

Locus Brings E-Technology To The Environment

In a remote area of the high Sierra Nevada mountains, Union Pacific Railroad Company (UPRR) was faced with the task of treating diesel-contaminated groundwater. Before October 1998, their sole option at this Norden, California, site was to send engineers and technicians-from as far as 90 miles away-to perform routine site operations.

UPRR realized that this was not an efficient way to run this site. Seeking a radically new approach, the company turned to Locus Technologies. Locus's engineers had many years of experience designing and installing remote control and automation systems. More importantly, having recognized the growing opportunity provided by the Internet, Locus had recently developed a Web interface to these systems. Locus's advanced solution is a model for the way UPRR now chooses to manage several of their environmental remediation sites across the country.

Immediate & Substantial Savings

Working with the client and their environmental consultants, Locus designed and installed a fully automated groundwater treatment system that was connected to the Internet. Access to the system was provided through LocusFocus™, a "Yahoo"-style Web portal that provides a variety of services for the environmental industry. All pumps, filters, valves and sensors at the Norden site are connected to a programmable logic controller (PLC), which, in turn, interfaces directly with LocusFocus™.

LocusFocus™ allows an off-site operator to query the site control system for live operational data, such as water levels, flow rates and vessel pressures. This information can then be displayed in either graphic or tabular format. Operators can also adjust valves, perform system resets and diagnostic work, and access historical data. Downloads and/or display of historical operational measures are also available via wireless, hand-held devices, such as Palm Pilots™. No expensive software, other than a Web browser, is necessary to run the system.

The cost savings that UPRR realized from this automation were immediate and

substantial. In less than four months, UPRR realized a return on its investment. "The fact that off-site personnel can monitor and adjust the system to maintain peak performance is a tremendous advantage," states Mr. Michael Grant, remediation manager for UPRR in San Francisco. "You can't effectively run the system without it [Locus's system]. Norden is under as much as 15 feet of snow in the winter, making it a logistical headache to bring

people in there. Technology takes the place of humans to adjust flows, measure water levels, and gather other operating data. Locus is a great company...very qualified. They automated a manual process, saving us the daily labor costs. We took process control and pushed it through an Internet browser, allowing easy access to the treatment system, component data, links to component suppliers, operating manuals, and project documents such as permits, reports, and as-built drawings. This essentially paperless system is accessible to anyone who needs it at any time." Adds Dr. Neno Duplancic, President and CEO of Locus Technologies, "We have given our client a system that is much more efficient to operate and maintain, and that reduces their O&M costs. It is clear that our Internet-based automation technology, when coupled with system installation, can significantly reduce the overall cost of remediation and treatment projects."

Site Shuts Down

In October 2000, just two years after the automation retrofit, UPRR obtained agency approval for closure of the Norden site, and its water treatment system was turned off. More than 9 million gallons of groundwater were treated without any major problems. "This project is an example of how to leverage technology to reduce maintenance



costs, as well as to achieve site closure in an efficient manner," said Duplancic.

Related Developments

Since they first began work on the Norden site, Locus has significantly expanded the range of services available at LocusFocus™. The portal is delivered to customers as an Application Service Provider (ASP) model. Core services available at the portal include not only the remote control and automation and diagnostics of environmental treatment systems, but also a suite of environmental project management tools offering, among other things, document storage and retrieval and on-line collaboration opportunities. The most recent addition to the portal is Locus's Environmental Information Management system (EIM™). This system is used by subscribers to store large quantities analytical, sampling, borehole and well construction information from site investigations, cleanups and monitoring studies. Through the web, users are able to customize aspects of the system for their particular projects, plan and schedule sampling events, enter field information, upload electronic files, and produce reports and graphics. ●