

Cave-in Kills Field Service Owner in Wyoming

SUMMARY

A 30 year old male died from injuries suffered when the sides of a trench fell in on him while he was repairing a broken water main under a city street. The victim and a co-worker had brought a back-hoe to the address of a relative of the victim to dig a 10' deep trench at a buried water line. By mid-afternoon, they reached the water line and determined to weld the line break. The victim then rented a truck-mounted arc welder and began the operation. Due to the approaching darkness, the co-worker returned to the back-hoe to close the windows. When he returned, he saw that the trench had caved in.

The co-worker called for help and jumped into the trench to attempt to uncover the victim. Rescuers arrived on the scene and extricated the victim from 1½ to 2' of wet dirt over a period of 25 to 35 minutes. The victim was transported by ambulance to a local clinic where he was pronounced dead on arrival.

Employers may be able to minimize the potential for occurrence of this type of incident through the following precautions:

- **Trenching operations should provide cave-in protection, such as sloping, benching, or trench.**
- **Regularly scheduled safety meetings should be provided to all employees of trenching operations.**
- **Particularly when working in wet soil, a person inside a trench should be in the constant vision of a co-worker.**
- **Safety precautions required for contracts with oil fields should also be used during less formal arrangements with individuals, governments, or small businesses.**

INTRODUCTION

On a Thursday evening, October 21, 1993 the owner/operator of a field service operation was working on a broken water line under contract to the city to help locate and repair a broken water main. The victim and a co-worker brought a back-hoe to the property of a relative of the victim to dig down to and repair a broken water line on the premises. They dug a trench approximately ten feet deep, 16' long and 7' wide, in soil that was wet from the broken water pipe. The spoil was piled 3' back from the edge of the trench.

By mid-afternoon, the water line had been uncovered and it was determined that the line needed to be welded; so the victim rented a truck mounted arc welder to use inside the trench. The

welding was not working properly and was taking more time than had been expected. As it was getting dark, the co-worker returned to the back-hoe to close the windows. After closing the windows, he turned back around and saw that the trench had caved in.

INVESTIGATION

The WY- Wyoming FACE Project was notified of the incident by telephone communication from the county coroner on the evening it occurred. Through a reciprocal notification agreement with the Director of the Occupational Safety and Health Division of the Department of Employment, OSHA was notified by the Wyoming FACE Project Coordinator.

The victim had worked around trenches for approximately eleven years and was familiar with trenching equipment and protective wall shoring. He was the chief executive officer of a field service operation which served primarily as a subcontractor for oil fields in the area. He had been helping the city locate the water problem and was hired by the property owner to repair the broken pipe.

The pipe had been broken for three days, and the soil was wet and had been previously disturbed. The trench had been open for 3 hours before the cave-in occurred. No protective walls or shoring had been used to guard against a cave-in. The victim was laying on his side in the trench, using a truck mounted arc welder to repair the broken steel water line.

The wet soil had collapsed onto the victim, burying him under 1½ to 2 feet of dirt. The co-worker jumped into the trench to dig the victim out, and shouted for help. Emergency services were called by the victim's wife and brother-in-law who were in the residence at the time of the incident. Police, fire department, and ambulance personnel responded and spent from 25 to 30 minutes extricating the victim from the wet dirt. He was transported by ambulance to a local clinic and was pronounced dead on arrival.

CAUSE OF DEATH

The Medical Examiner listed the cause of death as asphyxiation due to a cave-in trench.

RECOMMENDATIONS/DISCUSSION

This incident could have been prevented by providing the required support to protect employees from trench cave-ins. The victim was accustomed to trenching operations and was well aware of the safety benefits of shoring walls to prevent injury from cave-ins. His usual operation was as a sub-contractor to large oil companies in the area with enforced requirement for protective facings on trenching operations. In this instance, he was working for an individual property owner under a time element caused by a need for water to be supplied to the residence and approaching darkness. Perhaps a combination of those factors caused him to decide against proven safety precautions.

Companies who operate trenching equipment or otherwise work in or around trenches should be aware of the OSHA requirement for an adequate protective system in trenching operations. In addition, in order to protect employees from the potential for injury, each employer should use safety practices whether or not the operation is under OSHA jurisdiction or is required by a major contractor.

Routine safety meetings and review of safety procedure should be conducted, regardless of the size of the company, as a means of protecting employees and saving employers the cost of on-the-job injury that can be costly in both time and money. There is often a lesser amount of safety training for a small company than for a large employer, primarily because of the initial cost of safety training. Small companies can often group together to take advantage of shared costs of safety training programs, or request safety training from larger companies who have materials and trainers available in the community. Small businesses could and should avail themselves of whatever safety training they can find.

FATAL ACCIDENT CIRCUMSTANCES AND EPIDEMIOLOGY (Wyoming FACE) PROJECT

The National Institute for Occupational Safety and Health (NIOSH), Division of Safety Research (DSR), performs Fatal Accident Circumstances and Epidemiology (Wyoming FACE) investigations when a participating state reports an occupational fatality and requests technical assistance. The goal of these evaluations is to prevent fatal work injuries in the future by studying the working environment, the worker, the task the worker was performing, the tools the worker was using, the energy exchange resulting in fatal injury, and the role of management in controlling how these factors interact.

States participating in this study include: Kentucky, Maryland, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia.

NIOSH Funded/State-based Wyoming FACE Projects providing surveillance and intervention capabilities to show a measurable reduction in workplace fatalities include: Alaska, California, Colorado, Georgia, Indiana, Iowa, Kentucky, Massachusetts, Maryland, Minnesota, Missouri, Nebraska, New Jersey, Wisconsin and Wyoming.

Additional information regarding this report is available from:

Wyoming Occupational Fatality Analysis Program
522 Hathaway Building - 2300 Capitol Avenue
Cheyenne, WY 82002
(307) 777-5439

Please use information listed on the Contact Sheet on the NIOSH FACE web site to contact [In-house FACE program personnel](#) regarding In-house FACE reports and to gain assistance when State-FACE program personnel cannot be reached.