



CUSTOMER SUCCESS STORY



CLIENT: MIDDLEMOUNT COAL



INDUSTRY: COAL MINING



LOCATION: QUEENSLAND, AUSTRALIA

OVERVIEW

Datablast enabled Middlemount Coal to optimise their drill and blast procedures, significantly improving blasting performance and accuracy.



CHALLENGES

- Maintaining fast paced drill and blast schedules
- Engineers need a logical set of tools to maintain a high standard of blasting safety
- Delays transferring designs and consolidating data from paper sheets to Microsoft Excel would prevent operations from achieving the blast schedule and limited productivity
- Ensure compliance to plan and achieve consistent blast output



OUTCOMES

- Digitally collecting field data now saves at least 30 mins of data entry per day
- Data is now readily, quickly accessible, and centralised allowing real time changes at any stage, supporting quick crucial production decisions
- Significant improvements in the implementation of blasting plans, which are now continuously reaching a high standard that parallels industry benchmarks

Amount of engineers using

2

Estimated savings per year in time

100+ hours



CUSTOMER

Middlemount Coal Pty Ltd is an incorporated joint venture between Peabody Energy Australia Pty Ltd and Yancoal Australia Ltd. Situated approximately 90 kilometres north-east of Emerald and 7 kilometres west of Middlemount in Queensland's Bowen Basin, the Middlemount Coal open-cut mine produces semi-hard coking coal and medium-volatile pulverised coal injection (PCI) coal for the export market.

Having commenced full-scale operations since 2011, which primarily consist of excavator and truck excavator mining augmented by cast and doze, their saleable production has amounted to approximately 4.1 million tonnes per annum.

At current production rates, the Middlemount Coal Mine has a projected lifespan exceeding 20 years as they strive to continue producing coal and providing a positive contribution to the community.



CHALLENGES

Like many mining operations, the engineers at Middlemount Coal faced a very common industry challenge, maintaining fast paced drill and blast schedules. Given the various moving parts in the drill and blast process, the absence of a management solution also meant that auditing operations was a more difficult task than it needed to be. Most importantly, the engineers needed a logical set of tools to help them maintain a high standard of blasting safety on site.

The engineers at Middlemount Coal found the process of transferring designs and consolidating data from paper sheets to Microsoft Excel to be very restrictive. In such a fast-paced environment, this increased difficulty with data transfer created a limit on their productivity. Consequently, the need for an integrated solution to formalise their drill and blast management system became evident as any further delays would prevent operations from achieving the blast schedule.

A solution that could handle complex charge layout designs within multi-seam geology and offer flexible capabilities that not only centralised their engineering needs, but also track drilling, QAQC and loaded explosives data was essential. Data reconciliation also became an increasing imperative for Middlemount Coal to ensure compliance to plan and consistent blast output.



Consolidating data from paper sheets to Microsoft Excel was very restrictive



Previously unable to maintain fast paced drill and blast schedules



Needed data to be reconciled

SOLUTION

In 2019, Middlemount Coal approached Datamine for a solution that would optimise their drill and blast procedures. Designed specifically by professionals in the industry, DataBlast enables operational improvement through its integrated and comprehensive design capabilities. It is a multi-user system that covers the entire open pit drill and blast process from design to in-field work operations.

DataBlast has multiple methods of data capture, including data entry, csv imports, the BlastPad tablet app and automatic integration of various drill systems. This gives users a flexible approach to improving drill and blast process control.

DataBlast's centralised data storage functionality ensures users are always working on a singular source of truth that is continuously updated in real time. Further, users can create live dashboards and generate reconciliation reports to help them make quick production decisions or identify long-term trends to further improve blasting performance.

DATABLAST IS BEST SUITED TO MINING COMPANIES WHICH:



Need to streamline their engineering workflow and improve engineering capabilities



Increase mining and processing productivity through better blast fragmentation



Improve ore recovery by minimising ore loss and dilution



Have confidence in their data, removing the need for spreadsheets and controlling blasting costs.



Enforce safety considerations in design and implementation of drill and blast



PROCESS

Middlemount Coal implemented Datablast **two years ago** and have since transformed their operations to a more formalised and automated work process. In relation to engineering design components, DataBlast's full suite of bespoke CAD tools has granted the engineers at Middlemount more freedom and speed to design intricate drill requirements.

Charge layouts which were once manual processes taking several hours on Excel, and was also subject to human error, has now been optimised into a seamless workflow that ensures accuracy when blasting around coal seams.

Incorporating their coal seam data into DataBlast simplified Middlemount's charge layout process to the extent that applying pre-defined loading rules from a user library only takes a few clicks. Each blast going forward consequently has an extensively intricate placement of explosives for optimum energy targeting.

Middlemount's Drill and Blast Engineer explains that Middlemount Coal has seen improved drill and blast processes compared to using Excel or paper load sheets.



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RESULTS

DataBlast's automatic integration of as-drilled data from Middlemount's drill navigation system gave their engineers up-to-date hole positions for calculating accurate charging plans.

Using DataBlast's accompanying purpose-built field application known as BlastPad, they were able to digitally collect blast hole QA and as-loaded information for future interrogation.

Since implementing DataBlast and BlastPad technology, digitally collecting field data now saves Middlemount at least 30 mins of data entry per day, amounting to over 2 weeks per year of lost time. This crucial lost time which could have otherwise been spent on improving engineering and bench procedures.

Middlemount's Drill and Blast Engineer shares that not using this software in today's age would be falling short of industry standards.

Having a formal centralised data storage database location system also meant that Middlemount's engineers could respond to changes in real time at any stage of a drill and blast pattern's implementation, pattern to make supporting their need for quick crucial production decisions. This is largely due to having data that is always readily and quickly accessible.

In addition, the central database approach has vastly improved the operation's overall drill and blast auditing capability.

DataBlast has undoubtedly optimised Middlemount Coal's drill and blast procedures with its unifying design approach that combines engineering and in-field operations into one solution. Their operations have seen a significant improvement in the implementation of their blasting plans, which are now continuously reaching a high standard that parallels industry benchmarks.



CONTACT

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