



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

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STATE WELL DRILLERS AND PUMP INSTALLERS
EXAMINING AND ADVISORY BOARD

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New Jersey Department of Environmental Protection Well Drillers and Pump Installers Examining and Advisory Board Meeting Minutes for May 24, 2012

Board Members Present: Art Becker (Chairman), Gary Poppe (Vice Chairman), Joseph Yost, Richard Dalton, Joseph Pepe, Gordon Craig, Steve Doughty, Carol Graff and Dr. Karl Muessig

Board Members Absent: None

Board Legal Advisor Present: Jill Denyes, DAG, & Tirza Wahrman, DAG

NJDEP Bureau of Water Allocation & Well Permitting Staff Present: Terry Pilawski, Pat Bono, Steve Reya, Julia Altieri, Mike Schumacher, Brian Buttari, Melia Stoop

Member(s) of the Public: Robert Jensen of Agreenability.

1. Call to Order –

Chairman Art Becker called the meeting to order at 9:30 am with a quorum present. He then welcomed Mr. Gordon Craig, President of Craig Test Boring and Geothermal Services Inc., to the Board. Mr. Craig was appointed via Administrative Order Number 2012-07, which was signed by Department of Environmental Protection Commissioner Bob Martin on May 17, 2012. A. Becker stated that Mr. Craig has been a leader in the drilling industry for a very long time and is an excellent addition to the Board. He added that his experience in the geotechnical and geothermal aspects of the industry will be invaluable to the Department and Board.

2. Review of the Minutes from the January 26, 2012 Meeting –

These minutes could not be approved at the Board's March 15, 2012 due to the lack of Board quorum. Several typographical errors were noted in these minutes:

- Page 2, Item 4: The first sentence should be corrected to read "Mr. Richard Gardner, who is the production manager for A.C. Schultes, Inc., had submitted a letter on behalf of Mr. Thorson expressing his opinion that the test answer as graded by the Department is not correct."
- Page 4, Item 9: In the Update on the Agreenability pilot geothermal project section, "interested" should be replaced with "interest". In the Update on the approval of three Baroid Geothermal grout mixes section "on eof" should be replaced with "one of". Also the third sentence should contain "a" before "second sample".

- Page 5, Item 10: In the second paragraph, the word “disinfection” should be replaced with “disinfect”.

Review of the Executive Session Minutes from the January 26, 2012 Meeting-

A motion to accept the January 26th, 2012 meeting minutes without change and the January Executive Minutes with the above noted changes was made by G. Poppe and seconded by J. Yost. All members were in favor of the motion with the exceptions of S. Doughty, G. Craig, C. Graff and Karl Muessig who abstained.

- 3. Review of Minutes from the March 15th, 2012 Meeting** – One typographical error was noted: the last word under Item one should be “meetings” not “meeting”. A motion to accept the minutes with this change was made by K. Muessig and seconded by S. Doughty. All members voted in favor of the motion with the exceptions of G. Poppe and G. Craig, who abstained as they were not present at the meeting.
- 4. Review of Minutes from the May 2, 2012 Conference Call Minutes-**
A motion to approve the minutes without change was made by G. Poppe and seconded by C. Graff. All members voted in favor of the motion with the exception of K. Muessig, who abstained as he did not participate in the conference call.
- 5. Review and Certification of Exam Applicants for the June 13th, 2012 Master, Journeyman, Journeyman B, Monitoring, Soil Borer and Pump Installers Exams -**

Master – A motion to approve all listed applicants for the exam was made by G. Poppe, seconded by A. Becker and approved unanimously.

Journeyman - A motion to approve all listed applicants for the exam was made by J. Yost, seconded by Gary Poppe and approved unanimously.

Journeyman B – A motion to approve all listed applicants for the exam was made by K. Muessig, seconded by C. Graff and approved unanimously.

Monitoring – A motion to approve all listed applicants for the exam was made by S. Doughty, seconded by K. Muessig and approved unanimously.

Soil Borer – A motion to approve all listed exam applicants was made by G. Poppe, seconded by R. Dalton and approved unanimously.

Pump Installer – A motion to approve all listed exam applicants was made by G. Poppe, seconded by J. Pepe and approved unanimously.

- 6. Pump Installer Exam Survey Results-** Board members reviewed the results of the Pump Installer Exam Surveys that were completed by applicants who took the April 4, 2012 exam. Members again discussed the notion of requiring two years of experience as a prerequisite to sit for the exam, as the consensus of the Board members is that one year of field experience simply is not long enough to learn all aspects of the pump installation/maintenance field. A. Becker expressed his belief that continuing education is important and that many employees in the industry simply replace inoperable parts, but are not truly educated in troubleshooting the actual problem(s). J. Pepe expressed his concerns that often employers and business owners are not properly training their successors on technical material or sound business practices.

It is hoped that the move to use the National Ground Water Association (NGWA) pump exams will remedy the failure problem to some extent. The NGWA offers two separate pump tests: one for pumps over 100 gallons per minute and one under 100 gallons per minute. The current NJ license exam does

not allow applicants to choose a specialty exam type based upon the types of pumps on which they most often work and this may be a contributing factor to the poor passing rates. Board members requested that S. Reya question applicants when they come in for exam reviews and obtain additional information pertaining to the applicant's day to day experience in the field. The Bureau will also continue to include the survey in all Pump Installer exams that are administered and report back to the Board.

7. NJDEP Enforcement Activities Update-

J. Altieri provided a compliance and enforcement update on what has occurred since the Board's last meeting. She reported that Bureau has been working with NJDEP's Northern Water Compliance & Enforcement Office and, as a result, a final resolution was reached regarding the decommissioning of an improperly constructed well in Warren County ordered sealed in 2005. G. Poppe expressed his frustrations that the resolving enforcement problems take years and drillers who violate the regulations are able to continue to obtain new drilling permits and to renew their drilling licenses.

Terry Pilawski expressed her belief that rule revisions will strengthen the Department's enforcement authority and allow for stricter penalties for those who repeatedly violate NJDEP well regulations. She also noted that the Bureau has recently hired additional staff, which should free up some staff resources for field work and investigations. K. Muessig and P. Bono also discussed adding permit "conditions" to electronic permits upon issuance that would require the drilling contractor to notify the Department prior to the start of drilling activities. This would allow the Department to inspect well installations on a periodic basis and concentrate on observing known violators.

J. Altieri indicated that the Bureau is making progress in several outstanding cases and that state attorneys have been appointed for several enforcement cases. Bureau staff members are working to prepare for a hearing or settlement in those situations. T. Pilawski reiterated that she is pushing to increase field presence to encourage compliance with the regulations and level the playing field so that all drilling contractors are forced to meet the same standards.

K. Muessig and C. Graff requested that the Department start to post up-to-date information on the website so that well drilling/pump installation violations are visible to the public. Such activities could act as a serious deterrent to all licensed individuals.

8. Agreeability Geothermal System Request for Approval- Mr. Robert Jensen, President of Agreeability, described the results of a recent test pilot installation recently conducted with his closed loop geothermal piping. The installation was performed at a private residence in Chester, NJ and consisted of four (4) holes that were drilled to a depth of 288 ft. The Agreeability system consists of a set of four (4) geothermal "loops" that are arranged around a larger diameter center pipe, through which a tremie pipe can be inserted for the purpose of grouting the geothermal twisted pipe bundle (2TPB) within a borehole. The center pipe is perforated with 1/4-inch holes to facilitate the flow of grout material into the annular space around and between the nine (9) pipes within the borehole. The closed loop geothermal piping system was re-designed to address concerns raised by the Board at their September 16, 2010 meeting. At that time, Board members expressed concerns about the ability to establish of an adequate grout seal within and around the annular spaces created by the nine (9) separate pipes within the borehole.

As a result of these comments, the pipe system was re-designed and an approval was granted for a test installation consisting of four (4) wells, which were drilled in a consolidated formation in Chester Township in April 2012. The conclusions of this test are summarized in Mr. Jensen's letter and documented in his report "Documentation of the installation of 4.5" Twisted Pipe in Chester NJ" (dated April 20, 2012). This report indicates that "each well took at least the calculated quantity of grout required to fill the well. These results give no indication of any incomplete grouting having taken place.

The process of grouting the well using the perforated center pipe of the 2TPB product did not cause any complications to the grouting process.” Mr. Jensen noted that the drilling contractor, Colaluce Well Drilling pumped several batches of grout through the center pipe and allowed it to set up for the purpose of “anchoring” the pipe bundle. On the following day the contractor returned and pumped grout through the center pipe until return was observed at the surface. Mr. Jensen indicated that the grouting operation proceeded smoothly and effectively grouted the entire borehole. S. Reya also conducted an inspection of the well installations. He reported that the design allows for adequate grouting of the entire borehole in a manner that is consistent with other closed loop geothermal wells and did not observe any problems with grouting operation during any of his site inspections.

Mr. Jensen reiterated that the high density polyethylene (HDPE) piping material, circulating fluids and grout mixes used in Agreenability’s system meet the specifications set forth at N.J.A.C. 7:9D-2.5. Bureau staff have reviewed his information and concur that it meets the criteria set by regulation. Mr. Jensen requested to have his system approved for state-wide use. In addition, a schematic labeled “TP-001” that details the full specifications of your 2TPB geothermal well design was provided by Mr. Jensen.

Art Becker made a motion consisting of two parts: 1) to recommend approval of Agreenability’s 2TPB closed loop geothermal piping bundle to the Department, as it has been demonstrated to meet all applicable provisions of N.J.A.C. 7:9D with regard to construction materials. It has also been demonstrated, via a pilot program, the product allows for sufficient grout placement within the borehole. He noted that all concerns regarding the grouting of the preliminary version of the product have been addressed and resolved in the current version. 2) The “center pipe” portion within the bundle may be replaced with a different material provided the overall configuration of the bundle remains unchanged and the center pipe is not used to circulate fluid. Any changes other than the center pipe would necessitate submitting the re-designed product to the Board for review. The motion was seconded by G. Craig and approved unanimously.

9. **Nebraska Grout Task Force Webinar Update-** A. Becker informed the Board members that a free webinar is being put on by Penn State featuring the Nebraska Grout Task Force results. This study demonstrates the results of a multi-year test that is being conducted by the Nebraska Department of Health and Human Services in conjunction with several bentonite manufacturers. Speaker Tom Christopherson, program manager for the Water Well Standards and Contractors Licensing Program from the Nebraska Department of Health & Human Services, will discuss pros and cons of many types of grout mixtures and detail how geology and water content of native soils affects the quality of the grout seal. Some of the study results disprove certain assumptions about how grout material behaves in the annulus.
10. **Grout Material Update-** S. Reya noted that the Bureau had recently sent a letter to Baroid Industrial Drilling products, which formally approved three (3) of their products, as recommended by the Board. Baroid’s Barotherm Gold (containing up to 400 lbs. of silica sand to 50 lbs. of bentonite), Barotherm Gold 1.2 (a pre-blended version of Barotherm Gold) and Barotherm Max were all included in this approval.
11. **NJDEP- Division of Water Supply Website Redesign-** P. Bono discussed the newly revised Division website, which is intended to be more user friendly. A. Becker reported that he has found it to be more intuitive and feels that Board and testing information is easier to find. Board members provided input to Bureau staff as to information they would most like to see posted on the site.
12. **Licensing Topics-** S. Reya informed the Board that the next step in the proposed National Ground Water Association (NGWA) licensing program is for NJDEP to review the current technical portions of all classes of driller and pump installer exams. Both S. Reya and P. Bono will shortly be receiving

copies of NGWA exams (after signing confidentiality exams), and will review them to ensure that all appropriate topics are covered. This will enable the Bureau and Board members to work together to develop New Jersey regulatory exam modules, which will contain any relevant questions not covered on NGWA's existing technical exams. The exams will also be reviewed to determine whether any questions will directly conflict with NJ regulations. G. Poppe, J. Pepe, J. Yost and G. Craig made offers to assist with the exam writing process. S. Reya will reach out to these members after the NGWA exams have been reviewed. They are also waiting on the current regulation draft, so questions can be developed based on the "new" regulations, rather than the existing regulations. Otherwise test questions would have to be re-written in a year or so.

13. Discussion of HVACR Letter from Gary Poppe- G. Poppe discussed a letter he recently wrote, on behalf of the New Jersey Ground Water Association (NJGWA) to the newly established Heating Ventilation Air Conditioning and Refrigeration (HVACR) Board, which raised concerns over the proposed new HVACR regulations. Specifically, he noted that the HVACR rule proposal essentially prohibited well drillers from working on the lateral lines of geothermal well systems. A listing of licensed professionals who are exempt from obtaining a HVACR license is listed in the rule proposal, but well drillers are not listed in this provision. Additionally, he noted that "the definition of 'Heating, ventilating, air conditioning and refrigeration' or 'HVACR' as it appears under 13:32A-1.2 (Definitions). While this definition correctly indicates that drilling of the well for a geo-thermal system is not within the HVACR definition it fails to include those functions of the well driller to connect the well to the geo-thermal equipment. A. Becker and G. Poppe requested that NJDEP support this effort and notify the Department of Community Affairs and the HVACR Board that the proposed rule infringes on activities that have been regulated by NJDEP's statutes and well drilling regulations. A. Becker will send a letter to Division Director, Fred Sickels, summarizing these concerns and requesting NJDEP support.

14. Regulation Update-

Terry Pilawski stated that the draft Well Driller rule proposal (NJAC 7:9D) is about 98% complete, and that she expects the relatively few outstanding issues to be resolved shortly. Once the draft is complete, the Division of Water Supply & Geoscience will forward the proposal to both Janis Hoagland (DEP's Office of Legal Affairs) and Deputy Attorney General Mike Schuitt for their review and mark-up. Following their review, staff will make all necessary revisions in preparation for submittal to the Office of Administrative Law (OAL) for publication of the proposal in the New Jersey Register (Register). Once published, there will be a comment period, expected to be 60 days, and at least one public hearing. After close of the comment period, staff will prepare responses to comments and determine whether any modifications are warranted to the rule language as proposed. At that point, work on the adoption document will commence and a time frame can be established for rule adoption. State agencies must adopt proposed revisions within one (1) year of publication of the proposal in the NJ Register.

15. Letter to Licensed Site Remediation Professional (LSRP) Board-

A. Becker and C. Graff talked about a proposed letter to the LSRP board regarding the need for LSRPs to verify and record license numbers of well drillers employed for investigative or remedial work that required the drilling of soil borings and/or monitor wells. They will also note in the letter that one driller is required for each drilling rig onsite. By requiring LSRPs to perform these checks, NJDEP can effectively increase compliance with the drilling regulations, without necessitating any additional staff. A. Becker will draft this letter shortly.

16. Adjournment- A motion to adjourn the meeting was made at 2:00 pm G. Craig, seconded by C. Graff and approved unanimously.