

Case 109. 50-year-old male construction laborer was killed when a piece of frozen soil broke off during a trench excavation operation and struck him in the back.

On March 2, 2005, a 50-year-old male construction laborer was killed when a piece of frozen soil approximately five to six feet in diameter and 16-24 inches wide broke off during a trench excavation operation, rolled into the excavation, and struck the deceased in the back. The deceased was a member of a six-person crew. The crew consisted of one excavator operator, two coworkers above the trench, another coworker cutting pipe in a different location above the trench. The deceased and another coworker were in the trench. A trench box was not on site. At the time of the incident, the deceased was applying lubrication to a 42-inch OD concrete pipe. The trench was about 12-13 feet deep and approximately 55 feet long. The trench width ranged from 6-12 feet wide. The trench walls were not in compliance with regulations concerning the proper angle of repose. The angle of repose at the south wall was 39 degrees at the location of the excavator. The trench ran from north to south with the sewer pipe running from the north towards the south. The soil was stiff moist gray clay with some silt, a trace of sand, and gravel. Excavation operations were suspended while the victim's coworker in the trench walked south from the pipe to check the grade and make sure the excavation was large enough to fit the next 5-foot section of pipe and still have room to set the manhole. When excavation operations resumed, the victim's coworker was in the center of the excavation less than 15 feet from the body of the excavator, but was almost directly under the boom of the machine and only a few feet from under the excavator bucket. The deceased was less than 20 feet from the boom and bucket. He had been standing on the concrete pipe and at some point, left the pipe and stood on the ground in front of the pipe. The excavator operator picked up a large piece of frozen earth, saw it was "teetering" in the bucket and tried to set the bucket down. As he was setting the bucket down, the piece of earth broke into two pieces. The coworker in the trench saw the section of frozen soil lying in the excavator bucket and heard the soil break. The first section of frozen soil landed on the south end of the excavation, and the other piece (the piece that struck and killed the deceased) landed on its end and rolled like a wheel down the trench line. The excavator operator sounded his horn. Someone started to yell. As the frozen earth started to roll into the trench towards him the coworker ran in between the pipe and the trench wall. The deceased was hit in the back by the rolling frozen soil and the coworker was pinned against the trench wall at shoulder level when the piece of soil "flopped back". The coworker was able to extricate himself from the piece of soil and attempted to help the deceased who was in a kneeling position against the concrete pipe. Emergency response was called. Coworkers entered the trench and placed clothing around the deceased to keep him warm while awaiting emergency response arrival. The deceased died at a local hospital.

MIOSHA issued the following 3 Serious citations to the company:

Serious:

GENERAL RULES, PART 1, RULE 114(2)(d).

An accident prevention program shall, as a minimum, provide for the following:

Instruction to each employee in the recognition and avoidance of hazards and the regulations applicable to his or her work environment to control or eliminate any hazards or other exposure to illness or injury.

Employer did not provide training to employees in excavating operations and hazards associated with storage of materials, soils affected by weather and proximity to excavator and equipment during digging operations.

Serious:

ACT 154 PUBLIC ACT OF 1974, 408.1011(a).

The employer did not furnish to each employee, employment and a place of employment which is free from recognized hazards that are causing, or are likely to cause, death or serious physical harm to the employee.

Employees were installing sewer pipe and structures in an excavation with improper angles of repose, improper access and egress, materials stored at and adjacent to the edge and frost and frozen soils were known to be present approximately two feet from the top of the excavation. Employees were inside the excavation and at the point of danger where frost and frozen soils were being excavated and lifted when a large piece broke loose and struck them.

One possible abatement would be for employees to be removed from the point of danger while the hazardous frozen soil was excavated.

Serious:

EXCAVATION, TRENCHING, AND SHORING, PART 9, RULE 932(5).

An ongoing inspection of an excavation or trench shall be made by a qualified person. After every rainstorm or other hazard-producing occurrence, an inspection shall be made by a qualified employee for evidence of possible slides or cave-ins. Where these conditions are found, all work shall cease until additional precautions, such as additional shoring or reducing the slope, have been accomplished.

Qualified person's actions not consistent with qualified person training related to excavating and equipment operations at the site. Employees were exposed to hazards associated with unsafe conditions of an excavation while installing 42-inch O.D. concrete pipe and structures, and applying mortar and bricks to the connections of them. The unsafe conditions were six walls of an excavation not cut to the proper angle of repose, excavated and other material were stored at and adjacent to the edge of the excavation, no proper access and egress of the excavation, and employees were in the excavation and at the point of danger during lifting and digging operations of frost and frozen soil.