

Occupational Health and Safety

Fatality Report

**WORKER CRUSHED BY PUMPJACK
COUNTERWEIGHT**

Type of Incident: FATAL

Date of Incident: November 9, 2009

Alberta 

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SECTION 1.0 DATE AND TIME OF INCIDENT

1.1 The incident occurred on November 9, 2009 at approximately 10:00 a.m.

SECTION 2.0 NAME AND ADDRESS OF PRINCIPAL PARTIES

2.1 Owner

2.1.1 Sifton Energy Inc.
1100, 700 – 4 Avenue S.W.
Calgary, Alberta
T2P 3J4

2.2 Prime Contractor

2.2.1 Not applicable

2.3 Contractor(s)

2.3.1 DD Contract Operating Ltd.
RR 1
Fallun, AB
T0C 1H0

2.3.2 Raven Oil and Gas Operating Ltd.
RR 2
Bluffton, AB
T0C 0M0

2.4 Employer

2.4.1 Konan Oilfield Services Ltd.
RR 2 Site 3
Westerose, AB
T0C 2V0

2.5 Supplier

2.5.1 Not applicable

2.6 Worker

2.6.1 The Labourer [REDACTED]
[REDACTED]
Wetaskiwin, Alberta
[REDACTED]

2.7 Others

2.7.1 Not applicable

SECTION 3.0 DESCRIPTIONS OF PRINCIPAL PARTIES

3.1 Owner

3.1.1 Sifton Energy Inc's. head office is located in Calgary, Alberta. Sifton Energy Inc. is a private junior oil and gas producer focusing their operations on horizontal oil resources in Western Canada. These operations cover the Pembina Cardium and Belly River light oil fields including Peace River, Edmonton, and Morinville, Joffre/Mikwan, Cereal and Skiff regions.

3.2 Prime Contractor

3.2.1 Not applicable

3.3 Contractor

3.3.1 Contract Operating Ltd. [REDACTED] was contracted to Raven Oil and Gas Ltd. and was representing Raven Oil and Gas Ltd. as the acting relief well operator on the day of the incident.

3.3.2 Raven Oil and Gas Operating Ltd. [REDACTED] was contracted to Sifton Energy Inc. and was representing Sifton Energy Inc. also as the relief well operator but they were not present on the day of the incident.

3.4 Employer

3.4.1 Konan Oilfield Services Ltd. is a general construction contractor working primarily in the oil and gas sector. The company was conducting insulation activities at the time of the incident. Konan Oilfield Services Ltd. has been in the oil and gas construction field for over 25 years.

3.5 Supplier

3.5.1 Not applicable

3.6 Worker

3.6.1 The Labourer [REDACTED] had worked as a labourer in oilfield construction activities for approximately 8 years and most recently with Konan Oilfield Services Ltd. The Labourer [REDACTED] did not have a specific discipline in oilfield construction.

SECTION 4.0 LOCATION OF INCIDENT

4.1 The incident occurred on the Sifton Energy Inc. lease located at LSD: 8-16-47-3 W5 in Leduc County approximately 26 km southwest of Warburg, Alberta. (Attachment A – Map).

SECTION 5.0 EQUIPMENT, MATERIAL AND OBSERVATIONS

5.1 Equipment and Material

5.1.1 HG Walking Beam Pumping Unit,

5.1.1.1 Model # CW 228-213-100, Pumpjack specifications 7.5 m X 2.22 m X 7.06 m. The pump was commissioned on October 2009 and produced an average of 32 m³ per day. (Attachment C – Photographs # 1).

5.1.1.2 The oil, water and gas produced from LSD 6-16-47-3 W5 flowed to a test satellite located at LSD 02-026-47-03 W5 and was pumped to the main battery located at 16-09-047-03 W5.

5.2 Observations

5.2.1 Occupational Health and Safety (OHS) Investigators arrived at the site on November 9, 2009 at approximately 3:12 p.m. The scene was secured by the Breton RCMP who remained on site until OHS arrived. The RCMP contacts debriefed OHS on the site condition and the victims' whereabouts.

5.2.2 The HG Walking Beam Pump Jack was observed with the clutch disengaged and the handbrake disengaged. The gas motor was turned off. Blood smears were noted on two gas valve handles and the belt drive cover. No blood was noted on the clutch handle. (Attachment C – Photograph #2).

5.2.3 The brake safety on the HG Walking Beam Pump was not engaged. Other lock out devices was not installed on the HG Walking Beam Pump. (Attachment C – Photographs #3, #4).

5.2.4 A white hardhat near the Labourer [REDACTED] was observed with a 10 cm crack on the left side. (Attachment C – Photographs #11)

5.2.5 Safety glasses were also found with a bend in the left arm closest to the temple or rim of the safety glasses. The bend in the arm was consistent with where the worker was struck on the left side of the head with the crank pin. (Attachment C – Photograph #12).

5.2.6 White plastic scrapings were found on the bottom right side of the crank pin and under the crank pin on the cement pad. The white plastic scrapings were consistent with marks found on the hardhat belonging to the Worker #2 [REDACTED]. (Attachment C – Photographs # 8, 9, and 10).

5.2.7 The approximate temperature for November 9, 2009 was 1.5 Degrees Celsius. Winds were from the north at 6 km/h. Skies were overcast.

SECTION 6.0 NARRATIVE DESCRIPTION OF THE INCIDENT

- 6.1 On November 9, 2009, The Site Supervisor [REDACTED] and the Labourer [REDACTED] went first to the Konan Construction Ltd's. shop at approximately 7:00 a.m. to pick up supplies for a series of jobs scheduled for that morning of November 9, 2009.
- 6.2 At approximately 8:00 a.m. Foreman [REDACTED] and Acting Well Relief Operator [REDACTED] arrived at lease site 08-16-047-03 W5. They received a permit issued by Acting Well Relief Operator [REDACTED] on behalf of the Lease Owner Sifton Energy Inc. to Konan Oilfield Services Ltd. for the pumpjack located at 06-16-047-3 W5; the down-hole or well location.
- 6.3 The Site Supervisor [REDACTED] and the Labourer [REDACTED] went to another lease site to address an insulation job taking approximately 1.0 hour at this location.
- 6.4 Once the first job was completed they proceeded to well location 06-16-047-3W5.
- 6.5 The Site Supervisor [REDACTED] and the Labourer [REDACTED] arrived at approximately 9:00 a.m. and met with the Foreman [REDACTED] and Acting Relief Well Operator [REDACTED].
- 6.6 The Site Supervisor [REDACTED] and the Labourer [REDACTED] disengaged the clutch of the pumpjack. The Site Supervisor [REDACTED] watched the rotation of the counterweight until it stopped. The Site Supervisor [REDACTED] indicated that the crank pin stopped at the 8:00 o'clock position. It was later determined that the brake was not engaged by the Labourer [REDACTED] at this time. (Attachment C – Photographs #2, #4)
- 6.7 Although the rotation had stopped, the motor was not shut off by either worker.
- 6.8 The Site Supervisor [REDACTED] and the Labourer [REDACTED] proceeded to remove old insulation coverings from the wellhead towards the motor of the pumpjack on the east side of the pumpjack.
- 6.9 Once all previously installed insulation was removed the Site Supervisor [REDACTED] and the Labourer [REDACTED] started adding heat tracing to the now exposed fuel gas piping.
- 6.10 Starting from the wellhead the Site Supervisor [REDACTED] and the Labourer [REDACTED] began wrapping the piping with new insulation. They proceeded north towards the motor on the east side. The Labourer [REDACTED] worked just ahead of the Site Supervisor [REDACTED] as they approached the fenced area of the crank pin and counterweight, where a length of the piping ran under the fenced area and below the cement pad. They were stuffing the insulation blanket in between the pad and the exposed piping. (Attachment C – Photograph #5)

- 6.11 The Site Supervisor [REDACTED] and the Labourer [REDACTED] had continued to work their way north towards the motor of the pumpjack on the east side of the pumpjack for approximately half an hour. As the two worked at arms length from one another the Site Supervisor [REDACTED] heard an unfamiliar sound. The Site Supervisor [REDACTED] turned to his right and found the Labourer [REDACTED] slumped to the ground bleeding from his head.
- 6.12 The incident occurred at approximately 9:45 a.m.
- 6.13 The Site Supervisor [REDACTED] pulled the Labourer [REDACTED] towards the south end of the pumpjack to provide cardio pulmonary resuscitation (CPR).
- 6.14 The Site Supervisor [REDACTED] called the Foreman [REDACTED] to notify him of the incident.
- 6.15 911 was contacted by the Site Supervisor [REDACTED]. He was unable to hear the 911 operator clearly so he went to shut off the valves supplying fuel gas to the motor of the pumpjack. (Attachment C – Photographs #6, 7)
- 6.16 The RCMP arrived at approximately 11:30 a.m. and shortly after the Foreman [REDACTED] arrived on site.
- 6.17 Also arriving at the site was Acting Well Relief Operator [REDACTED] and Firewater Inc. Operator [REDACTED].
- 6.18 EMS arrived on site at 11:49 a.m.
- 6.19 EMS attached a heart monitor to the Labourer [REDACTED] and determined that there were no life signs and pronounced him dead at the scene.
- 6.20 The RCMP secured the scene until OHS investigators attended the incident scene at approximately 3:15 p.m.

SECTION 7.0 ANALYSIS

7.1 Direct Cause

- 7.1.1 The Labourer [REDACTED] was fatally injured when he was struck on the left side of the head by the crank pin where counterweights attach to the pumpjack as he worked installing insulation in the area beside the counterweight.

7.2 Contributing Factors

- 7.2.1 The Site Supervisor [REDACTED] and the Labourer [REDACTED] did not manage and control the hazardous energy of the pumpjack's rotating counterweight. The Labourer [REDACTED] did not set the brake for the pumpjack to eliminate any accidental rotation of the counterweight.
- 7.2.2 The Site Supervisor [REDACTED] did not identify potential hazards while conducting a hazard assessment. Controls were not used for the hazard that was identified for the task of installing an insulating blanket around piping near the path of the rotating parts consisting of the pumpjack counterweight.
- 7.2.3 The Site Supervisor [REDACTED] did not confirm that the brake was set.
- 7.2.4 The Labourer [REDACTED] had not received any specific training for locking out the HG Walking Beam Pumping Unit.
- 7.2.5 The Hot Work Permit issued by the Acting Well Relief Operator [REDACTED] and noted only as "guarded not shut off" on the Sifton Energy Inc. Hot Work Permit #0201. The permit issued to Konan Oilfield Services Ltd. on November 8, 2009 did not identify hazards associated with work to be conducted on November 9, 2009.
- 7.2.6 A November 9, 2009 Sifton Energy Inc. Hot Work Permit was not issued.
- 7.2.7 Konan Oilfield Services Ltd. conducted their work under the Sifton Energy Inc. Health and Safety program, which included their lock out / tag out procedure. In this incident Konan Oilfield Services Ltd. did not follow the Sifton Energy Inc. lock out / tag out procedure, where maintenance work or servicing work was to be performed on energized equipment.
- 7.2.8 Under the direction of the investigating officer a test was requested to re-create the scenario reported to the RCMP by the Site Supervisor [REDACTED]. The Site Supervisor [REDACTED] reported that the counterweight hung up at the 8:00 o'clock position when the Labourer [REDACTED] disengaged the clutch. Attempts to stop the counterweight at the 8:00- 9:00 o'clock position by disengaging the clutch while not using the brake could not be recreated. The counterweight always rested at the 6:00 o'clock position or bottom of the counterweight rotation. This contradicts the statement provided to RCMP the Site Supervisor [REDACTED]. The Site Supervisor [REDACTED] indicated to RCMP that the counterweight swung down from a resting position of 8 o'clock; suddenly moving and striking the Labourer [REDACTED] in the head, as he worked directly under the path of

where the counterweight rotated.

SECTION 8.0 FOLLOW-UP/ ACTION TAKEN

8.1 Alberta Employment and Immigration; Occupational Health and Safety

- 8.1.1 Occupational Health and Safety Investigators conducted an investigation into the circumstances surrounding the incident.
- 8.1.2 Occupational Health and Safety issued orders to the employer, Konan Oilfield Services Ltd:
- To provide information in connection to the Occupational Health and Safety investigation.
 - To provide the future steps to be taken to prevent a worker from being injured during the task of insulating piping on pump jacks.
 - To provide the future steps to be taken to train workers on the principles of locking out equipment and how the companies lock out procedures will be reviewed with all workers who are affected by the procedure.

8.2 Industry

- 8.2.1 The Owner, Sifton Energy Inc. conducted an investigation into the circumstances of the incident and implemented measures to prevent a re-occurrence. Sifton Energy Inc. added appropriate guarding around the pumpjack counterweight preventing workers from entering underneath.
- 8.2.2 The employer, Konan Oilfield Services Ltd. provided lock out training for all new employees and ensured that workers will be competent to do the work or be under the direct supervision of a person competent to do the work.
- 8.2.3 The employer, Konan Oilfield Services Ltd. co-operated by providing information requested by Occupational Health and Safety during the investigation.

8.3 Additional Measures

- 8.3.1 No additional measures required.

SECTION 9.0 SIGNATURES

ORIGINAL REPORT SIGNED

Lead Investigator

Date

ORIGINAL REPORT SIGNED

Investigator

Date

ORIGINAL REPORT SIGNED

Manager

Date

ORIGINAL REPORT SIGNED

Regional Director, Central

Date

SECTION 10.0 ATTACHMENTS:

Attachment A

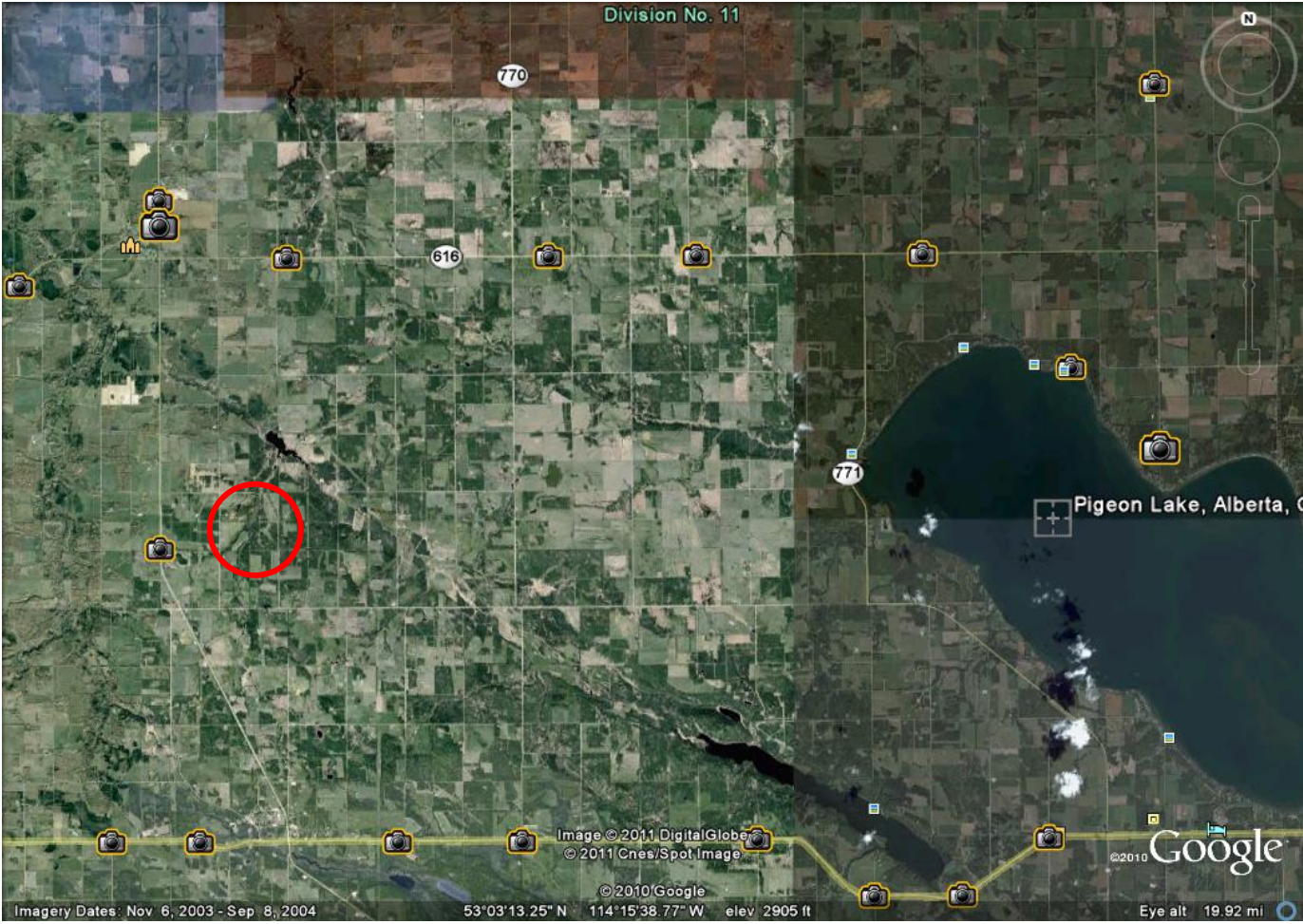
Map

Attachment B

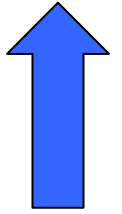
Diagrams or Sketch

Attachment C

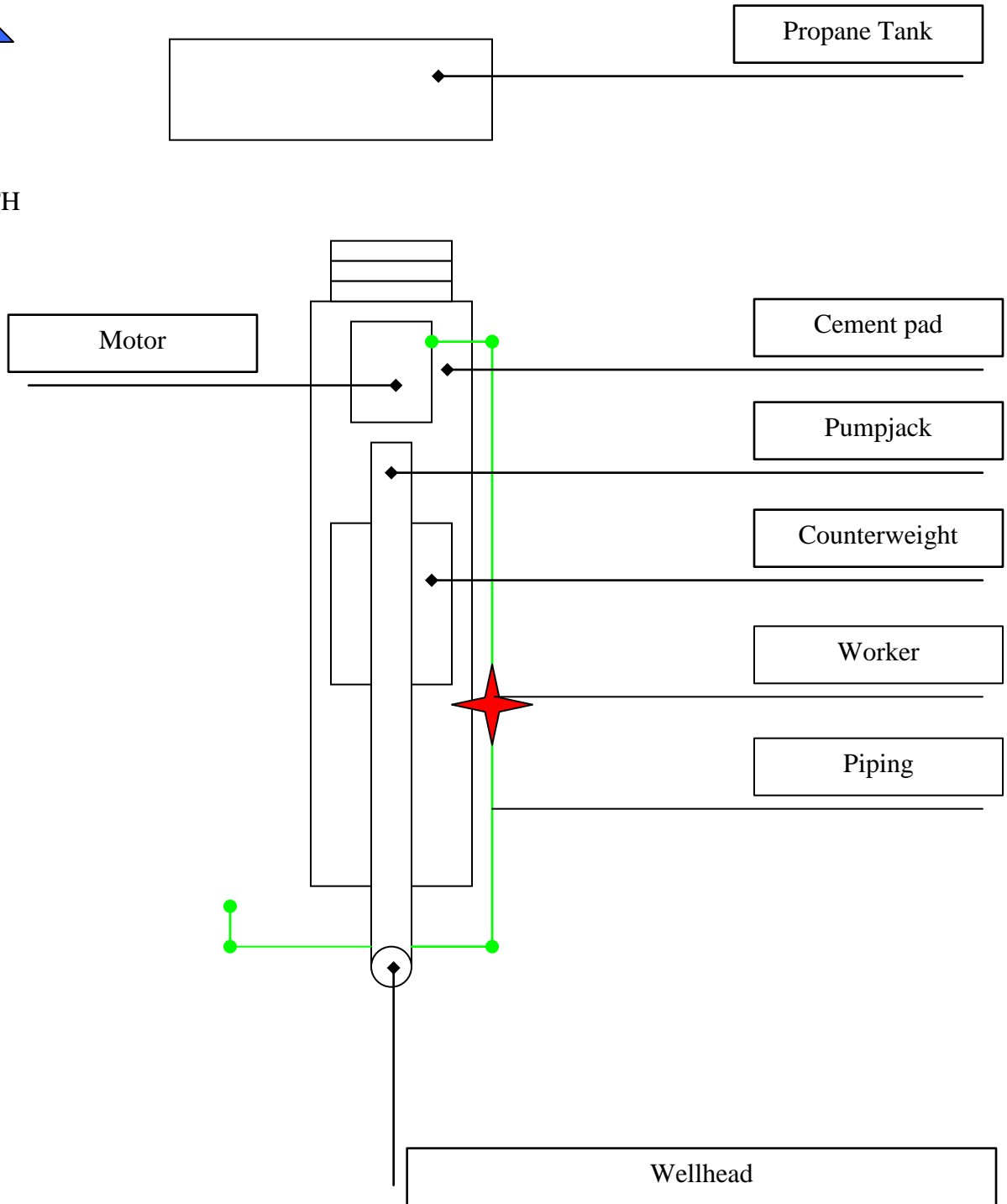
Photographs



Lease location West of Pigeon Lake LSD: 8-16-47-3 W5



NORTH





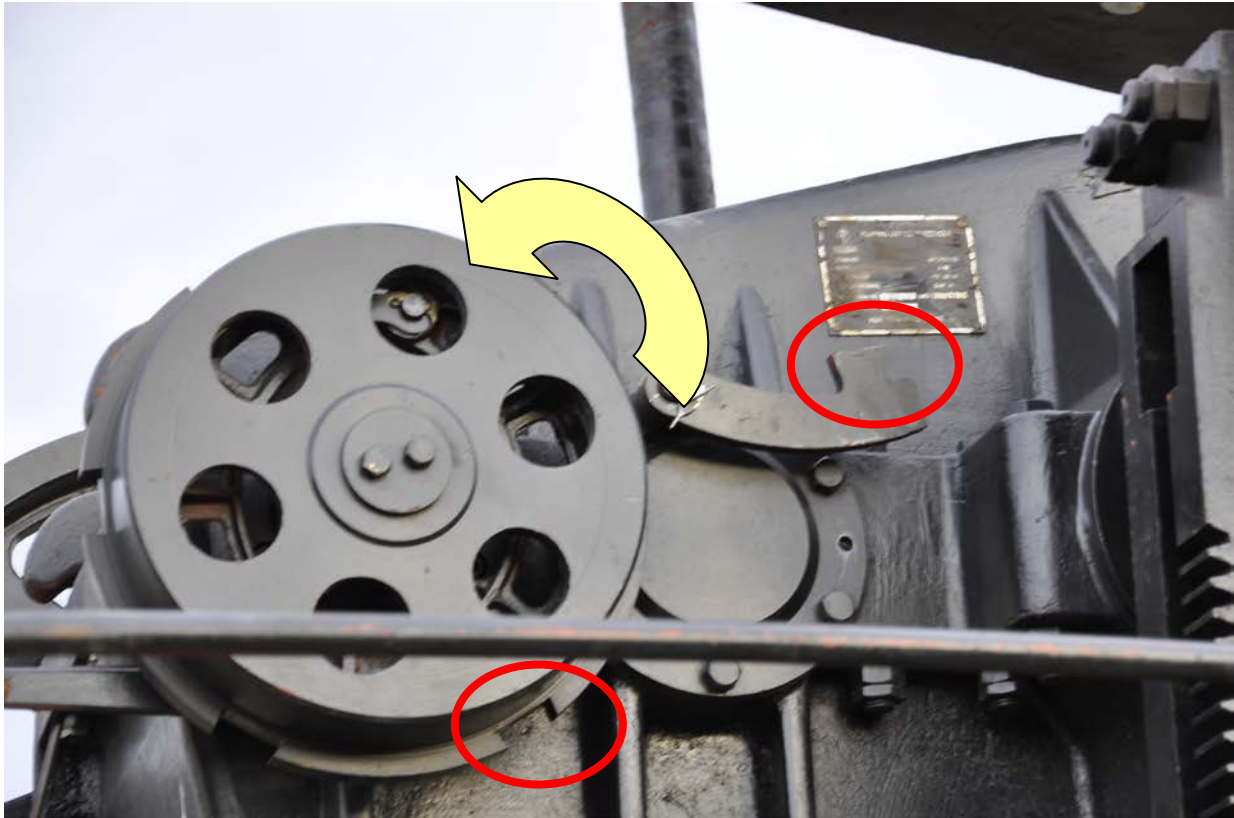
Photograph #1

Shows the HG Walking Beam Pumping Unit, looking northeast.



Photograph #2

Shows the clutch cover for the transmission was disengaged at the time of inspection. Note blood on the pulley cover.



Photograph #3

Shows that the lock out for the HG Walking Beam Pumping Unit was not engaged. The red circles denote the key and keyway. When the key is engaged with the keyway; the key acts as a lock to prevent the pump from turning.



Photograph #4

Shows the brake mechanism handle was in the vertical position. The handle in this position does not engage the brake for the HG Walking Beam Pumping Unit. The brake is engaged when in the horizontal position or the handle is down.



Photograph #5

The two workers were insulating the pipe running underneath the concrete pad. The Labourer [REDACTED] was working close to the counterweight when he was struck on the head.



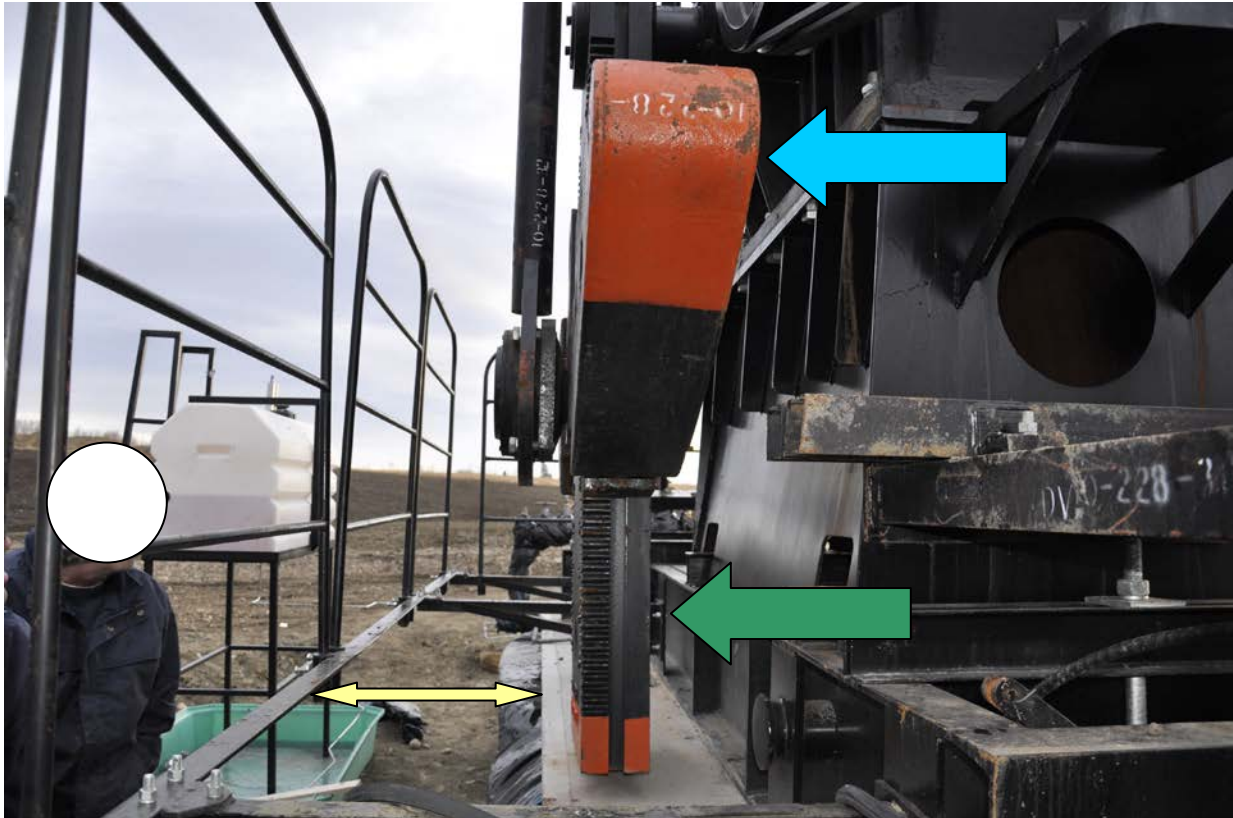
Photograph #6

After the incident the Site Supervisor [REDACTED] proceeded to shut off this valve that was the gas supply to the motor in order to hear the 911 operator.



Photograph # 7

The second in-line gas valve was also observed in the off position.



Photograph #8

The yellow arrow shows the position of the Labourer [REDACTED] when he was struck in the head while he worked next to the crank pin (green arrow). The blue arrow shows the counterweight attached to the crank pin.



Photograph #9

The yellow arrow shows the scraping that occurred to the Labourer's [REDACTED] [REDACTED] hard hat when he was struck in the head as he worked next to the crank pin.



Photograph #10

The yellow arrow shows the scraping that transferred to bottom right edge of the crank pin from the Labourer's [REDACTED] hard hat.



Photograph #11

The yellow arrow shows the crack found on the Labourer's [REDACTED] hard hat.

Alberta



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Photograph #12

The yellow arrow shows the safety glasses that were worn by the Labourer [REDACTED] [REDACTED] at the time of the incident.