

Investigation Report

Worker fatally injured after exposure to Hydrogen Sulphide

January 27, 2018

Report No-F-OHS-137943-3AC68

November 2020

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The contents of this report

This document reports Occupational Health and Safety's investigation of worker fatally injured in January 2018. It begins with a short summary of what happened. The rest of the report covers this same information in greater detail.

Incident summary

An operator was found unresponsive at the Simonette Oil Battery (located approximately 80 kilometres (km) northwest of Fox Creek). The operator's body was found lying inside a partially open utilidor where a valve was open and gas escaping. The battery is a sour gas (oil & gas with hydrogen sulphide) site. The Medical Examiner report stated the cause of death was due to hydrogen sulphide exposure.

Background information

Paramount Resources Ltd. (Paramount) is a Canadian energy company founded in 1976, based in Calgary, Alberta with 350 employees. Paramount explores for, develops, produces and markets natural gas, oil and natural gas liquids in Alberta, British Columbia, Saskatchewan and the Northwest Territories. Paramount acquired the site during a merger and acquisition (M&A) of Apache Canada and Trilogy Energy Corp (Trilogy) in 2017.

Operator 1 (fatally injured worker) had been working to unblock a needle valve of the cyclone separator where methanol was injected into the dump line. Operators were responsible for monitoring the facility, maintenance, well checks, and maintaining wells in the field. Operator 1 had 30 years of experience as a production field operator. Operator 1 had worked at the Simonette Oil Battery for 10 years as a senior operator with Trilogy; they stayed on as a Paramount employee and had many years of experience as a production operator in sour (hydrogen sulphide) service. Operator 1 had completed mandated safety training.

Operator 2 had been working at another location of the lease site completing well checks. Operator 2 came back to the Simonette Oil Battery to find Operator 1 unresponsive and partially inside the opened cyclone separator utilidor. Operator 2 had 35 years' experience in the oil and gas industry, predominantly in sour service, and was a contract operator to Paramount through Rosaka DBO Inc. Operator 2 had completed mandated safety training throughout their oil and gas career.

Equipment and materials

The Simonette Oil Battery was an upstream crude oil and gas collection and processing facility. The Battery was composed of above ground storage tanks (ASTs) used to hold crude oil from producing wells in the area. Additional treatment (dehydration, sweetening, water and sedimentation separation, etc.) equipment was used to make the crude oil ready for sale to the pipeline system.

The cyclone separator was attached to the dehydration building and was used to remove water from the oil/gas before additional processing (Figure 1).



Figure 1. Utilidor cyclone separator where Operator 1 was found.

Sequence of events

The operators were assigned to the Simonette Oil Battery in August of 2017, on a long term rotating shift. Operator 2 had left the battery to work on a compressor around 7:30 a.m. the morning of January 27, 2018. Operator 2 returned to the battery just after 1:00 p.m. and expected to find Operator 1 in the control room. When Operator 2 did not find Operator 1's truck parked there, Operator 2 drove around until they found Operator 1's truck by the dehydration building (Figure 2).



Figure 2. Operator 1's work truck near the dehydration building and the cyclone separator.

Operator 2 then got out of their truck and heard “gas blowing” from an open valve. Operator 2 looked for Operator 1 in the dehydration building, first at the north door, and then at the door near the utilidor cyclone separator. Operator 2 then saw Operator 1 near the utilidor cyclone separator (Figure 3).



Figure 3. Door where Operator 2 first saw Operator 1 unresponsive partially inside the cyclone separator utilidor.

A. Approximate position of Operator 1 inside the cyclone-separator utilidor

Operator 1 was lying on the ground inside the cyclone separator utilidor. Operator 2 went and shook Operator 1 and got no response, while hearing gas escaping from an open valve. Operator 2 then called their supervisor, actuated the battery “emergency shut down”, put on their self-contained breathing apparatus (SCBA), closed the open valve, removed panel doors to the utilidor, removed their SCBA, and attended to Operator 1 (Figures 4 and 5).

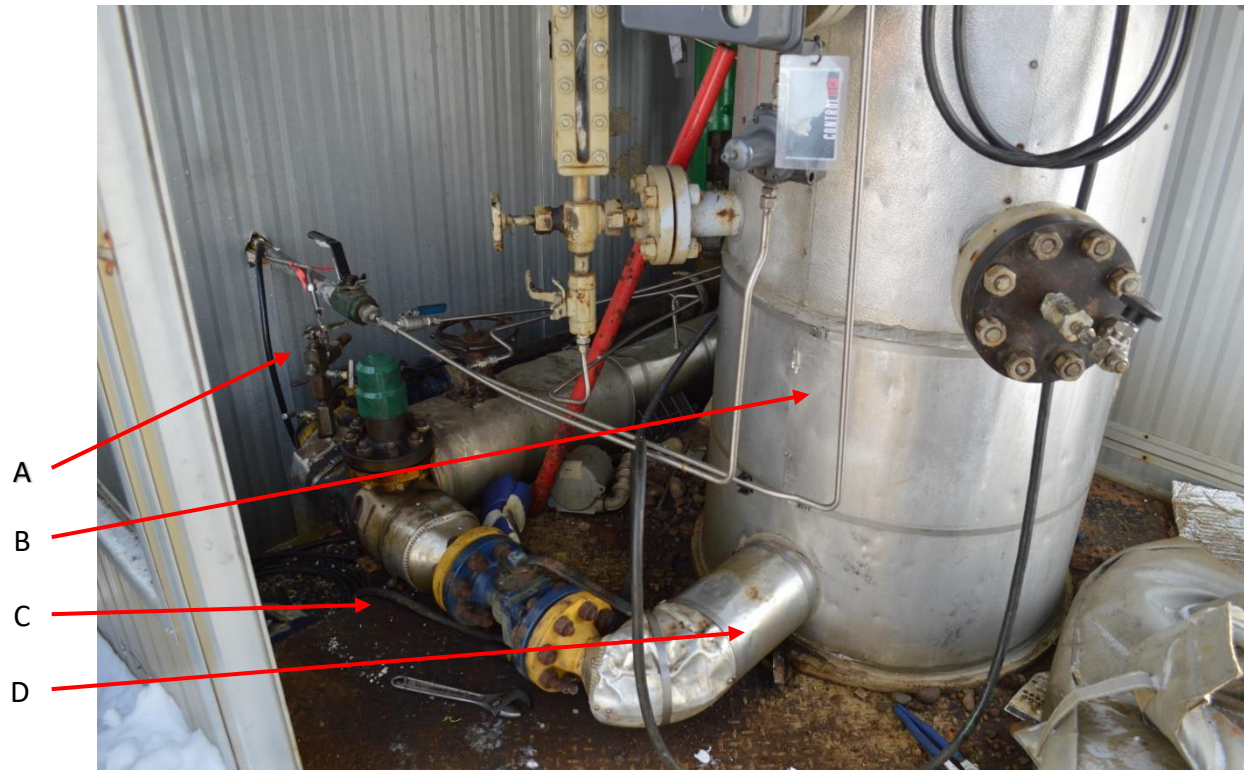


Figure 4. Valve piping area Operator 1 was working on.

- A. Open needle valve (for methanol injection)*
- B. Cyclone separator*
- C. Area where Operator 1 was found lying*
- D. Dump line (separated water removed from system)*



Figure 5. Valve Operator 1 was working to unblock.

A. Open needle valve (methanol injection into dump line)

Emergency Medical Services arrived at the scene and attempted to resuscitate Operator 1. Due to exposure to hydrogen sulphide, Operator 1 could not be resuscitated and was pronounced deceased at the scene.

Completion

A review for enforcement action was completed on July 19, 2019, and it was determined that the file would be referred to Alberta Justice for review. The entire file was sent to Alberta Justice on September 19, 2019. On January 24, 2020 Alberta Justice returned a decision of “no charges recommended”.

Final Report

Signatures

ORIGINAL REPORT SIGNED

November 6, 2020

Lead Investigator

Date

ORIGINAL REPORT SIGNED

November 6, 2020

Manager

Date

ORIGINAL REPORT SIGNED

November 6, 2020

Director

Date