

ADVISORY COUNCIL ON WELLS AND BORINGS

**Minnesota Department of Health (MDH)
625 North Robert Street, St. Paul
Freeman Building, Room B149**

December 13, 2017, Meeting Minutes

Members Present

Byron Adams
Bruce Bloomgren
Chris Elvrum
David Henrich (Vice Chair)
Bruce Johnson
David Kill
Dennis Koepp
Michael Liljegren
Danny Nubbe (Chair)
Haden Shipman
Brian Stangret

Members Absent

Daniel England
Annie Felix-Gerth
Roy Forsstrom
Daniel Gibbs
Troy Kuck
Richard Lamb
Mark Thein

Others Present

Kara Dennis (MDH)
Alex Martell (MDH)
Ed Schneider (MDH)
Frieda von Qualen (MDH)
Jennifer Weier (MDH)

1. CALL TO ORDER

Danny Nubbe called the meeting to order at 10:09 a.m.

2. WELCOME NEW MEMBER AND OATH OF OFFICE

Byron Adams was welcomed to his first meeting as the representative for the Minnesota Pollution Control Agency (MPCA) on the council. He will serve as a placeholder for the next two meetings as he is retiring. There will be another representative from the MPCA named after that.

3. REVIEW AND APPROVAL OF SEPTEMBER 6, 2017, MEETING MINUTES

David Henrich made a motion to approve the minutes of the September 6, 2017, meeting minutes. The motion was seconded and the minutes were approved on a voice vote.

4. REVIEW AND APPROVAL OF DECEMBER 13, 2017, MEETING AGENDA

Ed Schneider proposed adding a discussion on the continuing education topics that the MDH Well Management Section (WMS) is planning to provide for licensed contractors in 2018. David Henrich proposed adding a discussion on graphite-bentonite grout products in bored geothermal heat exchanger (BGHE) systems. Danny Nubbe made a motion to approve the December 13, 2017, meeting agenda with the addition of discussions on 2018 continuing education and graphite-bentonite grout. The motion was seconded and approved on a voice vote.

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5. EXPENSE ACCOUNTS

Ed Schneider distributed expense report forms, and requested that members complete and return them in a timely manner. Ed's goal is to have the completed forms submitted to MDH Financial Management within 30 days.

6. ANNOUNCEMENTS

A. Retirement of Ed Schneider

This is Ed Schneider's last Advisory Council meeting. He will be retiring on January 5, 2018, after a 32-year career at MDH, during which he spent time as the WMS Northern Region supervisor, the variance and product approvals coordinator, and the Operations Unit Supervisor.

B. New Well Management Section Staff

Diane Hanson started as an office and administrative specialist, intermediate in the WMS Records and Information Unit at the beginning of November. She has several years of experience in administrative support and is starting just in time for license renewal.

Erik Widmark will start as the new well inspector for the Metro District on December 20, 2017, replacing Steve Bennett, who retired in August. Erik has worked for 17-plus years in the field of environmental drilling. Most recently he worked with Dakota Technologies, doing auger and direct push drilling for installation of piezometers, monitoring wells, and remedial wells.

7. OLD BUSINESS, UPDATES

A. Bored Geothermal Heat Exchanger (BGHE) Rule Making Update

Ed Schneider provided an update. A "Request for Comments" on the draft rules was published in the Minnesota State Register in July 2017. To date, no comments have been received. The next step in this process is completing the Statement of Need and Reasonableness (SONAR), which provides justification for the proposed rule changes. The SONAR should be completed later this week. Once the SONAR goes through an internal review, a "Notice of Intent to Adopt" will be published in the Minnesota State Register. We expect the rules to go into effect in early to mid-2018.

David Henrich asked who will be working on the rulemaking after Ed is retired. Chris Elvrum stated that Alex Martell will be taking over the technical aspects of rule revision, and Nancy La Plante will oversee the administrative aspects. David also asked that a timeline for adoption of the rules be provided. Chris said he would inform council once we send the draft rule and SONAR up to the MDH Executive Office for review.

B. Electronic Record Submittal Status

Ed Schneider reported that the electronic record submittal system, commonly referred to as eWells, is currently being tested by one volunteer contractor. e-Wells is an online application that will allow well contractors to enter well construction and sealing notifications, to pay notification fees, and to enter well construction and sealing records electronically. There have been a number of technical difficulties with implementing e-Wells. One of the most significant challenges has been trying to link the new system with the old database.

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Byron Adams asked what kind of notifications can be submitted via e-Wells. Ed Schneider responded that only water-supply well notifications will be accepted in the initial version of e-Wells. Also, contractors can use e-Wells to submit a construction or sealing record only if they used e-Wells to submit the corresponding notification.

Bruce Bloomgren said he will be asking Emily Bauer at Minnesota Geological Survey to make arrangements with Francine LaFayette to provide a demonstration of e-Wells.

C. MDH Position on Local Well Bans

Copies of a September 10, 2017, letter from MDH Assistant Commissioner Paul Allwood to Minnesota Water Well Association (MWWA) President Joseph Stephens, and an October 13, 2017, memorandum from Chris Elvrum and MDH Drinking Water Protection Section Manager Randy Ellingboe to staff were distributed to council members. Chris Elvrum summarized the well ban issue. Chris, MDH Environmental Health Division Director Tom Hogan, and Assistant Commissioner Paul Allwood met with MWWA leadership in September 2017 to discuss the well ban issue. Subsequently Chris, Tom, and Paul met with MDH legal counsel who reaffirmed that while Minnesota Statutes, chapter 103I does provide MDH with authority to regulate construction, repair, and sealing of wells and borings, the issue of well bans is not addressed in the statute and is a matter for local jurisdictions to decide. The October 13, 2017, memo to staff reminded staff that MDH and MDH staff must maintain a neutral position on well bans. While not advocating for or against well bans, MDH will continue to communicate that a properly constructed well can provide a safe and sustainable source of water.

Comments from the Council:

- Danny Nubbe expressed concern that a city that enacts a local well ban is acting as a business monopoly, forcing their citizens to buy one of their services.
- David Henrich noted that there is an ongoing legal battle over groundwater rights in southern California between the Agua Caliente Band of Cahuilla Indians and two local water agencies. The outcome of this lawsuit (which may find its way to the U.S. Supreme Court) could have national water rights implications.
- David Henrich mentioned that a citizen could claim that their riparian rights entitle them to have access to and use of groundwater.

8. NEW BUSINESS

A. Continuing Education for 2018

Ed Schneider announced that the topics for 2018 Continuing Education are as follows:

- MDH WMS Update.
- The Contractor's Role in Finding Lost Wells.
- The Importance of Complete Well Records.
- Well Disinfection.
- Environmental Wells (2017 amendments to Minnesota Statutes, chapter 103I, upcoming rulemaking).
- Special Well and Boring Construction Areas and MPCA Closed Landfill Areas of Concern.

David Henrich said contractors need to hear more about their role in educating well owners about water quality and well testing. There were no other comments recommendations for additional training.

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B. Addressing the Challenges of Finding and Sealing Lost Wells

Jennifer Weier, the WMS Metro Hydrologist Supervisor, shared a letter and a survey that are being sent to all licensed well contractors and well sealing contractors this week. The goal of the letter and survey is to assemble a meaningful referral list of licensed contractors who are willing to search for and seal lost wells. There is no requirement that a well contractor must do lost well searches, so sometimes property owners have a hard time finding a contractor that will assist them in finding a lost well. The list will include well contractors that self-identify through the survey that they are willing to do this work. We will add a disclaimer to this referral list to indicate that we are not promoting or endorsing any particular contractor. We know that there is a wide range of effort that contractors put into these searches, and not every contractor has equipment to do well searches. As part of our 2018 Continuing Education for contractors, WMS plans to clarify what is expected of a well contractors during a well search, as well as what is involved in a basic and more complex field search.

Comments from the Council:

- Haden Shipman asked how many wells go unlocated? Is this a significant problem? In what areas of the state are there shortages of contractors willing to do competent well searches? WMS staff responded that WMS has received many calls from property owners, particularly in northwest and northeast Minnesota and the metro area, who claim that they are unable to find a contractor that is willing to do a well search. WMS field staff do a hundred or more well searches every year.
- Danny Nubbe said that payment for well searches can be a problem. If a contractor does not charge for the well search, they risk losing out if they find the well and the well owner decides to hire a different, cheaper contractor to do the sealing. Danny said that he charges for well searches. The problem is that well searches can get expensive fairly quickly, especially when equipment is required. MDH could do a better job of informing the property owners that they should expect to pay for a well search. Maybe the referral list should have some suggestions or tips for the property owner, such as not relying on a verbal quote for well sealing if the contractor has not seen the well.
- Danny Nubbe also brought up a funding issue. MDH provides financial assistance for well sealing, but has not provided financial assistance for hiring contractors to do well searches. Maybe MDH should consider getting additional funds for searching for lost wells.

C. MDH Strategies for Working with Local Partners to Promote Water Testing and Water Treatment to Improve Public Health

Frieda von Qualen, Health Educator for WMS, reminded council members of the results of a 2016 survey that MDH sent out to 798 households using private wells that had high levels of arsenic in the initial water sample after well construction. The households provided information about whether they took any action to reduce their exposure to arsenic and general well stewardship practices. Survey results highlight that well contractors are a trusted information source:

- Thirty-one percent of respondents look to “well drilling companies” for information about managing the safety of their well and water quality.
- Respondents over the age of 60 years, with less than a college education, or with household incomes under \$60,000 were even more likely to look to well drilling companies for information.

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- Fifty percent of the respondents who did not take action to reduce their exposure to arsenic did not take action because they were “not concerned about the arsenic level.” One of the contributing factors to low levels of concern was that several respondents said their well driller said not to be concerned about the arsenic level or that the level would go down over time.

These survey results stress the important role that well contractors play as partners in public health. How can MDH make it easier for well contractors to provide accurate information on water quality and testing to well users? The survey results indicated that some well contractors may have provided misinformation to well users. People’s health is tied to their water quality. Do you see yourself as a public health advocate? If so, how does it impact how you do your job?

Comments from the Council:

- Danny Nubbe said that he notifies customers that they should be testing their well for arsenic when doing service work on existing wells. He emphasizes the importance of testing, especially in areas where there is elevated arsenic.
- David Henrich notifies his customers about the importance of testing by doing mass mailings. Although, he says that the main hindrance to testing is the cost. Are there some things that MDH can do to minimize the cost, such as expanding certification for accredited labs in Minnesota?
- Haden Shipman said that many people are under-informed about the health risks from long-term arsenic exposure in their drinking water. The maximum contaminant level (MCL) change was not explained well to the industry or the public. The United States Environmental Protection Agency and other government agencies need to do a better job of explaining these decisions to the industries impacted by these changes. Haden said that when it comes to water quality issues the contractor often becomes the bridge between the information and the well user. The well user may not know what their water quality results mean, and they usually go to their well contractor for information. Well contractors may not always have all of the information that they need to answer specific water quality and health effect questions. It is important to communicate the science behind the MCL to well contractors. Haden also brought up the arsenic III/V issue. It is really expensive to test for arsenic speciation. How do you inform well users about what form of arsenic to test for? Haden also suggested that MDH reach out to home builder associations in Minnesota.
- Haden Shipman asked about what the higher end of arsenic levels is in Minnesota? WMS staff responded that arsenic levels max out at 100-200 ppb, and most elevated arsenic ranges between 10-80 ppb.
- David Kill requested that WMS send council members copies of the letters and brochures that are sent to well users with arsenic detections in their new well. Frieda said she will email that information and links to other WMS resources to members.
- David Henrich suggested that WMS use Ground Water Awareness Week in March as an opportunity to partner with the National Groundwater Association to promote water quality testing.
- Frieda asked if contractor council members have encountered well owners that would need printed materials in other languages. Danny Nubbe said he has worked with a few English-speaking Russians. Other members said that they have little or no experience with nonEnglish speaking customers.

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- Frieda asked what other water quality topics or issues should WMS focus on? Danny Nubbe asked if WMS gets a lot of questions from well owners interested in chlorinating their own wells? Danny added that, as an industry, well contractors typically do not promote that home owners do their own disinfections.
- David Henrich brought up the fact that well disclosures at property transfer are not enough. Many lending institutions require well testing. Maybe MDH should push for a legislative change to require a water quality test at property transfer.
- David Henrich mentioned that there could be a co-branding opportunity for the WMS water quality materials. Let well contractors put their company info and logo on the materials, and well contractors are more likely to distribute the materials. He added that any materials the WMS wants contractors to distribute to their customers should be easy and cheap to print.

D. Environmental Well Rulemaking

Alex Martell, WMS Hydrologist and Variance Coordinator, shared the initial proposed rule changes for environmental wells. There are three major proposed changes:

- Allow the use of bentonite chips and pellets to seal shallow temporary environmental wells. There will likely be a depth limit for wells that can be sealed with bentonite chips/pellets.
- Modifying notification requirements for temporary environmental wells to accommodate unanticipated field conditions. Currently, a single sealing notification may be used for multiple temporary environmental wells that are within a depth range of 25 feet. If the contractor submits a single sealing notification and then determines during drilling/sealing that a well or wells outside of the 25-foot range is/are needed, a second notification is required. Stopping construction to submit a sealing notification may present a hardship for some contractors who do not have administrative staff and/or are working in an area where communication is not convenient. Therefore, WMS is considering some kind of accommodation that would allow the second sealing notification to be submitted after sealing.
- Incorporate industry installation practices for inclinometers and vibrating wire piezometers. This would include bentonite-Portland cement grout mixes, inclinometer casing standards, and sealing requirements.

Comments from the Council on Bentonite Chips/Pellets:

- Danny Nubbe said that chips will bridge, particularly in high moisture conditions.
- David Henrich suggested allowing contractors to pour bentonite-water grout mix if grouting with a tremie pipe is an issue.
- Danny Nubbe said that pellets would work because they absorb water slower, but pellets are very expensive.
- David Kill mentioned that there are many hand pumps that are relatively inexpensive and easy to transport that can be used to grout temporary environmental wells.
- Other comments included: granular bentonite will float; Holeplug is slow swelling, may work; Wisconsin requires screening to remove fines before pouring chips; bentonite could be mixed at the end of the day, and borings could be grouted all at once; pumps can easily be hooked up to Geoprobe, and there are many small and inexpensive pumps that can be used to grout these borings. Council members provided little support for allowing dumping of bentonite chips or pellets, but did support dumping of a bentonite-water grout mix from the ground surface for sealing shallow temporary environmental wells.

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Comments from the Council on Submitting a Second Sealing Notification After-the-Fact:

- Danny Nubbe suggested that, if this change is adopted, it should apply to all well sealing, e.g., a well contractor who submits one sealing notification for a water-supply well, then discovers a second unused-water-supply well while sealing the first, should be allowed to submit the second sealing notification after-the-fact.

Comments from the Council on Vibrating Wire Piezometers and Inclinometers:

- David Henrich noted that the custom grout mixes are needed for some of these instruments to function properly. He said that if the conductivity of these mixes is sufficiently low to prevent vertical migration of contaminants, the mixes should be allowed.
- Danny Nubbe and Haden Shipman asked how many variance applications have been received by WMS for alternative grouts used with vibrating wire piezometers and inclinometers. Alex Martell said there have only been a few, but he suspects that many more are being installed without approval from MDH.
- Council members were in general agreement that the bentonite-neat-cement grout mixes should only be used in unconsolidated materials, not bedrock.

Chris Elvrum asked the council about one other proposed rule change: requiring full-depth grouting on all wells. David Henrich said that blowing the head off well to induce collapse around screen often results in formation collapse up to the water table, which would prevent full-depth grouting. Danny Nubbe said there should be a minimum bore hole size requirement if full-depth grouting required, to assure that there is room to insert tremie pipe to bottom of casing.

9. OTHER BUSINESS

A. Graphite-Bentonite Thermally Enhanced Grout

David Henrich brought up the topic of using graphite-bentonite grout in BGHE systems. He pointed out that the grouts provide very high thermal conductivity, but are very expensive compared to conventional sand-bentonite thermally enhanced grouts. Alex Martell indicated that there are currently three graphite-based grouts that are approved for use in BGHE systems: PowerTEC and PowerTECx, manufactured by GeoPro, Inc.; and Thermal Grout K, manufactured by Black Hills Bentonite, LLC. Ed Schneider indicated that graphite is a relatively inert naturally occurring carbon mineral and should not pose a risk to groundwater or health.

10. ADJOURN

Chris Elvrum made a motion to adjourn, which was seconded and the meeting was adjourned at 2:20 p.m.