State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

Mail Code 401-03
Division of Water Supply - Water Supply Permitting Element
Bureau of Water Systems and Well Permitting
401 E. State Street - P.O. Box 420
Trenton, New Jersey 08625-0420
Tel #: (609) 984-6831 - Fax #: (609) 633-1231
STATE WELL DRILLERS AND PUMP INSTALLERS
EXAMINING AND ADVISORY BOARD

BOB MARTIN
Commissioner

State Well Drillers and Pump Installers Examining and Advisory Board Meeting Minutes for January 20, 2011

Board Members Present: Anthony Tirro (Vice-Chairman), Richard Dalton, Gary Poppe, Joe Pepe, Karl Muessig, and Carol Graff, Fred Sickels (partial pm)

Board Members Absent: Art Becker (Chairman), Joe Yost

Others Present: Jill Denyes (DAG)

NJDEP Staff Present:
Water Supply Staff - Pat Bono, Tracy Omrod, Steve Reya, Julia Altieri (morning only), John Olko (Enforcement), Michael Schumacher (some of morning, all of afternoon), and Katie Wessling
Other DEP Staff - Charles Maack (Licensing Unit), Andrea Friedman (Office of Climate and Energy), Helen Rancan (NJGS), Dave Pasicznyk (NJGS)

Member(s) of the Public: Ray Smith, licensed well driller (EPI), Len Krimsky (GEM)

1. **Call to Order -** The meeting was called to order by A. Tirro at 9:42 AM with a quorum present.

2. **Review of draft Minutes from November 18, 2010 Meeting** – A motion to approve the minutes without change was made by G. Poppe, seconded by C. Graff and approved unanimously.

3. **Certification of Scores for December 9, 2010 Master, Journeyman B, Monitoring, Soil Borer and Pump Installers Exams–**

   Master – A motion to approve the exam scores was made by C. Graff, seconded by R. Dalton and approved unanimously.
   Journeyman B – A motion to approve the exam scores was made by G. Poppe, seconded by C. Graff and approved unanimously.
   Monitoring – A motion to approve the exam scores was made by G. Poppe, seconded by C. Graff and approved unanimously.
   Soil Borer – A motion to approve the exam scores was made by G. Poppe, seconded by K. Muessig and approved unanimously.

Pump Installer – A motion to approve the exam scores was made by J. Pepe, seconded by R. Dalton and approved unanimously.

4. Licensing Topics

Pump Installer Survey – The Board members presented a post-exam survey to be given to test candidates after taking the pump installer exam. An informal subcommittee consisting of A. Becker, J. Pepe and G. Poppe drafted the survey since the November Board meeting. The purpose of the survey is to determine the reasons the passing rate of the Pump Installer Exam is so low and to develop a strategy to improve the scores and better assist test applicants. J. Pepe explained the emphasis placed on discerning the quality of on-the-job training as well as studying for the exam. G. Poppe noted that part of the high failure rate may be because applicants are taking the exam before they are truly qualified, and suggested that the Bureau reconsider the 1-year minimum experience requirement when revising the well drilling regulations. Both he and J. Pepe also noted that the exam questions do not test applicants on variable frequency drive (VFD) pumping systems, which are becoming increasingly more common within the industry. They felt that including questions on VFD pump systems, which can be complicated, might result in an even higher failure rate. They postulated that the industry tendency to replace pump system parts without first trouble shooting to determine the actual problem may be resulting in trainees never learning the basics of pump systems.

It is envisioned that the proposed survey would be handed out to applicants at the same time the tests are given. J. Pepe suggested that the survey should include a small introduction that describes the purpose of the survey, while making it clear that the answers to the survey do not affect the scoring of the exam. P. Bono noted that she believed the wording of some of the questions and corresponding answer choices were vague. She proposed making some revisions to the subcommittee's draft and providing her suggested revisions to the Board.

Enforcement Activity – John Olko, formerly from the Department's Water Compliance and Enforcement Element, announced that he has recently moved to the Underground Storage Enforcement Element. He has briefed the new Administrator of the Water Compliance and Enforcement Program, Marcedius Jameson, on the enforcement coordination process previously established with the Bureau of Water Systems and Well Permitting regarding well violations. He also updated Mr. Jameson on all pending enforcement documents currently in process. He added that revisions to the program now require the Well Permitting Section to deal with the appropriate enforcement region (North, Central or South) when sending enforcement documents. The region in which a violation occurs will now issue the enforcement documentation.

P. Bono noted that frequent violators must be tracked by the Well Permitting Section, due to the decentralization of the Enforcement Program. She stressed that if a violator has multiple violations spread across different regions, the individuals' violation history must reflect that. J. Olko also mentioned that the Bureau of Water Systems and Well Permitting Staff may initially have to assist the enforcement staff from all three regions because the Enforcement field staff may not know what they are looking at regarding well drilling violations. C. Graff also suggested conducting orientations, meetings or trainings with Bureau Chiefs within the Enforcement Program to disseminate enforcement issues within the well drilling and pump installation community so Enforcement staff will be better able to identify and resolve problems.

Hearing Process – J. Denyes discussed the process of suspending or revoking a driller/pump installer license with Board recommendation. She has looked into past procedures and activities and found that past recommendations by the Board languished because there was no prior coordination with the DEP Commissioner's office. It is important for the Commissioner's office to provide input to the Board on

procedures so that the Commissioner can take action on recommendations to suspend a license. DAG Helene Chudzik has advised that, since the resources of the Board are limited, that their hearings be informal in nature. If a driller disputes the outcome of the Board's recommendations, he/she will have the right to appeal to Office of Administrative Law (OAL) for a full administrative hearing. J. Denyes suggested that someone from the DEP staff contact the Commissioner's Office to discuss the procedure and interaction between the Board and the Commissioner's office. Finally, she added that she plans to talk to F. Sickels to discuss as to who would be the appropriate contact in the Commissioner's office. Board members also discussed the potential of increasing the Board's enforcement authority upon revising the well drilling regulations. K. Muessig suggested looking into the possibility of tying the well regulations into the procedures provided in the Uniform Enforcement Act.

5. **Relevant Department Activities on Geothermal Topics –**
Office of Climate and Energy- Andrea Friedman, from the DEP's Office of Climate and Energy Program, explained that he program plans and develops policies to reduce greenhouse emissions within the state and to encourage the use of various energy saving technologies. Specifically, she noted that their program is supportive of geothermal wells because they reduce usage of fossil fuels. She noted, however, that they are concerned with DX geothermal systems, many of which use refrigerants as a heat transfer medium. She stated that these refrigerants could be a threat to groundwater resources and are highly potent greenhouse gasses (tens of thousands of times more potent than Carbon Dioxide). The Office of Climate and Energy will be willing to assist with review of the refrigerant materials if the rule regulations that are to be proposed for revision are to incorporate DX systems.

New Jersey Geologic Survey (NJGS)-
David Pasicznyk and Helen Rancan, from NJGS, provided an update on a geothermal well data study they have been conducting as a result of a grant from the US Department of Energy. To date, the geothermal industry has been progressing without any oversight from federal or state agencies and this study will provide basic national data for all 50 states. Once the information has been gathered, US DOE will identify the regulatory needs for this field. According to NJ DEP's database, approximately 5,800 permits have been issued for geothermal wells for open loop and closed loop systems combined.

They hope geothermal applications will ultimately become more accessible and hope to provide more information to both homeowners and the geothermal industry. To facilitate this, NJGS envisions developing a website that provides geologic information by region to give a rough estimate of the thermal values to expect in an area, the number of wells/footage required for a given capacity of a geothermal system. They indicated that they hope to promote the industry and increase the number of geothermal-related jobs in New Jersey in the future.

NJGS hopes to receive a second grant to provide for the drilling of three deep wells (approximately 1200 ft.) in New Jersey to enable the collection of detailed thermal information. This will allow NJGS to evaluate how future systems could be made more efficient through design changes or potentially even regulatory changes. G. Poppe suggested that they speak with the Board of Public Utilities (BPU), as they were highly instrumental in promoting this technology year ago by offering incentives and tax credits to those seeking to install such systems. K. Muessig said that the drilling costs associated with the projects are the most expensive cost associated with geothermal systems. He felt the most feasible way to make the systems more affordable would be to cut down on the drilling costs. He noted costs to install DX systems are less expensive to drill and that there may be certain geologic regions of the state, such as the bedrock regions of Northern New Jersey, may be more conducive to their use as they do not typically have low pH groundwater. K. Muessig did

acknowledge however, when questioned by P. Bono, that the NJGS assessment was not comprehensive and factors such as decommissioning had not been evaluated.

6. **DEP Correspondence** – P. Bono discussed A. Becker's December 21, 2010 letter to DEP Commissioner, Bob Martin, which thanked the Department for their changes, especially for taking proactive steps to support Department staff in their efforts to enforce the well drilling regulations and the issuance of enforcement documents to those who violate these regulations. A. Becker's letter also stressed the importance of revising the well drilling regulations and noted that the Board would be willing to assist the Department in any way necessary.

7. **Technical Topics -**

Agreenability Closed Loop Geothermal System - awaiting submission for additional data from R. Jensen. No discussion

Hardin Geothermal Pipe (4.5) After consultation with Board members, the Bureau approved the use of the well casing and center grout tube, provided the center contained .5" holes (one per side) every foot for the entire length of the "loop." S. Reya presented observations made by Bureau staff witnessing the installation of the Hardin Geothermal Pipe (4.5) at a veterinary hospital in Robbinsville, New Jersey. S. Reya and B. Buttari inspected the activity on three different occasions. S. Reya noted that there were some problems installing the pipe in the boreholes in the beginning and that some of the boreholes were not staying open to a sufficient diameter to allow insertion of the pipe to the total drilled depth. All the boreholes at the site were to be drilled to an approximate depth of 400 ft. Once the pipe was installed, there were no problems with pumping the 400-lb sand/50-lb bentonite geothermal grout could be pumped through a tremie inserted in the center pipe of the casing and through the grout ports. S. Reya, B. Buttari and A, Becker all witnessed the functioning of grouting process, displacement of drilling mud from the annulus. S. Reya added that the grout volumes being pumped into the boreholes were in excess of the theoretical volume required to fill the annular space. The values reported by the engineer for this site confirmed similar grout volumes. The presentation included photos taken S. Reya and A Becker and videos forwarded by A. Becker. It was confirmed that the design of the pipe did allow for proper grouting of the casing within the borehole provided the casing and tremie pipe could be installed to the total drilled depth and that a competent borehole is maintained, which is the case with any geothermal well installation. The photos also illustrated the fusing process, which S. Reya seemed to be effective based on the strength of the fused lengths of the pipe witnessed onsite. Hugh Streep of NextGen reported to the Bureau that all wells were passing the pressure tests performed after the wells are grouted. In order for the pipe to be used in bedrock formations, the design will need to use cementitious thermally-enhanced grout (Mix-111). To date this request has not been submitted to the Bureau.

8. **DEP Program Updates –**

Well Searches - P. Bono said that the Bureau has been working to data manage historic well information and also to improve on well document search tools. M Schumacher has been working with staff from DEP's Site Remediation Program to come up with a better search tool to benefit well data users outside the Department. They hope to have a version of the well search that will allow users (well drillers/pump installers, property owners, etc.) to obtain PDF files of well permits and well records. P. Bono noted that the Bureau is still determining whether all of this information is considered to viewable such that the info could be made available through a web-based search. If not, the confidential information must be determined so that a report can be written to redact release of sensitive information. The decision will be made at the Commissioner's level. P. Bono hopes to have this report available soon, since the Bureau is currently providing this information to requestors at the expense of significant staff resources.

Regulation Revisions- P. Bono, A. Becker and Katie Wessling, who will be assisting P. Bono with the revisions to the regulations, met for several hours a couple of weeks prior, to discuss the regulation revision process. P. Bono stated that the proposed regulations must be filed prior to the expiration of the current regulations (March 3, 2012). After proposal, the Department has one year to adopt the regulations. If the regulations are not adopted within this timeframe, the proposal expires. She hopes to solicit industry input through the Bureau's website and through a series of stakeholder meetings. By soliciting input early in the revision writing process, she foresees less resistance as the regulations approach the proposal and adoption stages.

9. **Adjournment -** A motion to adjourn the meeting was made by J. Peppe, seconded by G. Poppe and unanimously approved at 2:40 pm.