



## Fertilizer firm's uptime is firmly rooted in Eaton

**Location:**  
Carlsbad, N.M.

**Segment:**  
Agriculture

**Challenge:**  
A high-quality backup solution with extended runtime was required to keep the company's plants operating smoothly, as well as protect expensive equipment.

**Solution:**  
Eaton® 9170+, battery cabinets, service

**Results:**  
The 9170+ came up roses for the fertilizer firm, delivering much-needed scalability, reliability and runtime.

*With Eaton, whether the service technician is performing a start up or support or preventive maintenance, it's always done on time, without any excuses.*

**Corey Houston, process control coordinator**

### Background

Intrepid Potash, Inc. is currently the largest U.S. producer of potash, a combination of mined and manufactured salts and potassium essential for healthy crop development. The name derives from "pot ash," which refers to plant ashes being soaked in water in a pot, which was the primary means of manufacturing the product prior to the industrial era. Intrepid is also known for its Trio® product, a specialty fertilizer that supplies three key nutrients (potassium, magnesium and sulfate) in a single particle.

With six active production facilities across New Mexico and Utah, the firm is unique in its utilization of low-cost solar solution mining at three of its facilities, including the newly constructed HB Solar Solution mine.

### Challenge

With millions of dollars worth of equipment spread out among four plants and a testing laboratory, Intrepid requires the highest level of power protection available. The critical functions that occur within all four of its plants—crystalization, flotation, compaction and solar solution—necessitate highly reliable uninterruptible power systems (UPSs) to safeguard operations, according to Corey Houston,

the company's process control coordinator.

Any amount of unexpected downtime would be a significant thorn in the side of Intrepid's business processes.

"If we lost power to one plant, it would take about eight hours to restart," Houston reports. "So we would lose eight hours of production time. When circulation halts, and we have live product going through the plant, that production is going to stop within the circuit and we have to manually take it out," he explains. "That could be 100 tons of materials, which could take two days to clean out. That's what happens during an improper shutdown."

Equally devastating for the company would be the potential for equipment damage. "We need to protect the various pieces of equipment we're using," Houston emphasizes. "We have some very specific devices we use for testing in our lab, including XRD and XRS machines. We're talking about million-dollar pieces of equipment."

Having used APC and Liebert UPSs in the past, Intrepid sought a new power protection solution capable of providing the highest level of reliability, as well as extended runtime, scalability, and premium warranty and service.



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## Solution

Intrepid unearthed the cream of the crop with the implementation of the Eaton® 9170+ UPS. After deploying the first unit back in 2011, the harvest has now grown to 20 units spread amongst all four of the company's surface locations. The UPSs safeguard a wide variety of instruments, motors and controllers, as well as circuitry, servers, work stations and backup devices.

"We use only Eaton," emphasizes Houston, who relied on the brand in his previous Army post. "I was already familiar with them and knew how to maintain them," he explains. "They far outweigh anything we had before."

The 9170+ delivers the highest level of reliability with N+X power and logic redundancy, which eliminates any single point-of-failure. Furthermore, since the 9170+ houses both the logic and power within the modules and not within the enclosure, redundancy is facilitated for the entire UPS. At the same time, the online design of the UPS completely isolates connected equipment from all incoming power problems, while a high wattage output powers more of today's modern power supplies.

With 9170+ units that range in size from 3 to 18 kVA, Intrepid values the scalability of the UPS, which can be easily expanded with the addition of plug-and-play 3 kVA battery and power modules.

"That was a very important thing for our company," Houston acknowledges, noting that Intrepid has multiple battery cabinets on most units in order to achieve a desired runtime of at least two hours.

"We're running huge boiler systems, and those steam turbines need to be powered down properly," Houston explains. "There are a lot of pumps and motors involved, and if they just stop running suddenly because of a power cut, they will never turn on the same way again. If we lose power, I need to properly purge the system, and the two-hour backup allows time to do that."

Intrepid gains additional reliability and uptime from the 9170+'s external bypass. "When we take it into service mode or line mode, it doesn't take away from operation of the plant," Houston says. "If we'd done that on our Liebert, we would have had no power to the UPS."

In the event an issue does crop up, the process control coordinator appreciates the 9170+'s ease of use, including the ability to isolate and troubleshoot specific slots. "The 9170+ is definitely very end-user friendly," Houston notes. "The display is great, and the battery diagnostics is my favorite feature. With our old APC units, trying to troubleshoot was much more difficult."

A manufacturer with the ability to provide exceptional service was another important consideration. "You can have the best product in the world but if it's not a good vendor, that makes a huge impact," Houston cautions.

"With Eaton, whether the service technician is performing a start up or support or preventive maintenance, it's always done on time, without any excuses," he adds. "I haven't had anything fail on any of the units."

Houston attributes that success, in part, to regularly scheduled preventive maintenance calls.

"Having a service agreement can save any company an astronomical amount of money," he emphasizes. "It is the utmost important thing I need to do to protect my plant. If I'm not doing due diligence on those units, I'm setting myself up for failure."

Furthermore, Houston appreciates Eaton's quick product turnaround. "The lead time with Eaton is great," he reveals. "If I need a 9170+, I can get one within four days — and if it's an emergency, it's one day. That's very important to us."

And as the company prepares to add more equipment into its plants, additional 9170+ units are also on the horizon for Intrepid. "I think Eaton makes a great product," Houston enthuses. "It always works exactly how I expect it to."

## Results

"With 9170+ units attached to all of the important pieces of our plant operations, we can either shut down safely or diagnosis and get back up without losing any production," Houston sums up.

Indeed, thanks to the Eaton 9170+ units, Intrepid Potash is able to:

- Assure system uptime and safeguard against equipment damage
- Safely complete necessary plant processes in the event of a lengthy outage, thanks to the units' extended battery runtime
- Easily add more power, capacity or runtime with the scalability of the solution
- Gain peace of mind in the ongoing reliability of its units with an Eaton service plan

For more information about power quality, visit [Eaton.com/powerquality](http://Eaton.com/powerquality)

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