

A JOURNAL SERVING THE UNDERGROUND UTILITY JUNGLE SINCE 1986

UNDERGROUND FOCUS

NOVEMBER / DECEMBER 2005 • VOLUME 19 • ISSUE 8 • \$4.25



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**World of Training
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See back cover...

**EXCAVATING & STAKING
TOOL BOX
ISSUE**

Every year in the United States, trenching accidents account for more than 5,000 serious injuries...

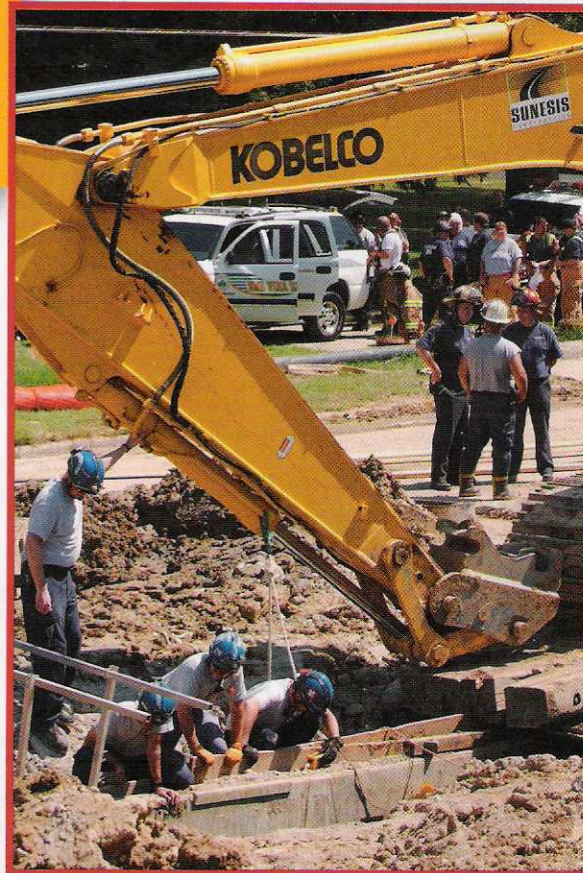
TRENCHING ACCIDENTS

9/04 to 9/05

These are not all the trench accidents that occurred during this period. These are only the ones that could be documented by Underground Focus.

DEER PARK, OH—A trench collapse in suburban Cincinnati killed one worker. The worker was working below the trench box, when the trench collapsed and buried him. Rescue crews worked for several hours before they were able to remove the man from the 30-foot trench. According to officials, the trench box being used was not effective because the hole extended about 10 feet deeper than the box supporting it. The man was working on sewers in the area on contract with the local sewer district. 7/31/2005

Photo by Glenn Hartong of the The Cincinnati Enquirer



KNOXVILLE, TN—A construction company was fined \$8,000 by the state following a probe of an accident that killed a man. The man was working in a trench when the dirt wall collapsed on him at the construction site. The trench box had been installed for protection but reportedly dirt had been piled too high above the box. The dirt shifted and cascaded onto the man burying him under more than 15-feet of soil. Officials stated the company was fined because the trench boxes used when the collapse occurred were not designed to handle a trench as deep as the one in which the worker was. 9/04

SOUTH JORDAN, UT—Two children were trapped in an 8-foot trench after the dirt wall collapsed on them. The children reportedly climbed into the trench that surrounded a newly poured basement of a home under construction. One of the children was able to yell for help. Neighbors who heard the yells called 911 and started digging the boys out, removing compacted chunks of dirt from the boy and clearing dirt from his head. One boy suffered a broken leg and other minor injuries. The construction site reportedly had no protective fencing around it or warning signs. 10/09/04

...and between 50 and 100 deaths. This magazine has documented 41 deaths between the one-year period of September 2004 to September 2005.

On average, trench wall failures cause about 74 percent of the country's excavation and trenching accidents each year with 11 percent involving workers struck by back hoe buckets or crushed and asphyxiated between trench walls or excavation equipment. Other documented accidents involved drowning in flooded trenches, being exposed to toxic conditions during excavation and workers falling into the trenches.

Following are OSHA's top five serious citations for trenching and excavation violations:

- Lack of proper protective systems used in the excavation. There were inadequate or no existing protective systems within the trench or excavation specific to trench sloping, benching, shoring types or trench shield application.
- Lack of site excavation inspections.

•Lack of field practices to control the existence of loose rock and soil.

•Lack of a means of access or egress within the trench.

•Worker exposure to vehicular traffic. Workers alongside public vehicular traffic and entering an excavation or trench were not provided with high visibility or a reflective warning vest.

While trench work can be among the most dangerous of construction jobs, most of these hazardous conditions can be avoided if contractors follow the proper safety procedures.

One of the greatest risks of working in a trench is cave-ins, which occur even in small trenches. Cave-ins can be caused by vibration of nearby equipment, weight of equipment that is too close to the edge of the trench, soils that do not hold tightly together and water weakening the trench sides. To protect against cave-ins proper shoring, sheeting, shielding, sloping and benching must be used. Trenches deeper than four feet should also have a way to get in

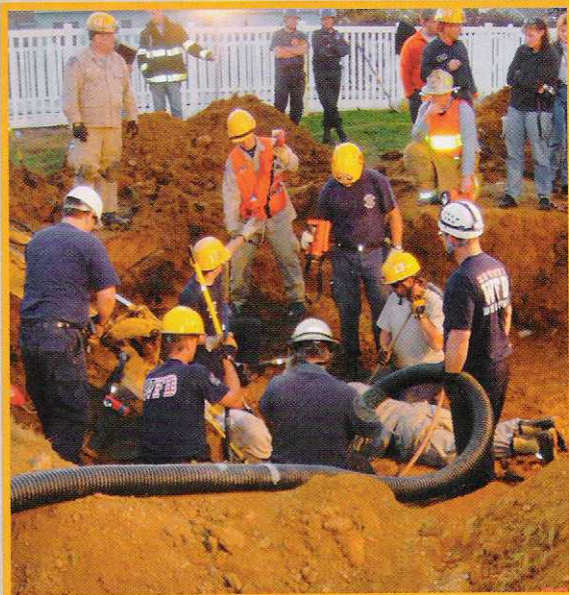
and out safely for every 25 feet of horizontal travel within the trench.

In 2004, the Occupational Safety and Health Administration (OSHA) formed an industry work group to find ways to reduce the number of trench and excavation fatalities. OSHA officials found that 75 percent of trench-related deaths occurred in trenches that were not equipped with protective systems and are preventable. Adding to the problem is that 60 percent of workers who are killed have never received trench safety training. Therefore, it is essential for contractors and laborers to understand the mandated safety practices and regulations that apply to trenching and excavation operations. Various industry groups and consultants offer formal training in trench safety.

For more information on digging trenches, check the federal guidelines from OSHA at www.osha-slc.gov/SLTC/trenchingexcavation.

Vacuum Excavation Truck Used in Recent Trench Rescue

It was just a routine afternoon on November 8 for a crew from Underground Services, Inc., working with a client to determine the exact location of a utility using SoftDig, an excavation technology for environmentally-safe, non-destructive test holes. When suddenly just before 2 p.m., Bob Milliken, Vice President of Underground Services Inc, receives a call on his cell phone from a local fire chief about a trench has collapsed near Port Penn, Delaware. With his nearest crew about an hour away, Milliken dispatched them to the scene. He was able to dispatch a second crew several minutes later. Both arrived on the scene about 3 p.m.



When they arrived, the rescue mission had turned into a recovery effort for a 32-year-old construction worker from Delaware who was buried alive and killed when a dirt wall collapsed in a 9-foot trench he was digging. The man's body was pulled from the trench about 5:30 p.m.

The man and another worker were digging the fifth of seven trenches for a septic system. The victim was standing in the trench reportedly shoring up the walls around noon while another worker used a backhoe to move dirt. The dirt wall began to collapse burying the man under an estimated 150 to 300 cubic feet of dirt or the equivalent of 1,500 to 3,000 pounds. The man's body was pulled from the trench nearly six hours after he was trapped there. About 40 workers from four area fire departments, county emergency medical services and police departments responded. Rescue workers used mounds of dirt using backhoes and secured the trench walls with plywood to prevent another collapse. In addition, Claymont Fire and Rescue called I used both the air lance and vacuum from the one of the SoftDig truck to assist in the recovery efforts.

Milliken's staff has responded to other trench accidents in the past several years providing equipment that according to him allows rescue workers to remove soil at the bottom of a deep trench in less time than using hand digging equipment. In addition, SoftDig/Underground Services, Inc. has provided training and demonstrations for the Claymont fire department and others regarding the use of vacuum excavation in trench rescue.