

KENTUCKY DRILLER QUARTERLY

Volume 6, No. 2

Division of Water Groundwater Branch

October 2002

Hand-held GPS Units and Accuracy

Technological advances in recent decades have made it possible to determine the latitude and longitude of almost any point on the earth's surface by creating a link between satellites in orbit and hand-held global positioning systems (GPS). However, every advance in technology comes with limitations, and GPS units are no exception. Under ideal conditions, the use of a hand-held GPS unit to locate a work site can be amazingly accurate. But how many of you ever get to work under ideal conditions? Generally, well drillers find themselves working at remote and sometimes inhospitable sites, surrounded either by dense woods or overpopulated urban areas. Throw inclement weather into the equation and you have all of the factors that contribute to poor operating conditions for reliable GPS readings.

Presented here are a few tips to maximize the effectiveness of your hand-held GPS unit. GPS units determine the user's latitude and longitude by receiving signals from multiple satellites that have precisely known locations. These satellites emit short wave length radio waves that are picked up by the GPS receiver. The GPS receiver requires signals from at least four satellites to give a reliable reading and more satellites will yield a more precise reading. However, short wave length radio waves are easily blocked. They cannot pass through substances such as heavy tree canopies, buildings, the user's body and even storm systems with heavy cloud cover.

Most of these obstacles can be overcome. First, make sure that you are operating the GPS unit in an area with the least amount of cover, away from buildings and out from beneath tree cover, even if it means walking 50 feet from the actual work site. It is better to have a reliable reading that is set off by a known amount than a reading that has been completely fouled by some obstruction. This obstruction could even be the user's body, so don't hold the GPS unit up to your chest and read it as you wait for the reading to stabilize. You might be blocking signals. Second, allow plenty of time for the GPS unit to capture signals from satellites overhead. This may require 5 or 10 minutes. I like to turn on the GPS unit and lay it on a tree stump or something out in the open and just let it work for a few minutes while I get other gear together. When I'm ready, I come back to check the GPS unit and see if it has

stabilized. If it hasn't, then I let it keep working for a while longer. Unfortunately, obstacles like weather cannot be overcome. These cases may require another site visit when the weather has cleared.

For further information concerning the use of hand-held GPS units check out these web sites:

www.thegpsstore.com

www.cla.sc.edu/GEOG/rsrab/gps.html

Robert Blair, Groundwater Branch



Death of Driller

In August, the Groundwater Branch learned of the tragic death by auto accident of Joe Jackson. Mr. Jackson, of Parker and Jackson Drilling, Bradford, Tennessee, had been certified in Kentucky from September 1985 to June 2000.

Our sympathy goes out to his family.



Board Meeting

The next scheduled meeting of the Kentucky Water Well Certification Board will be Friday, Dec. 20, starting at 9 a.m. at the Division of Water in Frankfort.

The meeting will be open to all drillers and the public.



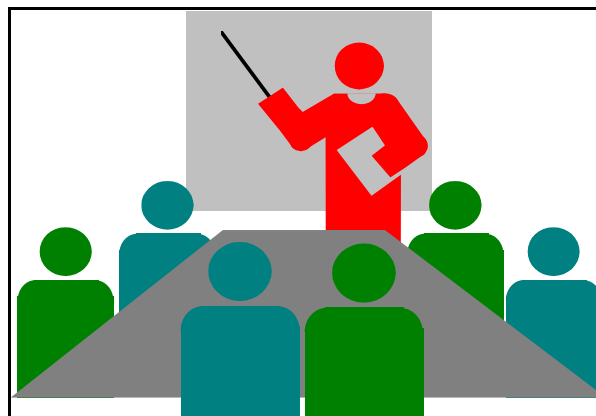
Some Problems from Recent and Past Renewal Periods

- ◆ When a certified driller leaves a company, the driller should notify the Groundwater Branch in order to keep an avenue of communication open. This will insure that important information such as certification renewal and future re-instatement procedures can be transferred to the driller.
- ◆ When submitting a surety bond, the certified driller is to be named as “Principal” and the bond has to be signed by the driller and notarized.
- ◆ Please make sure your insurance agent has the Division of Water, Groundwater Branch listed as certificate holder on your Certificate of Insurance and has a Certificate of Insurance automatically mailed to us when you pay your premium.
- ◆ When planning to attend any training for your continuing training requirement, please call Joe Moffitt at the Groundwater Branch for approval. When you attend your training, be sure to obtain proper attendance documentation. This includes a signed certificate, training card or letter along with an agenda.
- ◆ 8 - hour or 40 - hour OSHA training is not acceptable.
- ◆ If you can show proper attendance for 6 hours of pre-approved training, 3 hours can be carried over to the next renewal period.
- ◆ List your rig operators on the renewal form. If a rig operator's name is not listed, we assume that rig operator is no longer working under your certification. Note: there is no renewal fee for a rig operator.
- ◆ Return the certificate renewal form to the proper address:
 Division of Water
 Groundwater Branch
 14 Reilly Road
 Frankfort, KY 40601
- ◆ These are a few of the problems that seem to slow the renewal process every year. Please pay careful attention to the above problems when renewing your certification next year. Your cooperation will be greatly appreciated.



KGWA Workshop

The 18th annual Kentucky Ground Water Association Workshop and Tradeshow is currently being planned for **March 6 and 7, 2003**, at the Holiday Inn South in Louisville. If you have any drilling-related subjects you would like to see covered or know of speakers for programs, contact Alan Burgess, President, or Holly Lyell, Secretary, at (270) 251-3004.



Training Opportunities

Ohio Water Well Association Annual Convention

Wilmington, OH
 Nov. 21 – 22

Contact: Dan Schlosser
 Phone: (419) 845-2023
 Fax: (419) 845-2026

National Ground Water Association's Ground Water Expo

Las Vegas, NV
 Dec. 8 – 11

Contact: National Ground Water Association
 601 Dempsey Rd.
 Westerville, OH 43081-8978
 Phone: (800) 551-7379
 Fax: (614) 898-7786
 Web: www.ngwa.org

Idaho Ground Water Association Annual Convention

Boise, ID
Jan. 9 – 11, 2003

For information: Phone: (208) 226-2580
Fax: (208) 226-2547

**Wisconsin Water Well Association
Groundwater Conference**

Green Bay, WI
Jan. 16 – 17, 2003

For information: Phone: (608) 592-2610
Fax: (608) 592-2566

**Arkansas Water Well Contractors Association
Winter Meeting and Trade Show**

Hot Springs, AR
Jan. 26 – 28, 2003

For information: Phone: (501) 865-3750

**Iowa Water Well Association
Convention and Trade Show**

West Des Moines, IA
Jan. 30 – 31, 2003

For information: Phone: (515) 243-1558

**Illinois Association of Ground Water Professionals
Annual Meeting and Expo**

Rockford, IL
Feb. 21 – 22, 2003

For information: Phone: (800) 990-2209

**Kentucky Ground Water Association
18 th Annual Workshop and Trade Show**

Holiday Inn South, Louisville, KY
March 6 – 7, 2003

For information contact:

Kentucky Ground Water Association
P. O. Box 991
Mayfield, KY 42066
Phone: (270) 251-3004

In order to use training other than the Kentucky Ground Water Association's Annual Drillers' Workshop, you MUST contact Joe Moffitt, Harold Lee or David P. Leo at the Groundwater Branch.

Remember to obtain proper attendance documentation when attending any training for your continuing training requirement. This includes a signed certificate, training card or letter along with an agenda.



Groundwater Protection Plans (GPP) for domestic wells, septic systems and monitoring wells are available to drillers. They can be located on the Groundwater Branch's Web site at:
<http://water.nr.state.ky.us/dow/dwgr.htm>
or by contacting Pat Keefe at (502) 564-3410, Ext. 445

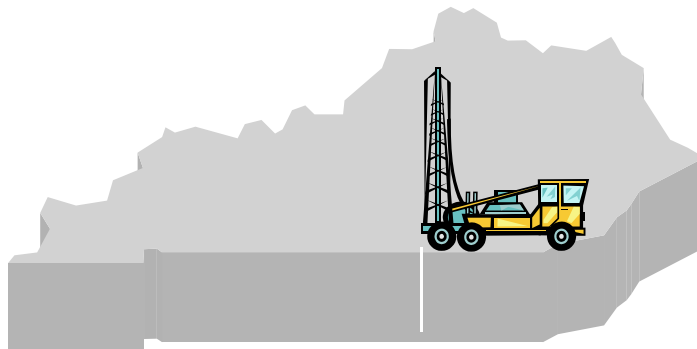


*Call BUD Before
You Dig*

Kentucky Underground Protection, Inc., is a non-profit organization established to provide a communication link between excavators and operators of underground utilities.

KRS 367.4901 to 367.4917 requires that you call two business days before you dig in the state of Kentucky.

The toll free number to call is:
1-800-752-6007
In Louisville, (502) 266-5123



Kentucky Driller Quarterly is a publication of the Kentucky Division of Water.

Inquiries should be made to:

**Harold Lee, Editor
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Division of Water
Groundwater Branch
14 Reilly Rd.
Frankfort, KY 40601**

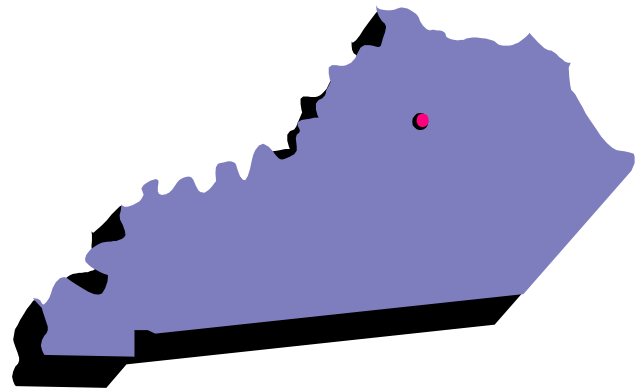
Phone (502) 564-3410

All contributors to this issue are employees of the Division of Water.

Visit the Groundwater Branch page on the Internet at:

<http://water.nr.state.ky.us/dow/dwgr.htm>

E-mail: Harold.Lee@mail.state.ky.us



**Natural Resources and Environmental
Protection Cabinet
Department for Environmental
Protection**

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