

Investigation Report
Low Voltage Electrocution

Report No-031199-9A1A8

August 26, 2013

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Final Report

The contents of this report

This document reports OHS' investigation of a low voltage electrocution in September 2012. It begins with a short summary of what happened. The rest of the report covers this same information in much greater detail.

Incident summary

Two workers were working at a new drilling site to set up the sewage collection system for the well site trailers. At the time of the incident, worker 1 was connecting a sewage hose to the PVC septic pipe on the underside of a small Atco trailer. Two workers from the drilling rig crew had entered the site generating unit to determine why their trailers were not energized. The workers turned the main breaker off and on until it was determined that the small Atco trailer had been energized. Moments later, worker 1 was found under the small Atco trailer unresponsive. First aid and CPR protocols were initiated and the worker was transferred to EMS. EMS pronounced the worker deceased while en route to the hospital.

Background information

Strategic Oil & Gas Ltd.(Strategic) is a junior oil and gas company based in Calgary, Alberta, Canada. The primary business is upstream oil and gas exploration. Strategic is the prime contractor for the Steen River incident site 10-28-122-21 W5M. Strategic contracted Akita Drilling Ltd. (Akita) and Pinnacle Services Ltd. (Pinnacle) to provide drilling service and auxiliary site equipment.

Remote Sewer Systems Ltd. (Remote Sewer) rents portable enclosed heated sewage treatment plants and heated sewage holding tanks designed for use by remote camps. Remote Sewer was contracted by Pinnacle to provide the disconnection of the septic systems at one Strategic well site, and reconnect the same septic system at the new well site location.

Pinnacle Services Ltd. (Pinnacle) in High Level Alberta provides well site auxiliary equipment such as office/living trailers and generator units. Pinnacle Services Ltd. was contracted by Strategic to provide 3 well site work/live trailers, a generator unit, sewage lift pumps and associated connecting parts.

Dale's Trucking was contracted by Strategic to provide water hauling services for the Steen River field operations.

Ross Energy Services Ltd. (Ross Energy) is a full-service engineering, project management and well-site supervision consulting firm that specializes in servicing drilling, completion, optimization, and abandonment sections of the oil and gas industry. Ross Energy was hired by Strategic to provide well site supervision at the incident site. The well site supervisor for this location was employed by Ross Energy.

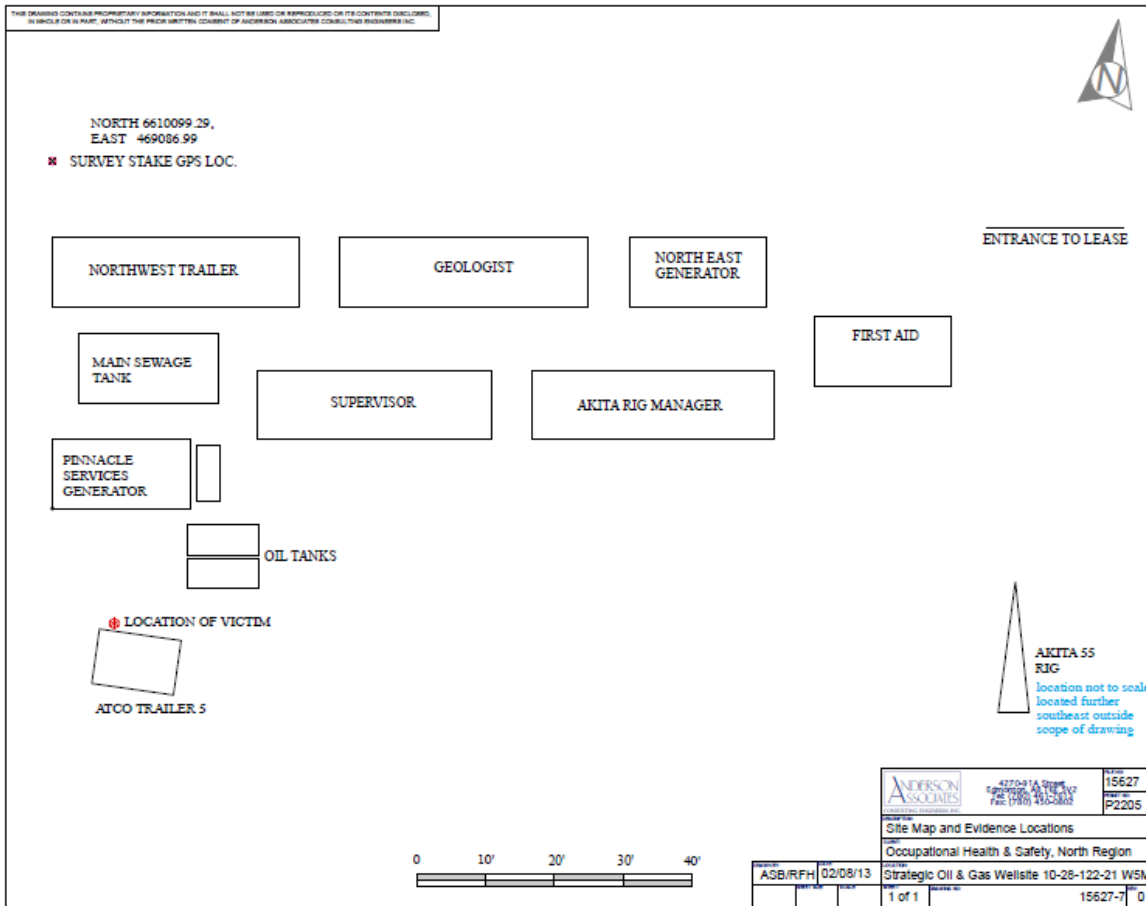
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Akita Drilling Ltd. (Akita) is a premier oil and gas drilling contractor with drilling operations throughout Western and Northern Canada. Strategic Oil & Gas Ltd. contracted Akita Drilling Ltd. to provide drilling equipment and specialized drilling services on the new well site.

Equipment and materials

Figure 1



Site drawing for LSD 10-28-122-21(Drawing provided by Anderson & Associates).

Trailer 5

The trailer 5 was owned and used by Dale's Trucking and was brought onto the Strategic new well site on September 28, 2012 to be used as onsite accommodation/office.

Figure 2

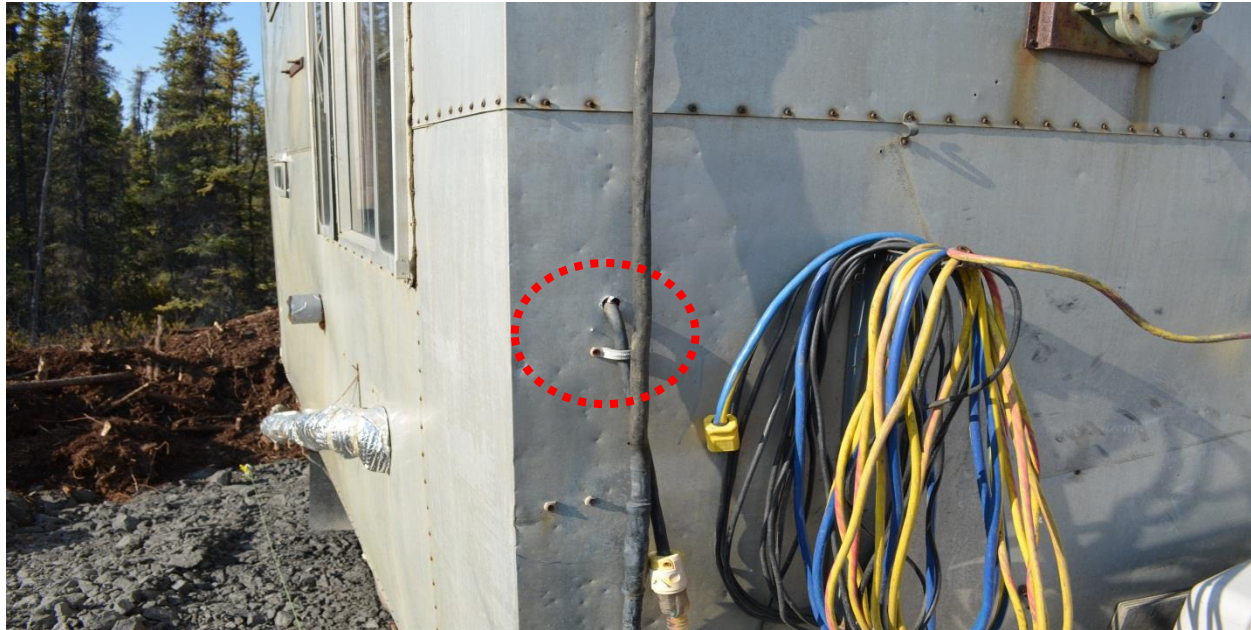


*Trailer 5, 1960 PSV Trailer, manufacturer ATCO VIN *****, License Plate ******

Electric cable fed externally through metal trailer wall

The purpose of this electric cable was to provide power to trailer 5 from the main electrical source. This electrical cable was connected externally to the yellow extension cord that was run and plugged into the main electrical source; the yellow extension cord was connected to the electric cable, then run through the metal wall of the trailer 5, with no protection against sharp edges.

Figure 3 & 4



The red circle indicates the black cord run through the wall of the trailer.

Stamford AC Generator Set

This generating set was assembled by Pinnacle and supplied to Strategic with one ground rod.

Figure 5



Pinnacle Rentals Stamford AC Generator Set the main electrical source (generator unit 5).

Sequence of events

On September 27, 2012, Remote Sewer Systems Ltd. was contacted by Pinnacle to disconnect the sewer collection system located at a Strategic Oil & Gas Ltd. well site, and reconnect the sewer collection system for the well site trailers at the new Strategic well site.

At 8:00 a.m. on September 28, 2012, 2 Remote Sewer workers met with the Strategic well site supervisor at the site camp. Both workers were directed to disconnect the sewer system from the trailers at the current rig site.

That same morning, Strategic Oil & Gas well site supervisor held a 15 minute safety meeting with Akita Drilling day shift workers, D&D Trucking workers, and Pinnacle Logging workers. The documentation from this meeting showed that the work that was reviewed was the move of the rig and auxiliary site equipment. There was no discussion regarding the setup of the site auxiliary equipment or how the equipment was to be energized.

At 11:30 a.m., Remote Sewer worker 1 and worker 2 returned to the Strategic Oil & Gas main camp site where they had lunch and waited until the trailers and equipment were moved to the new rig site.

At 5:00 p.m., the 2 Remote Sewer workers drove to the new rig site, and after observing that the trailers appeared to be in place, started to connect the sewer systems and electrical panels to each of the trailers. Worker 1 proceeded with running the electrical cords from generator unit 5 to the main sewer collection system and the lift pumps for each of the trailers. Worker 2 was working on connecting the sewage lift pumps to the trailers.

At 7:00 p.m., the water truck hauler drove in and set up trailer 5 at the new well site. The water truck hauler then connected trailer 5 with a yellow extension cord directly into generator unit 5.

Figure 6

A indicates the yellow extension cord that was used to connect trailer 5 to generator 5

Between 7:10 p.m. and 7:30 p.m., the Akita rig manager started up the motor of the generator 5 and turned on the power at the main breaker.

The water truck hauler visually confirmed that there was power coming to the trailer 5, and then walked out of the main electrical source (generator unit 5) towards his trailer.

Within a matter of minutes, the water truck hauler found worker 1 under the trailer 5, unresponsive. The water truck hauler notified Worker 2 and the Akita rig manager. Worker 2 attempted to pull worker 1 out from under the trailer with the help of the Akita rig manager. The Akita rig manager directed another worker to drop the power in generator 5.

Figure 7



Red circle indicates the location where worker 1 was found, under trailer 5.

Within minutes of worker 1 being removed from under trailer 5, the site medic arrived, and initiated CPR.

The site medic transported worker 1 in the industrial ambulance, and met up with EMS on Highway 35. EMS pronounced worker 1 deceased enroute to the hospital.

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Completion

A preliminary review was conducted by Alberta Justice of this file in January 2013 and requested the file for full review. Charges were recommended on this file, and were sworn in September 2014. Charges were stayed by Alberta Justice in April 2015.

Signatures

ORIGINAL REPORT SIGNED

June 9, 2015

Lead Investigator

Date

ORIGINAL REPORT SIGNED

May 25, 2015

Manager

Date

ORIGINAL REPORT SIGNED

May 28, 2015

Director

Date

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