

Case Study: Project CLEANS, Northern Saskatchewan

Volumetric Survey using a Customized Borehole Camera

The Challenge

The client has several large abandoned mining cavities that need to be remediated, as part of Project CLEANS (Cleanup of Abandoned Northern Sites); a multi-year project to assess and remediate 37 abandoned uranium mine sites in northern Saskatchewan. Currently, the cavities are covered with large stainless steel caps. This is a considerable expense as the mine sites are in remote northern locations. The client would like to fill them with waste rock, but there are several beams running through the cavities, so it is possible the rock could bridge at the top of the cavity and not allow complete filling.

The Need

In order to ensure 100 per cent fill, the client needs to know the cavity volume so they can determine the volume of waste rock that can be disposed in the space. The cavities to be measured are large and challenging to survey, and many are a few hundred feet deep.

The Solution

SRC's Development Engineering and Manufacturing team took an existing product in our portfolio, a borehole camera, and modified it to suit the client's needs. Our high-pressure borehole and cavity survey camera was used as a platform to mount a custom survey tool, which would allow a 3-D volume survey to be performed, while simultaneously recording HD video. By adapting an existing system, time-to-market and cost were reduced. Using our advanced 3-D printer allowed a complex custom mounting head to be built for a fraction of the cost of a similar machined enclosure.

Our existing custom camera control software was adapted to log a point cloud of the cavity, which can be used to create a 3-D computer model and accurately calculate cavity volume.

The camera was tested in the lab environment and met the client's requirements. It will be used onsite for Project CLEANS in 2015.

Associated Services

- Rapid Prototyping
- Software Development
- Downhole Surveying
- Custom Engineering

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