



Standard Treatment

Meeting the ISO's challenge for wastewater management.

BY BRAD MARCHANT

REGULATORY DEMANDS have put increasing pressure on industrial operations to instill more rigorous certification processes. With the increased focus on safety and environmental protection, it is more important than ever that organizations demonstrate adherence to internationally recognized and respected standards such as those of the International Standards Organization (ISO).

ISO 14001 is one way companies can assess the quality of their suppliers and know they are maintaining acceptable standards in their environmental protection efforts. But what real incentive is there for companies to complete these assessments?

In the case of water treatment company BioteQ Environmental Technologies, the catalyst for adopting ISO 14001 standards for its operations was a water treatment plant located at Xstrata Nickel's Raglan mine site in the Nunavik region of Quebec, 1,800 kilometres north of Montreal, and 100 kilometres from the Hudson strait.

Xstrata is an international mining company with an ongoing commitment to corporate social responsibility. As such, it has been aggressive in setting the highest international standards for safety and environmental compliance. The ability to meet these standards is

required of suppliers and contractors at the Xstrata Nickel's Raglan mine site.

ISO certification was particularly important for this facility, since it functions within a fragile ecosystem. Therefore, committing to meeting an internationally recognized standard was an important strategic initiative as a means to validate the quality of standards relating to environmental stewardship. As part of the ISO mandate, the goal was to establish standard procedures for prevention, training protocols and problem solving in order to react to changing circumstances.

What is ISO 14000?

The ISO 14000 is a family of internationally-recognized standards for environmental management systems designed to help organizations minimize how their operations impact the environment by establishing a series of norms to promote more effective and efficient environmental management and to provide useful and usable tools—ones that are cost effective, system-based, flexible and reflect the best organizations and the best organizational practices available for gathering, interpreting and communicating environmentally relevant information.

The ISO 14001 standards, specifically, represent the core set of standards used

by organizations for designing and implementing an effective environmental management system.

Areas covered under the ISO 14001 standard include:

Management procedures: Environmental control and monitoring, documents and records control, competencies and training management, roles and responsibilities, emergency response planning, audits and compliance verification processes, and corrective/preventative actions.

Operational procedures: Analytical method validation, sampling, waste management, and reagent handling.

Work instructions: How-to manuals with specific instruction on how to operate the plant, monitor performance, and ensure compliance with design specifications (start-up and shut-down procedures, testing and analysis, monitoring, process calibration, et cetera).

Striking the balance

For an Arctic mining operation, ISO 14001 certification can present a number of unique challenges. Raglan therefore features a number of unique aspects that underscored the need for ISO certification.

Geographical location was one. The extremely fragile environment places an

increased onus on the facility to ensure that wastewater is returned to its natural state. Part of achieving that has been a standing corporate-wide policy that first establishes water treatment capacity before starting any operations.

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Seasonal requirements were also somewhat unusual. The site only operates six months of the year, when the climate is favourable to production. During those months of full production, the water treatment plant processes over 900,000 cubic metres of water. During the months it is operational, the water treatment plant runs 24 hours a day with no downtime—a far cry from batch

processing systems in which business owners can set up, run, stop, and check performance on a scheduled basis. At Raglan, not only does monitoring have to be executed in real time, but operators also need to have the systems in place to react very quickly to changes.

Another particular challenge of ISO 14001 certification for water treatment systems is the need to establish consistent quality control guidelines in an environment where water composition and flow can vary considerably. Part of the ISO criteria therefore involves applying adaptive management processes and tools for monitoring and reporting.

The BioteQ facility is the first of the company's plants to be ISO 14001 certified, a process that took a year of documentation processing, operator training and external auditing to

complete the initial stages. Part of the process of running the operation to ISO 14001 standards was establishing a clear set of protocols to ensure consistent reporting and communication, as well as operating procedures, which are reviewed and audited on an annual basis.

ISO 14001 certification is becoming an increasingly relevant component for operations with a global reach who are concerned with establishing clear standards for environmental compliance. In a global economy where quality is sometimes difficult to assess, international standards provide a benchmark for performance. Achieving these standards requires commitment, both human and financial. But the payback in terms of quality assurance and process improvement makes the effort worthwhile. **wc**

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