

# SOLUTION SPOTLIGHT

## MoistScan Detects High-Moisture Events, Saving 13 Hours of Production Monthly

Introducing the MoistScan system into the mine site resulted in:

**\$2.7** Million additional revenue per month

**13** Hours recovered of monthly production

### COMMODITY

Iron

### TYPE OF MINE

Surface

### APPLICATION

High-Moisture Shutdowns



Mine Site

### Background

In the mining and processing industries, material moisture levels are a crucial factor influencing operational efficiency. High moisture content can lead to blockages, equipment malfunctions, and significant downtime, all of which result in substantial financial losses. One of RTI's customers, a leading iron ore processing plant, was experiencing persistent 'high moisture events' that forced operational shutdowns whenever moisture levels exceeded 12%.

### The Challenge

The primary issue faced by the customer was the inability to monitor moisture levels in real time. Instead, moisture measurements were conducted in the laboratory, with results typically taking between two and four hours to be returned. This delay meant that by the time excessive moisture was identified, the plant was already facing operational issues.

When moisture levels exceeded 12%, production processes had to be halted and reset to prevent blockages and equipment damage. Each shutdown resulted in approximately five hours of lost production, accumulating into significant downtime over the course of a month. The challenge was clear: the plant needed a real-time solution to monitor and control moisture levels, thereby preventing unnecessary stoppages and increasing overall efficiency.

### The Solution

Recognizing the need for immediate and continuous monitoring, RTI implemented its advanced MoistScan technology on both the plant's feed-in and feed-out systems. This cutting-edge moisture analysis tool provided real-time data, allowing operators to instantly detect any rise in moisture levels before reaching the critical 12% threshold.

By having immediate access to moisture readings, plant operators could take proactive measures to adjust feed processes, preventing breaches and maintaining smooth operations. Additionally, integrating MoistScan into the plant's control system allowed for automation, reducing the dependency on manual monitoring and intervention.

### Implementation & Discovery

Upon deployment of MoistScan, the plant's operational team closely monitored its performance, tracking moisture trends and analyzing the impact on downtime. The real-time insights provided by MoistScan enabled the team to fine-tune operational procedures, optimize material handling, and implement moisture mitigation strategies such as feed adjustments and improved stockpile management.

## The Results

Since the implementation of MoistScan, the site has reported a complete eradication of high-moisture-related shutdowns. The benefits have been substantial:

- **Elimination of High Moisture Events:** The plant no longer experiences unexpected stoppages due to excessive moisture, improving overall reliability.
- **Recovery of 13 Hours of Monthly Production:** By preventing unnecessary downtime, the plant has been able to operate continuously, increasing overall productivity.
- **Financial Impact:** The recovered production time translates to an estimated \$2.7 million in additional revenue per month, a direct result of improved moisture control and uninterrupted operations.
- **Increased Yield:** With an operational throughput of over 2,100 tonnes per hour, the ability to maintain consistent processing efficiency ensures optimal resource utilisation, maximised output and quality.

## Conclusion

The implementation of RTI's MoistScan technology has significantly transformed the operational efficiency of this iron ore processing plant. By providing real-time visibility into moisture levels, MoistScan has eliminated high-moisture shutdowns, recovered valuable production time, and generated substantial financial gains.

This case study highlights the power of real-time data in industrial operations, reinforcing RTI's commitment to helping industries Measure, Analyse, and Optimise their processes. As more mining and processing facilities adopt advanced moisture analysis technologies, the potential for increased productivity and reduced operational losses will continue to grow.

## Future Applications and Industry Impact

The success of MoistScan in this iron ore processing plant demonstrates its potential applicability across various commodities and industries where moisture control is critical. Beyond iron ore, this technology can be effectively used in:

- **Stockpile Management:** Ensuring optimal moisture levels in material stockpiles to prevent compaction, blockages, and degradation.
- **Coal Processing:** Controlling moisture content in coal shipments to improve combustion efficiency and reduce handling issues.
- **Bauxite and Alumina Processing:** Managing moisture levels in raw bauxite to optimize refining processes.
- **Cement and Aggregate Industries:** Preventing excessive moisture in raw materials to improve blending and processing efficiency.



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