

# Serious accident involving an articulated water cart.

## Mines safety alert no. 361

### What happened?

In September 2018 an operator loaded an articulated water cart (Cat 740B) and was moving up a ramp on a mine's tailings dam. The engine then stalled for unknown reasons, and the vehicle ran away backwards down the face of the tailings dam wall, overturning at the bottom and pinning the operator in the cab.

The operator was hospitalised for assessment and treatment of fractures and bruising.

### How did it happen?

When the engine stalled, the pump supplying hydraulic pressure to the brake system stopped. Despite this, a further two braking options should still have been available to control the water cart:

- the secondary service brake system, normally supplied by brake accumulator pressure in an emergency situation, and
- the park brake system.

In this instance the service brake accumulator pressure was too low to provide effective braking.

It is thought the operator did not have enough time to activate the park brake switch on the dashboard before losing control of the water cart.



Brake Accumulator

### Recommendations:

- Machines using accumulators to maintain service braking under hydraulic pump failure or engine stalling, should have accumulator dry nitrogen pre-charge pressures checked by trained personnel every 250 hours.
- In addition to usual park and service brake tests, service brake accumulator functionality should be checked daily as part of the machine prestart regime.
- Consult with the Original Equipment Manufacturer (OEM) for specific procedures on brake accumulator pre-charge and functionality testing.
- Steering system accumulators operate similarly to brake system accumulators, allowing operation of the steering hydraulic system under hydraulic pump failure or engine stalling. Steering system accumulators should be inspected and tested in accordance with OEM procedures and recommendations.

