

# The Driller's Digest

Volume 10, Spring/Summer Issue

June 2009

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*This newsletter is published as a service to certified well contractors and others in the groundwater industry. Suggestions for articles for publication in the newsletter are welcome.*

## Well Construction Record Tips

by Michele Phillips, Information Processing Unit Supervisor, DWQ

The following are tips developed by the folks that actually process the well construction records you send in to the state- the Information Processing Unit, based out of the Division of Water Quality. Please take note of these to ensure your future records are completed properly.

- Please use the correct form according to the well use. (Residential or Non-Residential)
- If the well is non-residential please include the contact person information for the facility also.
- For non-residential wells, if the facility and well location and/or contact location are the same, please indicate. Ex: "same as well location"
- There should be only 1 well per form. Avoid entering multiple well information on one form. Example: Site Well ID "Well Information Section" and Total Depth "Well

Details Section" should only contain information for one well per form.

- Latitude/Longitude information should be within the proper range, and in the correct format and setting. Ex: Latitude must be in the range 33.75 through 37.75. Longitude must be in the range -84.5 through -75.50. In addition, check to be sure the information is in the correct decimal and/or degree format. For the topographic/land setting, only one selection may be used. Multiple land settings may not be used.
- List the correct well contractor certification #.
- Fill out all fields correctly. Provide a complete address. Ex: street number, street name, city, zip code, and county.
- If printing, please make sure to write legibly.
- When filling out well details section the casing, grout, screen, sand/gravel pack, and the drilling log "From/To" and/or "Top/Bottom" please make sure the "From" is

*(Continued on page 4)*

## Permitting Requirements for Geothermal Wells

by Michael Rogers, Environmental Specialist, DWQ

Due to reduced energy costs, enhanced tax benefits (there is now a 30% federal tax credit for installation costs and a proposed state tax credit of \$8400), and the desire to use renewable resources (i.e. 'green'), many homeowners and building contractors are opting for geothermal heating and cooling systems that use wells.

Geothermal systems work on a different principle than an ordinary furnace/air conditioning system. Instead of using a conventional HVAC system where gas or electricity is used to heat/cool (non-renewable energy), the geothermal system uses the relatively constant temperature of the earth to expel excess heat during the summer and draw warmer temperatures during the winter (renewable energy). The up-front costs to install these systems are higher, but they use less electricity to run, thus sav-

*(Continued on page 3)*

## Summary of Civil Penalty Assessments

*Penalties for violations of NCGS Chapter 87, Article 7A and NCAC Title 15A, Chapter 27 vary depending upon the particular facts and circumstances present in each case. Note: only finalized uncontested cases or cases not seeking remission and at the collection stage are included in this list (payment of fines and corrections of violations may already have occurred).*

### Joel Walker

Dare County, NC. Allegations of contracting without the benefit of certification in violation of 15A NCAC 27. Assessed a civil penalty of one thousand dollars (\$1,000.00).

**Effective Date 5/5/08 Case # WCC 001-08**

### Jeff Stagg

Dare County, NC. Allegations of advertising well contractor services without the benefit of certification in violation of 15A NCAC 27. Assessed a civil penalty of one thousand dollars (\$1,000.00).

**Effective Date 2/25/09 Case # WCC 002-08**

### Kevin Pool

Currituck County, NC. Allegations of contracting without the benefit of certification in violation of 15A NCAC 27. Assessed a civil penalty of one thousand dollars (\$1,000.00).

**Effective Date 1/5/09 Case # WCC 007-08**

### Kenneth DeRoche

New Hanover County, NC. Allegations of contracting without the benefit of certification in violation of 15A NCAC 27. Assessed a civil penalty of one thousand dollars (\$1,000.00).

**Effective Date 12/29/08 Case # WCC 009-08**

### Robert Meadows

New Hanover County, NC. Allegations of contracting without the benefit of certification in violation of 15A NCAC 27. Assessed a civil penalty of one thousand dollars (\$1,000.00).

**Effective Date 12/29/08 Case # WCC 010-08**

### Matthew Cunningham

Greene County, NC. Allegations of contracting without the benefit of certification in violation of 15A NCAC 27. Assessed a civil penalty of one thousand dollars (\$1,000.00).

**Effective Date 3/25/09 Case # WCC 011-08**



### Robert Meadows

Onslow County, NC. Allegations of contracting without the benefit of certification in violation of 15A NCAC 27. Assessed a civil penalty of one thousand dollars (\$1,000).

**Effective Date 1/15/09 Case # WCC 013-08**

### Benjamin K. McPherson

Currituck County, NC. Allegations of contracting without the benefit of certification in violation of 15A NCAC 27. Assessed a civil penalty of one thousand dollars (\$1,000).

**Effective Date 3/10/09 Case # WCC 001-09**

### Tony Clayton

Guilford County, NC. Allegations of contracting without the benefit of certification in violation of 15A NCAC 27. Assessed a civil penalty of one thousand dollars (\$1,000).

**Effective Date 4/25/09 Case # WCC 003-09**

### Barney Waters

Beaufort County, NC. Allegations of contracting without the benefit of certification in violation of 15A NCAC 27. Assessed a civil penalty of one thousand dollars (\$1,000).

**Effective Date 4/20/09 Case # WCC 004-09**

### Richard Bunker

Wake County, NC. Allegations of contracting without the benefit of certification in violation of 15A NCAC 27. Assessed a civil penalty of one thousand dollars (\$1,000).

**Effective Date 4/1/09 Case # WCC 009-09**

### Michael Dillard

Cherokee County, NC. Allegations of failing to properly grout a well to a minimum of 20 feet and failing to provide a well tag in violation of NCAC 2C .0100. Assessed a civil penalty of two thousand one hundred dollars (\$2,100).

**Effective Date 3/28/08 Case # 2C-2008-001**

### Garland Loftin

Lenoir County, NC. Allegations of failing to properly grout a well to a minimum of 20 feet, failing to provide a well tag, failing to submit a GW-1 form and failing to maintain a minimum setback from a foundation/septic tank. Assessed a civil penalty of two thousand nine hundred dollars (\$2,900).

**Effective Date 2/12/09 Case # 2C-2008-004**

### Kenneth Rose

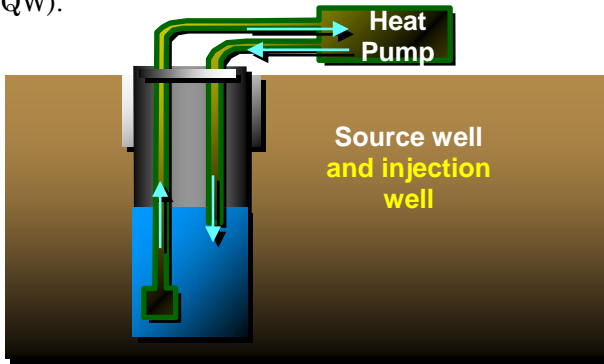
Cherokee County, NC. Allegations of failing to properly grout a well to a minimum of 20 feet and failing to maintain proper setbacks. Assessed a civil penalty of one thousand five hundred dollars (\$1,500).

**Effective Date 9/15/08 Case # 2C-2008-0016**

*Permitting Requirements for Geothermal Wells  
(Continued from page 1)*

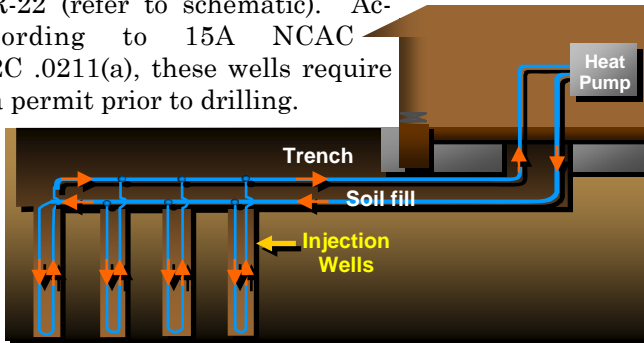
ings are realized over time should energy costs rise. According to the Environmental Protection Agency (EPA), the wells used for these systems (borings with open hole or closed tubing) are classified as Class V injection wells, and North Carolina requires either a permit or notification prior to drilling. Although the Division of Water Quality (DWQ) is seeing an increase in the installation of these wells, many well drillers seem unaware a permit or notification is required prior to drilling.

Class V wells used with these geothermal systems consist of three main types: open loop (5A7), closed loop using water mixed with additives or R-22 refrigerant gas (5QM), and closed loop using only water (5QW).



The 5A7 well pumps groundwater out of the aquifer, circulates it through a heat exchange system, and then re-injects the water back into the aquifer.

The 5QM well uses a subsurface system of enclosed HDPE pipes or copper tubing that circulate either (a) water mixed with chemical additives such as propylene glycol (anti-freeze), or (b) refrigerant gas such as R-22 (refer to schematic). According to 15A NCAC 2C .0211(a), these wells require a permit prior to drilling.



A third type of geothermal well is the 5QW, which also uses a subsurface system of HDPE pipes, but recirculates water only with no chemical additives. These wells are “deemed to be permitted” in accor-

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**North Carolina Well Contractors  
Certification Commission**

1618 Mail Service Center / Raleigh, North Carolina 27699-1618  
Telephone: (919) 733-0026 Fax: (919) 733-1338

**Commission Members**

- Greg Bright**— Louisburg, NC
- Buck Demarest** – Raleigh, NC
- Chris Dickey**– Murphy, NC
- Benford Graham** - West End, NC
- Bill Hamlin**– Dobson, NC
- Bill Magette, Vice Chairman** - Ahoskie, NC
- John Nykamp, Chairman** - Greensboro, NC

**WCCC Staff (DWQ / BOG / WCCC)**

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- Drew Morgan, R.S.** (919) 733-0026 x302 (enforcement)  
Andrew.Morgan@ncdenr.gov
- Joanne Rutkofske** (919) 733-0026 x315 (CE, general info.)  
Joanne.Rutkofske@ncdenr.gov

**Certification Numbers Update**

|   |      |
|---|------|
| Total number certified.....                       | 1396 |
| Total number of applicants for certification..... | 128  |
| Approved to take exam.....                        | 84   |
| Applications pending.....                         | 42   |
| Certifications currently suspended.....           | 4    |

**NC Division of Water Quality  
Aquifer Protection Section (APS)**

*For assistance with well construction problems, or questions about well construction rules, contact your regional office- Aquifer Protection Section at:*

|                      |              |
|----------------------|--------------|
| <u>Asheville</u>     | 828-296-4500 |
| <u>Fayetteville</u>  | 910-433-3300 |
| <u>Mooresville</u>   | 704-663-1699 |
| <u>Raleigh</u>       | 919-791-4200 |
| <u>Washington</u>    | 252-946-6481 |
| <u>Wilmington</u>    | 910-796-7215 |
| <u>Winston-Salem</u> | 336-771-5000 |

APS website: <http://h2o.enr.state.nc.us/aps>

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*Permitting Requirements for Geothermal Wells*  
(Continued from page 3)

dance to 15A NCAC 2C .0211(u), and only a Notification of Intent to Construct form is required to be submitted prior to drilling.

For more information on geothermal wells go to our website at <http://h2o.enr.state.nc.us/aps/gpu/uic/geothermal.htm>. This site has links to download permit application and notification forms. Another website containing information on geothermal systems is The Geothermal Heat Pump Exchange- <http://www.geoexchange.org/>.

## **WCCC– Disciplinary Committee**

by Drew Morgan, WCC Staff

### **Fred Crane and Donnie Crane**

For violations of 2C .0300. Both well contractors were given letters of reprimand for drilling wells without first acquiring permits from the local health departments prior to well construction.

**Effective Date 1/12/09**

*Well Construction Record Tips*  
(Continued from page 1)

smaller number and the “To” is the larger number. Ex: Depth From- 0 To 20. In addition, this is not a text field, therefore, the term “Grnd, (Ground), or top” may not be used. Only numbers may be used.

- Screen Depth must be in the range 0.01 through 9999.00.
- Well screen diameter must be in the range 0.01 through 99.00.
- The well casing diameter is required information and may not be left blank. Well casing diameter must be an integer or decimal number!

If you need assistance with a GW-1 or GW-30, please feel free to contact me at 919-807-6429.

Michele Phillips  
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NC Division of Water Quality  
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To Report Uncertified Well Contractors Call (919) 733-0026 x302