



Investigation Report

Worker Fatally Injured After Being Buried by Street Sweepings

April 22, 2015

F-OHS-089427-3A56D

March 2018

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The contents of this report

This document reports Occupational Health and Safety's (OHS) investigation of a fatal incident that occurred in April 2015. It begins with a short summary of what happened. The rest of the report covers this same information in greater detail.

Incident summary

A driver was unloading street sweepings from a dump truck. The tail gate of the truck box did not open. The driver exited the truck and approached the rear of the truck to investigate, the tail gate opened and the material poured forth, burying the driver. The driver was discovered by a supervisor who called Emergency Medical Services (EMS). The driver was transported by EMS to the Royal Alexandra Hospital. Five days later the worker was pronounced deceased.

Background information

The City of Edmonton Roadway Maintenance was the employer of the deceased driver. The City of Edmonton employs approximately 10 000 people and is divided into multiple sectors. The driver's original hire date with the City of Edmonton was in 2006. In 2008, the driver gained the position of labourer with Roadways Maintenance. In 2011, the driver changed job classification to truck driver where the driver remained until the incident date. In 2012, the driver had received training for this position, job mentorship and held a valid driver's license.

On the day of the incident, the driver's job task was to empty the dump truck of street sweepings from road cleanup into the yard so the material could be recycled and reused the following year.

Equipment and materials

Dump truck body

2008 Diamond SPEC 7400 SBA 6X4 (SF625)

The truck used to collect street sweepings was also used as a sander throughout the winter. Different boxes were installed on the back of the truck for each of these two activities. The truck had recently been converted from the sander box to the dump truck box prior to the incident. The dump truck box was designed and installed by City of Edmonton engineers (Figure 1 and 3).

The street sweepings in the dump truck box exerted pressure on the tail gate while the box was raised. The following is an excerpt from the Agreed Statement of Facts with a greater explanation:

The dump truck was a 2008 Diamond International truck. Engineers from the City of Edmonton had designed and installed the bed of the dump truck along with other related machinery. The truck was used to move street sweepings in the summer and as a sander truck in the winter. Different beds or boxes were installed on the back of the truck for each of these two activities. The truck had very recently been converted from the sander box to the dump truck box prior the incident.

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Two main mechanisms allowed the dump truck to operate. The dump truck bed could be raised using the first mechanism. The second mechanism was a lock that allowed the end gate to open. Two air-operated latches kept the end gate locked closed unless a switch in the cab was activated. Once the switch was activated, the latches would open if the air compressors in the truck were maintaining a pressure of between approximately 80 pounds per square inch (psi) and 120 psi. If the pressure in the truck's air system fell below 60 psi, an audible alarm would sound. Thus, the operator of a truck could press the switch to open the end gate, and, if the pressure in the truck's air system was between 60 psi and approximately 80 psi, the gate would neither open nor would any alarm go off indicating that the gate was not opening due to a lack of pressure. Further, the City of Edmonton had not informed dump truck operators that the end gate latches worked in this fashion.

Upon inspection following the incident, the air compressor system in the truck that the driver was driving was operating within the allowable maintenance limits for the system. However, leaks were present in the air system that may have hampered the truck system's ability to pressure back up after air was used in the operation of the truck. Air pressure may be expended as operators backed up hills to dump their loads as they would normally release air from their air suspensions and might use parts of their braking systems that required air.

The City of Edmonton did not have any written policies detailing the procedures that City of Edmonton employees were to use to dump loads from dump trucks. The City of Edmonton did have such policies for contractors.



Figure 1. Front view of dump truck involved in the incident.

Pickup truck

The lighting at the site was provided from two sources. A pickup truck with a portable light stand in the bed shone from the base of the hill to the top (Figure 2). The second source of light was the lights from the front end loader used to move the sweepings.



Figure 2. Truck was used to hold the lighting and generator for the worksite.



Figure 3. Overall side view of incident scene.

Sequence of events

On April 22, 2015, at 7:00 p.m., a City of Edmonton dump truck driver (driver) arrived at 13003 56 Street office. The shift supervisor (supervisor) and crew conducted a pre-job meeting. After the meeting, the crew and the driver began picking up street sweepings with a dump truck from the road clean up on 132 Avenue between 97 and 127 Streets, then proceeded to dump them at the Kennedale Storage Yard located at 13014 50A Street.

At approximately 10:17 p.m., the supervisor went to the Kennedale Storage Yard and observed the driver at the dump site with the dump truck box raised ready to dump the sweepings within the box. The dump truck was backed up the hill where the sweepings were to be dumped. From the truck, the supervisor observed the driver not wearing a hard hat. Hard hats were required personal protective equipment (PPE). The supervisor wanted to get the driver's attention and direct the driver to put a hard hat back on. The supervisor lost visual continuity of the driver and a few seconds later heard the box tail gate release.

The supervisor drove the truck up the hill to the front of the dump truck. The supervisor exited the truck to look for the driver but could not see the driver around the area. The supervisor thought that the driver might be around the side of the dump truck but could not find the driver.

The supervisor then went to the back of the dump truck and did not see the driver. The supervisor saw the tail gate sitting on the back of the pile as the contents of the dump truck had spilled out. After looking more closely at the pile of street sweepings, the supervisor noticed two

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fingers sticking out of the pile. The supervisor then got inside the dump truck and moved it forward approximately 3 metres so the supervisor could begin to dig out the driver from the pile.

The supervisor began yelling for help from workers on site and continued trying to dig the driver out of the pile of street sweepings. More workers arrived on site to assist in the rescue efforts and performed first aid and cardiopulmonary resuscitation (CPR) on the unresponsive driver.

At 10:27 p.m., EMS were called and one ambulance drove by the incident location entrance. The EMS arrived on site at 10:36 p.m. where they found the driver to be pulseless. After being treated by paramedics, the driver regained a heart rate and began breathing through a ventilator.

The driver was transported to the Royal Alexandra Hospital and two days later was transferred to the University of Alberta. On April 28, 2015, the driver was taken off life support and succumbed to the injuries.

On April 23, 2015, at 7:20 a.m., the incident was reported to OHS.

Completion

A review for enforcement action was completed on June 17, 2015, and it was determined that the file would be referred to Alberta Justice for review. The entire file was sent to Alberta Justice on March 30, 2016. Charges were laid on February 16, 2017. On March 5, 2018, the City of Edmonton pled guilty to Section 189 of the OHS Code, as an employer, for failing to take all reasonable steps to ensure, where a worker may be injured if material was dislodged, moved or spilled, that the material was contained, restrained or protected to eliminate the potential danger. They were fined \$85,500 inclusive of the 15% Victim Fine Surcharge. In addition, they were ordered under the *OHS Act* Section 41.1 to pay \$214 500 in favour of the Alberta Motor Transportation Association for equipment competencies for aggregate hauling equipment safety training development and delivery.

This investigation was closed on March 6, 2018.

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Signatures

ORIGINAL REPORT SIGNED

March 9, 2018

Lead Investigator

Date

ORIGINAL REPORT SIGNED

March 9, 2018

Manager

Date

ORIGINAL REPORT SIGNED

March 9, 2018

Director

Date