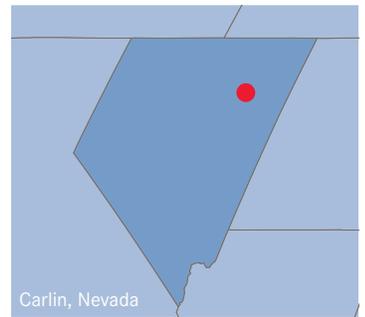


Underground mining truck repowered for the long haul, thanks to Series 460 engine from MTU



Who: Small Mine Development Company
What: Series 460 engine
Why: Reduced emissions, fuel efficiency and exceptional reliability
Where: Carlin, Nevada, USA



After ten long years of constant work, a 1998 Atlas Copco mine haul truck is repowered with a Series 460 engine from MTU. Now with higher performance and lower emissions, the truck is ready to serve Small Mine Development Company for years to come.

If you think your commute to work is rough, try getting behind the wheel of a haul truck at the Newmont Mining Leeville Project. The day starts at the mine entrance in Carlin, Nevada, which averages only nine inches of rain annually. From there, the truck makes its descent to work. It traverses miles through a steep, winding tunnel until it reaches its destination – a mining face 3,000 feet underground.

Here, the truck gets a short break while it's loaded with up to 36 tons of ore. Then, it turns around and climbs back to the surface. The typical truck hauls 8-10 hours a day. It's a tough grind, but the reward is well worth it – the mine's chief byproduct is gold, followed by silver and copper. Due to these tough work conditions,

mine haul trucks can't last forever. When the Small Mine Development Company determined it was time to give one of their trucks an overhaul, they contracted MTU distributor Smith Power Products to help. Their 1998 Atlas Copco MT436 haul truck had endured over ten years on the job. It was time to rebuild and repower the vehicle.

Coming back for more

"Since it had seen so much action, Small Mine disassembled the truck down to the frame," said John De La Hunt, Smith Power Products branch manager. "We helped them rebuild it with a new engine and components and the customer performed a zero hour rebuild." The truck's original Series 60 engine performed admirably, so Small Mine decided to stick with MTU.

John De La Hunt, branch manager, Smith Power Products
"Small Mine found the perfect solution in the Series 460. As we help them expand and repower the rest of their fleet, they're going to continue to depend on MTU."



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To comply with Tier 4i emissions standards, the Series 460 engine is engineered with SCR technology.

“The Series 60 engine was well known for its longevity. It was not at all uncommon for them to reach 20-25,000 hours before requiring an overhaul,” said De La Hunt. From start to finish, the project was completed in about three weeks.

Engine reliability, cost of ownership and time between overhauls are important to an underground mining company’s bottom line. “Haul trucks must have the highest availability – its uptime has to be as close to 100% as possible. When they need it, it’s got to perform,” said De La Hunt. With MTU’s legendary engineering standards, the Series 460 is perfectly suited to fit those qualifications. After all, when hauling gold and other precious metals, downtime can affect another valuable commodity – revenue.

Working efficiently

“While MTU’s reputation for dependability was a major factor, engine and noise emissions were the two biggest reasons we selected the Series 460,” said De La Hunt. “Newmont (the mine owner and operator) and Small Mine (underground mining contractor) strive to improve the air quality at their underground operations. And because Small Mine is a contractor for Newmont, they see a special need to provide the best technology for their customers.”

The Series 460 has established itself as the premier low-emissions engine in its power class. To comply with Tier 4i standards, the addition of an SCR emissions system preserves the engine’s inherent fuel efficiency and dependability, and requires no major changes to engine design. “SCR provides an advantage for these engines,” said Dee Wise, MTU sales engineer. “It’s an automated system that comes with the engine – so there’s nothing the owner/operator has to do to maintain the system. It’s more efficient, and requires less engineering – all you need is diesel exhaust fluid.”

Don Rathburn, maintenance superintendent at Small Mine, is pleased with the results. “The contribution toward our DPM (diesel particulate matter) program has been phenomenal,” he says. “The reduction in our particulate and NOx emissions has been significant – we’ve gone from the 400 parts per million range to nearly 120-130 parts per million.”

The perfect solution

Both Newmont and Small Mine are big believers in engines from MTU, with the vast majority of their fleets powered by MTU and MTU Detroit Diesel 2-Cycle engines through the years. With a Tier 4i Series 926 engine already in operation before the Series 460 was installed, Small Mine was first to Tier 4 in the marketplace.

Rathburn says, “We’ve been moving towards repowering with the Series 460 and Series 926 on a variety of our older equipment. It’s brought a spark to that equipment and improved performance significantly. It’s actually performing better than when it was brand new. Since the initial haul truck, we’ve finished repowering another haul truck and a loader, and we’re working on a second loader now.”

“Underground mining operators are constantly searching for a solution to increasingly challenging emissions standards without compromising productivity or complicating operations,” says De La Hunt. “Small Mine found the perfect solution in the Series 460. As we help them expand and repower the rest of their fleet, they’re going to continue to depend on MTU.”

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