

SPM® RFID Technology

Significantly reduce iron inventory efforts

SPM™ Oil & Gas

A Caterpillar Company

Case Study

TOTAL SAVINGS



Improved

accuracy



Reduced

number of workers
and days to track iron



Instant

availability of certificates
allowed faster setup



Ability

to track failure rates allowed
quality control to make more informed
purchasing decisions

THE FACTS



SPM® RFID reduces inventory
logging and tracking of

**450 pieces of frac iron
from weeks into hours.**



**Veracruz,
Veracruz Mexico**

THE INNOVATION

With SPM Oil & Gas' SPM® Radio Frequency Identification (RFID) technology, assets can be electronically tagged by serial number for safe and efficient inventory management, even when parts are difficult to access or shrinkwrapped.

Tested for durability, RFID tags are installed on assets at SPM Oil & Gas' manufacturing facility in Fort Worth, Texas. Tags are password-protected and can also be provided and installed for seamless use on other manufacturers' equipment.

Combined with our Asset Management Program (AMP) inspection and tracking iron is streamlined. Operators can track and recall information on any piece of equipment, anywhere in the world. Certificates, historical inspection data and other relevant information can be accessed in seconds. Personnel can easily update status or assign an asset to a hierarchical organization. Over time, the enhanced data library could prove invaluable for predictive analytics.

Our proprietary RFID Mobile App puts this power in the palm of your hand, eliminating transposed numbers and the misreading of data while producing certificates in an instant.

THE CHALLENGE

Hydraulic fracturing poses a significant challenge to field and quality control teams when it comes to tracking and maintaining a fleet of iron. In Mexico, the typical amount of iron on a frac site is approximately 450 pieces. Testing and completion can require as many as 500-1000 pieces of iron. Combine that with a rough, unforgiving terrain and manual tracking becomes an extremely difficult, time-consuming, error-prone process that can negatively impact pumping hours.

The largest oil and gas player in Mexico, Grupo Núcleo SEPEC, has a rich heritage as a Mexican company founded by locals. The company has grown robustly with operations throughout the country. As the company has expanded, so has its iron fleet, which now numbers more than 2000 pieces of iron at any given time.

SPM® RFID CASE STUDY

Tracking iron with a pen and paper was an especially painful process because quality control assigns each piece of iron three unique serial numbers—the OEM serial number, a group unit number and an internal serial number. Manual tracking meant frequent typos due to transposed or missed digits, complicated by equipment covered in mud or facing hard-to-reach angles. Tracking iron manually typically required several employees several days to complete. With so many pieces of iron, presenting certificates upon arriving at a rig was also a challenge.

The company sought to reduce the amount of time to track iron while also positively impacting its quality control processes concerning certificates and accurate supply counts to speed the setup process and enjoy more pumping hours.

THE SOLUTION

Grupo Núcleo SEPEC implemented SPM Oil & Gas' SPM® RFID technology and RFID Mobile App in its Quality and Warehouse Departments to decrease the amount of time required to track iron and enhance its quality control team's processes onsite. Having used SPM Oil & Gas' products and service for over six years, the company trusted the quality and technology of the SPM® RFID technology and Mobile App.

"The AMP platform allows us to track and see status of inspected iron."

THE RESULT

Grupo Núcleo SEPEC experienced the benefits of SPM Oil & Gas' RFID solution in the short-term and it has produced operational and financial advantages in the long-term. The ease and accuracy of the RFID system enabled the company to realize significant reductions in non-productive time and marked improvements in quality control processes. Rather than utilizing multiple workers over several days to track iron, the RFID system enabled this task to be accomplished by one worker in a few hours.

Quality control was now able to produce certificates instantly at rig zones and knew immediately which pieces of iron were available for use, enabling faster setup.

Equipment Inspected	Pieces Delivered	Delivery to Provider	Date Commitment	Actual Delivery Date	Pieces Received	% From Compliance
Tuberia SPS17	170	75/2019	30/07/2019	25/05/2019	176	100%
Tuberia SPS17	11	14/05/2019	30/07/2019	30/07/2019	5	100%
Manifold SPS17	22.	23/05/2019	30/07/2019	30/07/2019	22	100%
Tuberia SPS15 (1RA parte)	112	26/08/2019	12/09/2019	19/09/2019	112	79%
Tuberia SPS15 (2DA parte)	103	26/09/2019	18/08/2019	Not Delivered		

The RFID system produced an additional benefit for quality control. It enabled them to easily track failure rates, empowering their purchasing decisions. Reordering parts with the greatest reliability resulted in greater efficiency and pumping hours in the field.

"We've experienced improvements in controlling our iron by adding the RFID solution," said Humberto Barrientos, Warehouse Supervisor at Grupo Núcleo SEPEC. "This has improved the traceability of components in Grupo Núcleo SEPEC. One of the many benefits we've experienced is the ability to perform the reading without contact and without needing a direct visualization of the reader in the parts that are installed in the operating units (High Pipe). This saves us a lot of time"