

Drill hole compressed air injection

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What happened?

While drilling a surface to underground paste fill hole two drillers were injured when a sudden release of air, water, mud and fines was ejected under pressure toward them.

How did it happen?

Compressed air was injected into a drill hole in preparation for down hole reaming. The hole began to block up allowing the compressed air to build up pressure which suddenly released air, water, mud and fines, from the surface diverter pipe toward the drillers. The drill rig pressure diverter set up consisted of PVC pipe and a flange which was positioned facing towards where the drillers were working. One driller fractured his forearm when he fell over and both sustained bruises and abrasions.

Comments

Pressure can build up when reaming holes due to mud and fines blocking the hole. The diverter flange was loosely attached to the grouted outer hole casing, allowing the flange to move. The PVC pipe attached to the flange was held in place by a ratchet strap hooked and tightened over the end of the pipe.

When the pressure built up and released suddenly the set up failed to contain or effectively direct the release of pressure. There were no sensors or feedback on the drill rig to indicate the developing pressure build up.

Recommendations

- Where possible diverter pipes should be directed away from general work areas.
- Diverter pipes must be fit for purpose and able to withstand pressure release events.
- All pressure diverters must be securely connected to the drill hole grouted outer casing.
- Where possible sensors or feedback indicators should be used to detect pressure build ups.
- Drillers should be made aware of the potential for pressure build up when reaming holes.



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Issued by the Queensland Department of Natural Resources and Mines

Placement: Place this announcement on noticeboards and ensure all relevant people in your organisation receive a copy.