

CASE STUDY: Material Management

Problem

Dumping location management plays a large role in meeting production requirements and keeping a fleet operating efficiently.

Operators disposing of valuable Ore into the waste dump is a problem for a number of sites. This wasteful and inefficient process results in considerable loss both financially and in terms of production efficiency.

Study

The purpose of this study was to reduce and monitor the wastage on a small high-grade gold mine that had recently implemented iVolve's *Mine4D Production* capability.

Solution

To prevent ore being disposed of into the waste dump, iVolve's *Mine4D Production* capability was installed.

Using iVolve's pre configured geofence capability, certain areas of a mine are allocated to different materials e.g. Gold/Waste. Assigning a material to a geofence will mean that should a truck become loaded whilst inside the fence - the associated material will automatically be selected as well.

By assigning a loader and material to a geofence, any truck loaded while inside that fence will be automatically assigned the configured material and/or loader.

During a night-shift 10 loads of Gold were lost due to incorrect dumps stemming from operator fatigue (at a cost of approx. \$10,000 per load).



Operator Screen



As a truck operator travels into a geofence with material mismatch e.g. when a driver carrying gold drives into the waste geofence, or when a driver carrying waste drives into the gold geofence. The below notification will appear on the iVolve Screen. The notification appears on top of whatever app is currently running, as per the image below:



An audible alert will sound whenever the above Material Mismatch notification is visible. These rules are checked in real-time by each iVolve System.

If the truck operator continues travelling in the incorrect geofence, and begins to dump the incorrect material, an audible alert will sound. The notification will change from the previous warning screen to the one below.



The notifications are automatically dismissed when the operator reroutes back to the correct geofence, e.g. realises he/she is carrying the wrong material to the wrong dump, or when he/she manually resets the material in *Mine4D Production*.

The interface above the red banner remains visible, however all user touches will be ignored until the notification itself is dismissed.

Findings:

Graph 1 illustrates the considerable reduction in gold being incorrectly discarded in the waste dump. For the month of December, there were over 110 loads being incorrectly discarded in the waste dump, compared to 0 wasted loads eleven months later in November 2016.

**110 wasted loads to 0 in
11 months.**

Through training and operator awareness, iVolve improved operator's ability to direct loads, minimising financial loss and increasing production efficiency.



Graph 1: Loads of Gold Ore discarded in Waste Dump per Month

iVolve

Established in 1995, iVolve is an Australian industrial technology company delivering real-time machine intelligence to the resources sector enabling our clients to make educated quick decisions to increase productivity, reduce costs and minimise risk.

iVolve's **Mine4D**, records and presents crucial operational data for the monitoring and management of a mining fleet. This provides all levels of the mining operation the knowledge to back smart decisions.

Our experienced R&D team at iVolve are passionate about research and keeping the company at the forefront of innovative, intelligent, yet simple solutions for our customers. As a result, the company has built a solid reputation over the years as a leader in its field.

If there is an opportunity for productivity improvement within your operations, our team are always ready to assist.

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mining made simple