



Damon T. Arnold, M.D., M.P.H., Director

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**Motion: To Reelect George Gaffke as the License Board Chair**

**Made By: John Pitz**

**Seconded By: Larry Lyons**

**Motion carried by a unanimous voice vote.**

**Vice Chairman**

The Board elected to not have a vice Chairman during 2009 through 2010, as required under the Bylaws, Part 3.

**Motion: To not have a vice chairman during 2009 through 2010**

**Made By: John Pitz**

**Seconded By: Greg Wilburn**

**Motion carried by a unanimous voice vote.**

**Clarification of Sealing Dry Hole Requirements under the Illinois Water Well Construction Code (IWWCC), Section 920.120 c)**

According to the Board, at least one local health department does not allow dry holes to be sealed with clay. Referencing the IWWCC definitions for “Aquifer” and “water bearing formation,” and Section 920.120 c), when a well is drilled into a water bearing formation, not capable of producing sufficient water to supply a domestic water supply, such well is considered a “non-producing well.” Dry holes or “dusters” are considered non-producing wells. Under Section 920.120 c), non-producing wells can be sealed with clay, even though they may be classified as aquifers in other locations. George Gaffke plans to submit a letter of clarification to the Department on this issue.

The Department will submit written correspondence, addressed to the Administrators and Directors of Environmental Health, describing the Board’s clarification. According to David Dingledine, a number of local health departments have been delaying water well contractors from performing their work in sealing abandoned wells, in order for them to conduct their inspections. Whenever this occurs, Jerry Dalsin recommended that the licensed water well contractor inform the Department, and the Department in turn will inform the local health department that the contractor cannot be held up from performing work to accommodate the inspection schedule of the local health department.

**Motion: For the Board to submit a letter of clarification to the Department, regarding the Illinois Water Well Construction Code, Section 920.120 c) Non-producing well**

**Made By: David Dingledine**

**Seconded By: Larry Lyons**

**Motion carried by a unanimous voice vote.**

### **Contractor Continuing Education Sessions for 2009**

The Board reviewed and approved four continuing education sessions for licensed water well and pump installation contractors, sponsored by the Illinois Association of Groundwater Professionals, and to be given during February 11, March 11, 12, and April 25, 2009. In addition, they approved the March 24, 2009 training session, sponsored by the Independent Water Well Contractors (IWWC), commenting that they did not provide notification of the training session to all licensed water well and pump installation contractors. The Department subsequently submitted a written notice on January 26, 2009, informing IWWC to provide this notification.

**Motion: To approve four continuing education sessions for 2009, sponsored the Illinois Association of Groundwater Professions, and one sponsored by the Independent Water Well Contractors**

**Made By: Greg Wilburn**

**Seconded By: John Pitz**

**Motion carried by a unanimous voice vote.**

### **Review of April 3, 2009 and October 16, 2009 Contractor License Examinations, and New Questions for the Master Examination Lists (Closed Session)**

The Board went into a closed session to review the examinations to be held during October 16, 2009 and April 3, 2009. Visitors were asked to leave for this part of the meeting – as they were reminded by the Board, public participation is only allowed during the Board meetings regularly scheduled during April and October. Included in the review were the Master Examination Lists for each of the four types of Contractors License examinations, adding new questions, deleting a small number, and clarifying others.

### **Updates from the Department**

Jerry Dalsin provided draft handouts to the Board, regarding lists of approved pitless adapters/units and backflow preventers, and a summary of monitoring well requirements. The IWGCC, Section 920.40 f), and the Illinois Water Well Pump Installation Code (IWWPIC), Section 925.40 c), require the Department to periodically update the pitless adapter/pitless unit list; the IWWPIC, 925.40 i), requires the Department to establish and maintain a list of approved backflow devices. The Board was asked to review and comment, if necessary, on the updates.

### **Water Well and Pump Installation Contractors License Board Bylaws**

The Board discussed the Water Well and Pump Installation Contractors License Board Bylaws, and in particular Part 8. Under Part 8, the starting time for regular meetings should be 4:00 p.m. rather than 3:00 p.m., to be in agreement with Part 6. They also discussed eliminating public participation under Parts 8 and 10, since they are an advisory Board rather than a regulatory one. Public comments should be directed to the Department; the Board can advise the Department on providing responses to the comments.

### **Preparation for Continuing of Board meeting on January 23, 2009**

The Board discussed the requirements for constructing closed loop wells, IWGCC Section 920.180 and 920.90 h), especially as they relate to grouting, and for those situations where the casing through the overburden is left in place. The discussion started with a description of the Atlas Copco method of drilling ahead with an oversized borehole, having an annular space of  $\frac{3}{16}$  inches and larger; the casing is pulled while the drilling progresses. With this

method, the casing is not driven. An interpretation is needed when the casing is left in place by this method.

When the casing is left in place, the annular space between the casing and borehole shall be grouted from the bottom to the top of the casing with bentonite grout or neat cement grout. If a tremie pipe is used to place the grout, the annular space shall be large enough to accommodate it, the borehole a minimum of 3 inches greater than outside diameter of the casing. If it is grouted through the inside of the casing, the borehole shall be 2 inches greater than the outside diameter of the casing. The alternative is to pull the casing and grout the borehole. The inside of the borehole may be grouted with geothermal grout, a mixture of bentonite grout and sand, following manufacture's directions. Geothermal grout is not allowed to seal the annular space between the casing and the borehole. According to a Nebraska study, geothermal grout can break down or separate in dry creviced formations, also contributing to inefficient heat transfer. To keep the grout in place, and enhance heat transfer, it is important that the grout remain hydrated.

### **Other Business**

Water Well and Pump Installation Contractors License Board Bylaws – As part of the agenda for the April 2, 2009 the Board made plans to discuss and make updates to of the Water Well and Pump Installation Contractors License Board Bylaws, and in particular Part 8, Order of Business, Public Participation and the time to start regular meetings.

### **Adjournment**

The meeting adjourned at 4:30 p.m.

### **January 23, 2009 - Continuation of the Meeting**

Chairman George Gaffke opened the second day of the meeting at 8:00 a.m. and welcomed the seven visitors. The visitor's names, phone numbers and e-mail addresses were recorded on a separate sheet. Board members present: David Dingledine, George Gaffke, Michael Gross, Larry Lyons, John Pitz, and Greg Wilburn. Department personnel: Ken Runkle and Jerry Dalsin.

### **What the Code Addresses, Regarding the Construction and Grouting of Geothermal Wells**

**History of closed loop well requirements** – John Pitz provided a history of the Illinois Water Well Construction Code requirements, regarding closed loop wells (CLWs). Since CLWs do not fit into the definition of a water well, they are not permitted. As the number of closed loop well systems being constructed was substantially increasing, the IWWCC was amended during the early 1990s to incorporate requirements for both horizontal and vertical CLWs. One driving force for their development was the penetration of aquifers by CLW systems. There are requirements for both horizontal and vertical CLWs.

**Grouting** – The Board discussed and clarified the IWWCC, Sections 920.180 c), and 920.92 h), as they relate to the grouting of CLWs. The annular space left open is a migration issue and shall be sealed to protect the groundwater. The WWCC only allows the use of bentonite grout and neat cement grout, with a minimum of 20% solids; the use of drill cuttings is not allowed. The inside of a CLW shall be pressure grouted from the bottom to the top, usually by means of a tremie pipe.

The use of enhanced Geothermal grout was not anticipated when the IWWCC was amended to include requirements for CLWs. It may be used, provided a variance has been applied for and approved. In all cases, the upper 20 feet of the borehole shall be sealed with bentonite grout or neat cement grout. When applying for a variance, geology and depth of the CLWs are important factors to consider.

Under certain conditions, a fill material such as sand, pea gravel, could be used in lieu of grout, in a fashion similar to sealing an abandoned well. In such applications aquifers would have to be isolated, by grouting the borehole with neat cement or bentonite, ten feet above and below all aquifer contacts – a variance would be required. If the geologic formations are not known, then the borehole shall be grouted from the bottom to the top.

**Casing** – When a geothermal well is constructed with the casing left in place, both the annular space between the casing and borehole, and inside of the casing shall be pressure grouted. Only bentonite grout and neat cement grout are allowed to seal the annular space. An oversized borehole is necessary to accommodate the grouting. There is no need for pipe specifications, since the casing is left in place and grouted on both sides.

**Future Directions** – Presently, a water well drillers licensed could be jeopardized over the improper construction of closed loop well(s). If the installer is not a licensed water well contractor, then legal action can be taken through the States Attorney. Establishing regulations to register closed loop well contractors and permit closed loop well systems would identify closed loop well installers and closed loop well installations.

As a fee to be considered, a CLW system permit fee could be \$100 per 10 wells for larger systems. The minimum permit could also be set at \$100. For a commercial installation of 100 CLWs, the permit fee would be \$1000. The fee of the permit would include inspection of the system. Contractors should know of their responsibility to check on state and local requirements.

Some local health departments already permit or register and inspect CLW systems, and register closed loop well contractors. Through their ordinances they can add requirements to fill in gaps. However, they cannot be in disagreement with the IWWCC.

#### **Next Board Meeting**

George Gaffke scheduled the next Board meeting for April 2, 2009, to be held at the Ramada Limited North in Springfield, beginning at 4:00 p.m.

#### **Adjournment**

The meeting adjourned at 11:30 p.m.

cc: Ken Runkle  
Acting Chief, Division of Environmental Health