

North Dakota Geological Survey

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APPENDIX B

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North Dakota Industrial Commission

www.state.nd.us/ndgs

Administrative Rules Committee

Ed Murphy

North Dakota Geological Survey

December 12, 2007

NDAC 43-02-07 Geothermal Energy Production

Pages 303 and 304 in your handout.

1. Whether the rules resulted from statutory changes made by the Legislative Assembly.

One of the two rule changes (NDAC 43-02-07-06), the one dealing with permitting of residential geothermal facilities, was the result of statutory changes (House Bill 1060).

2. Whether the rules are related to any federal statute or regulation.

Neither of the two rule changes (NDAC 43-02-07-06 or 43-02-07-15) is related to any federal statute or regulation.

3. A description of the rule making procedure followed in adopting the rules.

August 1, 2007 – Submitted rules to Industrial Commission and received their approval.

August 1, 2007 – Filed full notice and rules with Legislative Council via hand-delivery.

August 1, 2007 – Sent legal advertisement to the North Dakota Newspaper Association for rules notice (ad to be published between August 5 and August 13).

August 1, 2007 – Wrote regulatory analysis, small entity regulatory analysis, and small entity economic impact statement.

August 2, 2007 – Copy of proposed rules posted on ND Geological Survey website.

August 13, 2007 – All papers (10 daily and 42 weekly) published proposed rules notice between August 5 and August 13.

September 4, 2007 – Held a rules hearing in the DMR Conference Room (Case 11348). Received no oral comments.

September 14, 2007 – Written comments were accepted until 5:00 pm. Received no written comments.

October 17, 2007 – The North Dakota Industrial Commission approved the rules (Order no. 9650, Case 11348).

October 17, 2007 – Submitted final rules to Attorney General for an opinion

November 8, 2007 – The Attorney General approved the legality of the proposed rules.

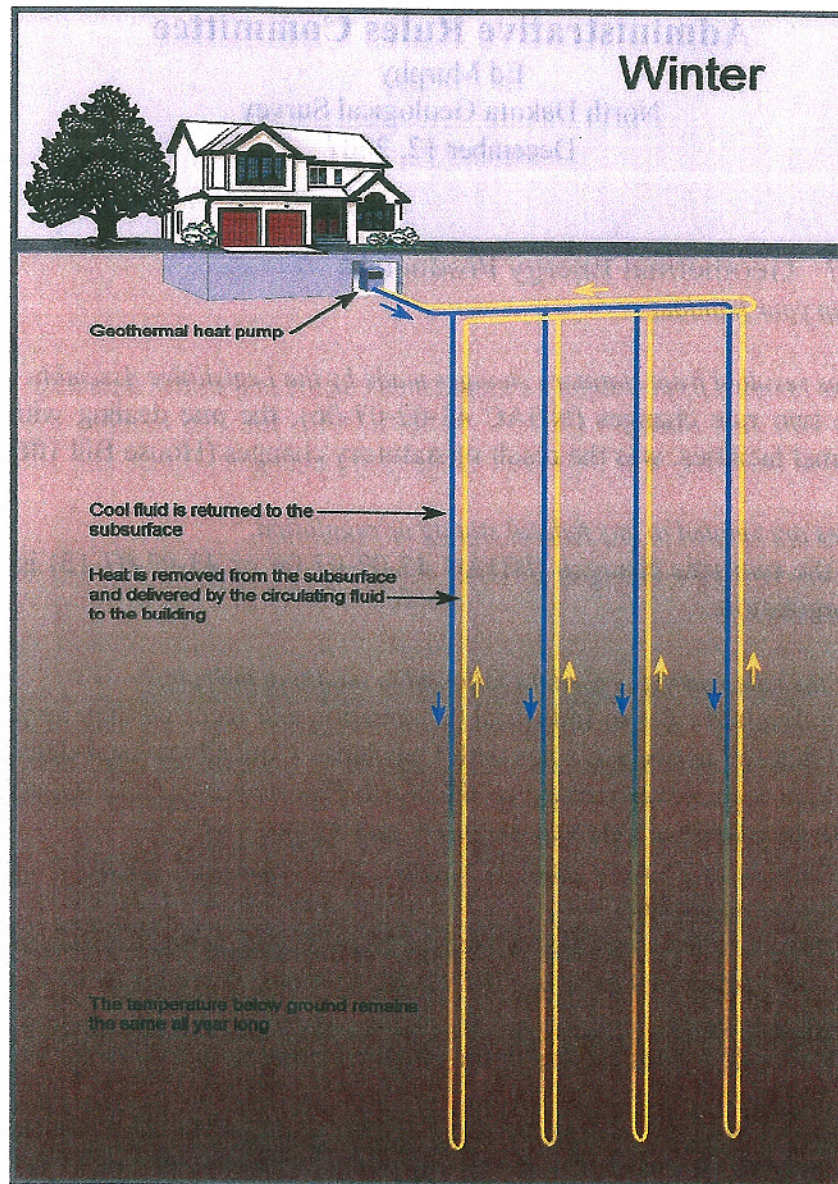
November 13, 2007 – Filed rules with Legislative Council, along with copy of AG's opinion.

November 29, 2007 – Posted notice of Administrative Rules Committee Hearing on NDGS website.

4. *Written or oral concerns, objections, or complaints for agency consideration with regard to these rules.*
No oral or written comments were received on these rule changes.

5. *The approximate cost of giving public notice and holding any hearings.*

The total cost to the North Dakota Geological Survey, beyond staff time, was \$337 to advertise in the state's newspapers. We split the advertising costs with the North Dakota Oil and Gas Division.



	<u>Residential System</u>	<u>Commercial System (e.g., Century Center)</u>
Depth	150 - 200 feet	200 feet
Number of loops (wells)	5	286
Gallons of fluid	80	6,000
Cost beyond conventional	+ \$6,000	+ \$100,000
Payback	7-15 years	2.5 years

6. *An explanation of the subject matter of the rules and reasons for adopting those rules.*

NDAC 43-02-07-06 Prior to passage of House Bill 1060 during the 60th Legislative Session, residential geothermal facilities were not permitted. However, for the past fifteen years geothermal installers were required, under penalty of law, to submit completion reports for residential geothermal facilities. Many completion reports were not submitted because installers did not understand they had to submit reports for a facility that was not under permit. We determined the best way to remedy this situation was to require a permit. The proposed application fee for a residential facility is \$20 compared to the \$100 fee for commercial facilities.

NDAC 43-02-07-15 Since 1992, only those closed-loop facilities that use an approved heat transfer fluid have been permitted. At the same time, because a number of the older systems were using non-approved fluids, we required these non-approved fluids be purged from the system at the time of abandonment. A number of states are now requiring all heat transfer fluids be purged from closed-loop geothermal systems prior to system abandonment. We re-evaluated the situation and determined that it would be prudent to purge all heat transfer fluids from abandoned geothermal facilities to reduce the risk of releasing any fluids that could potentially degrade an aquifer.

7. REGULATORY ANALYSIS

NDAC 43-02-07-06

NDAC 43-02-07-15

A regulatory analysis was conducted even though it was not requested and the impact on the regulated community is not likely to exceed \$50,000 in the foreseeable future.

Classes of Persons Impacted by These Rule Changes

The classes of persons impacted by these proposed rule changes are geothermal installers, homeowners, and owners of commercial facilities that currently have, or will have in the future, a geothermal facility. Homeowners and owners of commercial facilities will bear the cost and geothermal system installers will benefit from additional work due to the purging of abandoned systems. Although paid by the system installer, homeowners will ultimately pay for the \$20 residential permit fee. When the geothermal systems are plugged, the owner of the facility will pay for the heat transfer fluid to be purged from system.

Probable Impact

1) Residential Geothermal Permits – We estimate there are 70 residential facilities installed per year. The \$1,400 fee that would be collected from those applications is spread over a half dozen installers. Ultimately, that modest fee will be passed along to the homeowner.

2) Purging of geothermal system prior to abandonment – In the last 23 years, at least 300 geothermal systems have been installed in North Dakota. For environmental reasons, we are requiring that systems be purged of heat transfer fluid before they are abandoned. This would cost several hundred dollars for a residential facility and several thousands of dollars for a large commercial facility. We are not aware of the abandonment of any of the 300 systems that we have permitted. Therefore, the average annual cost for this rule change would be \$0.

Estimated Cost to the Agency

1) Residential Geothermal Permits – This will triple our field inspection workload in the geothermal program. On average, we have been inspecting 24 commercial facilities per year. We anticipate inspecting 70 residential facilities this year. At this time, we anticipate the residential permit fee will offset the cost of issuing the permits and inspecting the facilities.

2) Purging of geothermal system prior to abandonment – We would be field inspecting the abandonment of a geothermal facility whether there was a requirement to purge the heat transfer fluid or not. Therefore, this change will not increase administrative costs to the agency.

Alternate Methods Explored

1) Residential Geothermal Permits – Under the previous statute, residential installers were not required to obtain a permit, but were required to submit a completion report. Due to the lack of a permit, most installers were not aware they had to submit a completion report and were in violation of our rules and could be subject to a substantial penalty. We thought the requirement of a permit would enable us to determine if sites were properly designed prior to their installation, enable onsite inspection during installation to stop or prevent environmental problems before they occurred, and reinforce to the installers the need to submit a completion report. We discussed our intent to require a permit with a modest application fee with installers at the 2006 ND Water Well Driller's Convention and most were supportive of the idea. Another means considered was not requiring a residential permit and dropping the requirement for a residential completion report, but that would have resulted in the State having no idea where these residential systems are being installed, if they are being installed properly, and if they are using an environmentally approved heat transfer fluid.

2) Purging of geothermal system prior to abandonment – We considered leaving the approved fluid in the system, but determined that even an approved fluid could pose an environmental risk or, at the very least, a taste deterrent in an aquifer. Purging the system of this fluid was the only means of ensuring that this would not happen in the future.

8. SMALL ENTITY REGULATORY ANALYSIS

NDAC 43-02-07-06

NDAC 43-02-07-15

All geothermal installers in North Dakota can be defined as small entities. Therefore, the rule changes do not place them at a disadvantage to large entities. Because there is no adverse impact, small entities will not be exempt from these rules.

Minimize the adverse impact on small entities by establishing less stringent compliance or reporting requirements.

The compliance and reporting requirements for these rule changes is minimal. The permit application is only one page in length.

Minimize the adverse impact on small entities by establishing less stringent schedules or deadlines for compliance or reporting requirements.

As is, the geothermal program has only a handful of reports and the installer routinely uses only two forms, the permit application and completion report.

Minimize the adverse impact on small entities by consolidating or simplifying compliance or reporting requirements.

There are only a handful of forms. These are one-page, straight-forward forms.

Minimize the adverse impact on small entities by establishing performance standards that replace design or operational standards required in the proposed rules.

This would not be applicable for the rules governing geothermal energy production.

Minimize the adverse impact on small entities by exempting small entities from all or part of the rule's requirements.

Small entities could not be exempted from these rules because, to date, all geothermal installations in North Dakota have been installed by small entities. We need to permit these facilities so we can determine if they are properly designed and ensure they do not pose an environmental risk.

SMALL ENTITY ECONOMIC IMPACT STATEMENT

NDAC 43-02-07-06

NDAC 43-02-07-15

Small entities that may be subjected to the proposed rules.

The small entities that are subject to these rules are the geothermal installers, about one dozen currently operating in North Dakota.

The administrative or other costs for small entities to comply with the proposed rules.

The administrative costs for these proposed rule changes is \$20 per residential geothermal facility permit. This cost will be passed along to the homeowner.

There would be no additional cost to a small entity for the purging of heat transfer fluids during the abandonment of a closed-loop geothermal system, unless the small entity was the owner of that system.

The probable cost and benefit to private persons and consumers who may be affected by the proposed rules.

Homeowners will ultimately pay the \$20 permit application fee because the geothermal installers will pass through the cost to the owner of the residential facility. The benefit of this small cost is that the Geological Survey will evaluate the site prior to its installation and inspect the site during installation, which will safeguard that homeowners have a well-designed and properly installed geothermal system.

Homeowners will have to pay hundreds of dollars and the owner of a large facility will have to pay thousands of dollars to purge their geothermal system upon abandonment. Society as a whole will benefit from a reduction in the potential for adverse impacts on the environment.

The probable effect of the proposed rule on state revenues.

There will be no effect on state revenues because the \$20 permit application fee will go into a continuing appropriation fund that will be used by the State to plug orphaned systems, in the event that becomes necessary. It is anticipated that the fund will receive approximately \$1,400 per year from the residential geothermal program.

Purging of the system during abandonment would generate some revenue because it would increase the installers total income.

Whether there are any less intrusive or less costly methods of achieving the proposed rule's purpose.

We could have issued residential geothermal permits without a fee, but that would not have offset the administrative and environmental responsibilities of the agency.

We determined that the best means of safeguarding the environment was to purge the heat transfer fluid from the system.

9. TAKINGS ASSESSMENT

NDAC 43-02-07-06

NDAC 43-02-07-15

Neither of these rule changes constitutes a takings.

10. *If these rules were adopted as emergency rules under NDCC Section 28-32-03, provide the statutory grounds from that section for declaring the rules to be an emergency.*

These were not adopted as emergency rules.