well, but can still move forward if a legal location does not exist. Weir reiterated that this legislative restriction will sunset on December 31, 2025. Beginning January 1, 2026, the agency will be able to consider variance requests for SCLHE systems that are unable to meet isolation distance requirements through the standard process.

Henrich expressed frustration that reduced isolation distances for water-supply wells used in a SCLHE system are not being addressed in this rulemaking. He stated that it would be feasible to model what constitutes a safe isolation distance specifically for wells used in SCLHE systems, suggesting the existing requirements are intended specifically for potable water-supply wells. Olson emphasized the importance of comprehensively evaluating isolation distances for water-supply wells. He noted that the agency has a responsibility to protect both public health and groundwater resources. Any change to isolation distance requirements would require strong scientific evidence demonstrating that the reduction in distances would not pose a risk to public health.

Foss asked about isolation distances related to spreading contaminants, whether heat is considered a contaminant, and how movement of water by SCLHE wells can affect contaminants in the aquifer. Weier clarified that isolation distances relate to surface and near-surface contamination sources and typically address sources of sewage, animal manure, petroleum, agricultural chemicals, and hazardous chemicals. The isolation distances are not dependent on the pumping rate of the well. A not-in-use well can be a conduit for groundwater contamination, which is why the agency prioritizes sealing unused wells. She also explained that the spread of existing groundwater contamination in the aquifer is a concern when wells are pumping, and different types of geothermal systems have different potential for effects on the aquifer. The agency has a process for evaluating SCLHE and other geothermal systems during the permitting process for potential risks related to the spread of groundwater contaminants. This evaluation is conducted in consultation with the Minnesota Pollution Control Agency (MPCA).

Henrich asked what steps could be taken, or what data would be needed, to address isolation distances. Weier outlined a potential process for evaluating isolation distances, beginning with a review of isolation distance requirements in other states and of research related to isolation distances. She added that in some cases Minnesota's requirements are not as strict as other states with similar geology. She noted that any changes to isolation distances would need to be equally protective of public health and groundwater as the existing requirements. Weier encouraged committee members to share any relevant research or data that could support the evaluation of isolation distances. Henrich responded that rather than focusing on other states, the priority should be to develop requirements specific to Minnesota.

Olson raised concerns regarding the frequency of leaks in SCLHE systems. Miley explained that when a leak occurs, part of the process involves notifying the MPCA. He also noted that the heat transfer fluid used in these systems is potable water, so leaks do not pose a contamination risk. Miley added that leak issues should not influence isolation distance requirements and suggest that addressing leaks would be better handled through updated material requirements.

Committee discussion evaluating expanding the pressure testing requirements

McConkey inquired about the certifications required to conduct pressure tests on SCLHE systems. Current rules specify that pressure tests may be conducted by bonded mechanical contractors, licensed well contractors, or licensed plumbers. Pressure tests must be witnessed by a third party who is a Department of Health inspector, licensed professional engineer, licensed plumber, or bonded mechanical contractor. McConkey expressed concern about the number of leaking SCLHE systems and suggested that HVAC contractors should also be authorized to conduct pressure tests.

Weier added that the agency has reached out to IGSHPA, who noted their certifications apply to Bored Geothermal Heat Exchangers (BGHE), though some of their training may include topics relevant to SCLHE systems. IGSHPA indicated they are transitioning to a different certification program with new certification types. MDH will have to evaluate their old and new certifications to determine if they are appropriate for SCLHE systems.

Material requirements for SCLHE Systems

McConkey asked who is responsible when unapproved materials are used in SCLHE systems. Guertin responded that the system owner holds the ultimate responsibility for the operation of a system. Miley added that SCLHE systems must be constructed using approved materials, as specified in Minnesota Rules.

McConkey expressed concern about the liability for system owners if components fail years after installation. Henrich noted that the main issues are not the materials themselves but the joints. Miley explained that Darcy Solutions has suggested adopting a performance-based rule, rather than requiring adherence to a specific mechanical standard such as in the International Mechanical Code (IMC). This approach would allow the use of alternative materials, provided they meet the necessary performance criteria for SCLHE systems.

Open Forum

There were no comments from the public.

Adjournment

Guertin acknowledged the agency's commitment to finding a solution for the material requirements as part of this expedited rulemaking. She asked the committee who would be interested in continuing focused discussions on this topic, including working through potential language revisions. Dave Traut, Jay Egg, Jeremy McConkey, Keith Larson, Danny Nubbe, David Henrich, Willy Miley, and Jeff Foss (alternate for Jim Lubratt) volunteered to assist.

In the meantime, Guertin requested that committee members submit any draft language suggestions as soon as possible and aims to have a complete draft available by the end of October. The date for the next meeting has not yet been scheduled and may be held virtually. Guertin will send a follow-up meeting later this week outlining the topics to be addressed as part of the expedited rulemaking process.

Miley inquired about the timeline for the expedited rulemaking process. Guertin and Olson explained that the draft rules will need to be submitted to the State Revisor by late November or early December. They added the rule draft is not expected to be lengthy, as the number of topics being addressed is limited compared to the initial SCHE rule adoption. During this expedited process, the existing rule will be amended to incorporate the topics identified for inclusion (listed above).

10/3/2025

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