

## Two truck drivers die buried by major landslide in a quarry

A hydraulic shovel operator was excavating on the edge of the quarry in order to relocate the haul road. While he was digging and loading two trucks with overburden, a major landslide occurred, burying the three workers and their equipment at the bottom of the quarry. Despite his injuries, the hydraulic shovel operator managed to get out of his machine and reach safety. The two truck drivers were found buried two days later.

### Fatal Accident

**Date:** January 29, 2013

**Category:** Quarry

**Task:** Transportation of excavated material

**Position:** Truck driver

### Causes of the Accident

- Excavation work done on a site that was susceptible to landslides triggered the movement of earth that buried two truck drivers and a hydraulic shovel operator at the bottom of the quarry.
- The planning and supervision of the quarry expansion were inadequate, specifically because expansion work was being performed when the impact on soil stability was unknown.



Photo source: MTQ

### Preventative Measures

**Obtain the following three documents before performing excavation work in an open-pit mine less than 100 metres from a body of water or loose soil that may liquefy:**

- Engineer's plans and specifications
- An investigation of the properties of the rock mass to be excavated
- An investigation of hydrogeological conditions

**Analyze the risks associated with the nature of the soil by means of a geotechnical investigation and a statement from an engineer on the excavation method**

- In the risk analysis, include physical constraints (traffic lanes, materials storage, placement of overhead power lines, buildings, etc.) and the excavation method.

**Prepare written instructions for digging and give them to the on-site work manager and the earthmover operator**

- Ensure that the instructions are clear, precise and accessible at all times on site, and that they include safety measures to be implemented in order to carry out work.

**Ensure work is appropriately supervised**

- Check that the ground conditions are identical to the expected conditions and that workers follow the instructions.

## Additional Information

### Regulations

- Regulation respecting occupational health and safety in mines, sections 77 and 78.
  - Available online or for purchase at [www.publicationsduquebec.gouv.qc.ca](http://www.publicationsduquebec.gouv.qc.ca)

### Other documents

- Commission de la santé et de la sécurité du travail, Direction régionale de Lanaudière, *Rapport d'enquête sur accident mortel survenu le 29 janvier 2013*. Québec: CSST, 2014 Code: EN-004008
  - Available online at <http://www.centredoc.csst.qc.ca/pdf/ed004008.pdf>
- Ministère des Transports du Québec, Service de la géotechnique et de la géologie, *Glissement de terrain du 29 janvier 2013. Étude géotechnique*, Québec: MTQ, 2014 MT.03.60040.12.01
  - Available online at <http://www.centredoc.csst.qc.ca/pdf/ad004008.pdf>
- Commission de la santé et de la sécurité du travail, Direction de la prévention-inspection, *Pour mieux exécuter les travaux de creusement, d'excavation et de tranchée : aide-mémoire pour l'employeur : version 2013*, Québec: CSST, 2013, 48 pp. (DC 200-2301)
  - Available online at [http://www.csst.qc.ca/publications/200/Documents/DC200\\_2301web.pdf](http://www.csst.qc.ca/publications/200/Documents/DC200_2301web.pdf)

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