

REMEDIATION MANAGEMENT HSSE Lessons Learned One-Pager



Type of Incident: Recordable Injury
Business Unit: Northwest Region
Location of Incident: BPSOU Butte, MT
Date/Time: December 13, 2007

Brief Account of Incident: On December 13, 2007, at approximately 2:00 p.m., a subcontractor drill owner/operator received injury to both eyes while the operator was in the process of shutting down the rig during installation of a monitoring well.

The rig was a 1979 model and had a valve control handle that is easy to torque. Additionally the casing hydraulic hose was in alignment with the valve. The air valve was partially on when it should not have been. The drill rod was into the slurry, and when the pressure built up, the slurry was pushed out of the drill rod and air pushed the slurry material up the annulus between the rod and the casing. A gap between the casing hammer and the casing directed part of the slurry toward the operator.

Actual Outcome: The operator was taken to the emergency room where medical personnel cleaned his eyes with swabs and thoroughly flushed them. His eyes were dye checked for corneal scratches and none were noted. Prescription antibiotic drops and a pain medication were prescribed. A visual acuity test was conducted and no impairment was noted.

What Went Well:

- Team recognized a change in procedure and performed a stop work and MoC earlier in the day.
- Team decided to stop work the second time and executed the normal shut down procedure.
- Immediate response to operator's needs.
- Notification to team.
- Operator taken for medical treatment.

What Went Wrong:

- Air control valve was partially open due to either operator error or unintentional movement of the valve control handle by some other force.
- Air had caused the casing to slip, which opened a gap causing material to eject at the casing instead of materially ejecting through the 4" hole.
- The operator was injured.

Immediate Causes:

2.5 –Incorrect placement of equipment. The valve operating handle was in a location which allowed the operator or casing hammer hydraulic hose to easily bump it out of the off position.

6.7 – Other. The correct tools were used. However, air contributed to the casing settling and causing a gap for the material to be ejected.

7.4 –Energized source exposure. The operator was unaware of air flow into the system as he lowered the string into the hole.

System Cause:

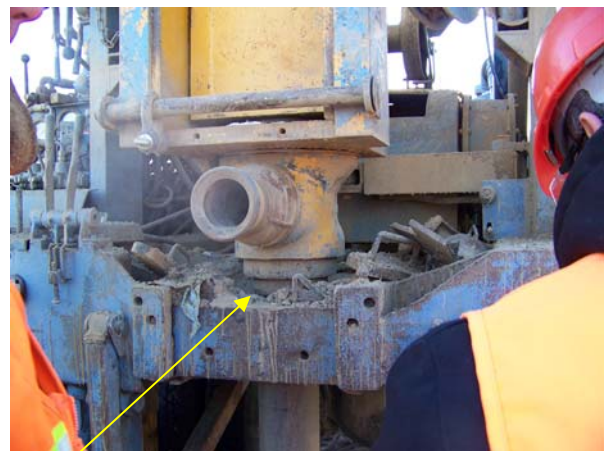
18.3 – Incorrect ergonomic or human factor design. The valve operating handle and hydraulic hoses were too close to the operator and can be moved too easily

Corrective actions:

- The valve operating handle will be evaluated for replacement or shortening.
- A complete description of valve will be provided to RM Drillers for evaluation of similar valve designs.

Lessons Learned:

1. Modification to manufacturers design may be required for older [late 1970's] drill rigs in order to ensure that the equipment is safe for the operator.
2. Routine shut down procedure was not identified as differential for the 1979 drill rig vs the newer model rigs. The driller had been operating the rig with this same ergonomic design for years and had not recognized a potential hazard associated with the different design.



Gap between the casing hammer and casing where the material was ejected.