DATE: September 15, 1992

FROM: Fatal Accident Circumstances and Epidemiology (FACE) Project
Minnesota Department of Health (MN FACE)

SUBJECT: MN FACE Investigation MN9209
Landscape Laborer Dies After Being Struck By The Bucket Of A Case Skid Steer Loader

SUMMARY

A 16-year-old male (victim) landscape laborer died as a result of traumatic injuries received after being struck by the bucket of a case skid steer loader. Three landscaping workers were pulling up a silt fence from around a drainage pond in a housing area under development. A slightly sloping bank surrounded the pond, and a case skid steer loader near the middle of the bank was being used to assist in the removal of the wooden stakes securing the fence. The bucket of the loader was lowered, the fence was wound around the bucket, and finally the bucket was raised to remove each stake. While removing one of the stakes the loader tipped forwards while the bucket was in the raised position. The operator began lowering the bucket to stabilize it. At the same time, the victim, who was standing to the front and side of the loader, slipped and fell beneath the descending bucket. The descending bucket struck his chest and he died shortly afterwards in surgery from his injuries. MN FACE investigators concluded that, in order to prevent similar occurrences, the following guidelines should be followed:

> operators of heavy equipment should be thoroughly trained and competent in the procedures the equipment may be used for before working near others; and

> workers who are required to work near heavy equipment, in addition to heavy equipment operators, should be instructed and capable of recognizing potential associated hazards and be aware of methods for avoiding personal injury.

INTRODUCTION

On July 16, 1992, MN FACE personnel became aware of a July 9, 1992, work-related construction fatality after receiving a newspaper article about the incident. Minnesota Occupational Safety & Health Administration (MN OSHA) was contacted for information, police and county coroner reports were requested, and the victim's employer was interviewed via phone. Due to pending lawsuits, a site visit was not possible at the time of this reports generation.

The landscaping company hired between 12 and 15 employees in the summer months. Some summer employees were high school students earning extra money while on summer break. Usually seven to eight of the summer employees were manual landscape laborers whose major responsibilities were raking out yards for sod placement and then laying sod. Only about three individuals continued to be employed through winter when work was slow.

The landscape manager of the company was responsible for safety instruction and training. The company had written safety rules and procedures for positions involving operation of machinery. There were no written safety rules, however, for landscape laborers.

INVESTIGATION

The incident occurred shortly after work began, about 8:30, on a summer morning. Three landscaping workers were removing a silt fence from around a drainage pond in a residential area under development. The fence was secured in place with wooden, 1 x 2-inch stakes, onto which the fence was stapled. A slightly sloping bank surrounded the pond. An engineer's estimate of the slope ratios of the banks top, middle, and bottom sections, were 8:1, 5:1, and 3:1, respectively. These ratios refer to bank angles of 7, 12, and 20 degrees and were calculated from pictures taken of the site shortly after the incident.

Two workers near the bottom of the bank managed the fence. They were standing in heavy overgrowth but were still on dry, solid ground. The other worker operated the case skid steer loader, which sat at the middle of the bank above the two laborers. The bank angle in this section was approximately 12 degrees. When stakes were removed, the

loader was positioned with its bucket facing down the slope towards the fence and laborers.

The overgrowth around the pond caused difficulty in pulling up the fence stakes by hand, so the loader was being utilized to assist in the task. The process used for stake removal consisted of three steps: (1) the loader bucket was lowered; (2) the fence was wound around the bucket by the two laborers; and (3) the bucket was raised to pull the stake from the ground.

While removing what was apparently the third stake of the morning, the loader tipped forwards while the bucket was in the raised position. In an attempt to stabilize the equipment, the operator lowered the bucket. At the same time, the victim, who was to the front and side of the loader, slipped or tripped and fell under the bucket. He was struck in the chest by the descending bucket and died later in surgery from injuries he suffered to his chest.

CAUSE OF DEATH

The cause of death listed on the death certificate was traumatic chest injuries.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Before operating heavy equipment around other workers, operators should be thoroughly trained and competent in the various tasks the equipment may be used for. In addition, the operator must be capable of recognizing possible hazards that may result during these different procedures. This recommendation is in accordance with 29 CFR 1926.21(b)(2).

Discussion: The operator of the case skid steer loader was an experienced operator, but not in the specific procedure being performed at the time of the incident. He was facing down a sloped bank with other workers in front of him. He may have realized that there was a possibility of the loader tipping forward because of the slope, but was not familiar with the operation and could not anticipate to what degree the equipment would react in those circumstances. In this case, clearing the area of workers while the bucket was being raised and being maintained in a raised position would have been appropriate. Only after the bucket was once again in a lowered, stable position should the workers

have been allowed to approach the loader.

Recommendation #2: Workers performing tasks in the vicinity of or with the assistance of heavy equipment should be instructed on associated hazards and methods to avoid personal injury.

Discussion: Landscape laborers had instruction only on how to perform their assigned job. Since it was necessary to work around heavy equipment, instruction on the associated hazards was warranted. The overgrowth surrounding the drainage pond was clearly a slipping and tripping hazard. This condition was especially hazardous and to be avoided in light of the equipment being used during the fence removal process. Again, clearing the area around the loader during hazardous periods (i.e., when the bucket was being raised or lowered) would have been a simple, effective practice to reduce the likelihood of any unanticipated incident occurring.

REFERENCES

1. Office of the Federal Register, Code of Federal Regulations, Labor, 29 CFR Part 1926.21(b)(2), U.S. Department of Labor, Occupational Safety and Health Administration, Washington, D.C., July 1, 1991.