



Wellhead Operators in Texas Trim Operating Expenses with Automation Technology from Software Toolbox

The Texas reputation for size comes with some mighty metrics to back it up. As the largest oil producer in the Union, the state's wellheads are spread over 268,000 square miles. If you are in the oil and gas industry, on-site management and monitoring of land-based wells can be a logistical challenge as well as a considerable expense. The state boasts nearly one working oil or gas well for every square mile, each requiring stringent monitoring and reporting by the Railroad Commission of Texas, the governmental regulatory agency that oversees the state's oil and gas industry.

Not surprisingly, automation technology continues to make a significant impact on the upstream and midstream oil and gas business, especially in the areas of remote production site and distribution monitoring and management. [Five Star Measurement](#) of Weatherford, Tex., a comprehensive field service provider to natural gas and oil producers, focuses on measurement, calibration, and flow meter installation as well as communications and network connectivity. The company, which works with large global producers as well as independent owners and operators, has been spearheading the industry transition from traditional wellhead operations inspections to more cost-effective remote monitoring technology solutions. As a result, customers are seeing reductions in operating costs associated with field technician time and travel expenses.

Soon after Software Toolbox introduced its new [Electronic Flow Measurement \(EFM\) Suite](#) plug-in for its flagship product, TOP Server, Five Star integrated the solution into more than 700 wellheads as an initial stage that may eventually expand to 6,000 sites. TOP Server is Software Toolbox's OPC-certified and native HMI device connectivity software application, offering more than 130 different device drivers and plug-ins. As an add-on to Top Server, the EFM Suite is used on remote well sites to collect historic data from flow meters. The data is transmitted via radio, cellular, or WAN/LAN to a central location for review and reporting. The TOP Server product enables access to more than 100 different drivers for other industry applications, including facilities management, power distribution, and real-time device information. Wide driver availability offers additional flexibility to oil and gas industry users.

The EFM Suite, which enables the export of oil and natural gas data to any ODBC-compliant database, was designed to support scheduling and retrieval of field data from a variety of flow meter devices. Data collected by the EFM Suite can be saved in different file formats for real-time and historical reporting and analysis, as well as for process and production optimization.

"The Software Toolbox EFM Suite spares the owner or operator of a well from needing to physically check production sites each day, and enables the shifting of resources into other areas of a business," said Chad Sullivan, director of information technology at Five Star Measurement. "Some of these installations are on the same acre of property; some are not within 250 miles of each other. So with this application, owners and operators can more easily and efficiently figure out what's going on in the field remotely. They can also better plan service technician time in the field based on the information electronically collected and transmitted from the meters."

The automated approach retrieves data from the field, either on a scheduled basis or in real-time, so that it can be consolidated and exported to reports in minutes, satisfying regulatory reporting requirements as well as delivering business analytics to company decision-makers. If there is a specific problem identified at a wellhead that is located at a significant distance from an operations center, service routes can be adjusted to maximize field service efficiency and, thus, better control operations expenses. The EFM Suite also helps production engineers visualize field activities from a "holistic" perspective so they can make calculations based on immediate data, instead of the traditional practice of waiting days to react to flow rate information manually collected from the field. The engineer will use this data to fine-tune the well operation

Software Toolbox
International Corporate
Headquarters, USA

148A East Charles Street
Matthews, NC 28105 USA
www.softwaretoolbox.com

TOLL FREE: 888-665-3678
GLOBAL: 704-849-2773
FAX: 704-849-6388





by adjusting processes such as flow rates and shut-in time. This can be a significant production-increasing exercise that can happen more rapidly based on the real-time collection of data using the EFM Suite.

“Using real-time data, we might find that only one well needs attention in any given day, so that means a customer doesn’t have to visit every well in a circuit to verify and record flow data,” Sullivan said. “A lot of companies in this industry still want to put ‘eyes on the site,’ but instead of spending a lot of time looking at each flow meter to try and figure out what’s going on they can drill down on a problem or just do a quick drive by and verify that gas isn’t shooting out of the ground and there’s no fires, so they can move on. The solution allows the configuration of custom alerts based on real-time data, so field technician can receive email or texts before there is an issue, rather than finding out on-site. It’s definitely a time-saver for the person in the field. A lot of well owners want everything checked daily. Once they become more comfortable with the solution they learn to trust the technology. Then they can reduce site visits and realize the benefits of saving the expense associated with technician time and transportation.”

For each customer, Five Star develops a hosted solution that collects wellhead flow data from the field using TOP Server EFM Suite, logs the data to a SQL Server database, then delivers the data to customers via browser-based dashboards. The data is displayed in graphical charts and trend models, and can be exported for internal reporting applications and is automatically converted into the report format required by the Railroad Commission. The Software Toolbox flow measurement solution standardizes data via its cross-platform and cross-device design and consolidates data in one location and format.

Five Star is also developing customer applications based on Software Toolbox’s [TOP Server Oil and Gas Suite](#), offering a wide range of communications drivers for HMI, SCADA, DCS and data historian systems and applications used in petroleum, natural gas, and pipeline operations. Five Star next plans to introduce a mobile interface so customers can access reports from any handheld or mobile device. Such mobile solutions could include Software Toolbox’s [Factory KPIs](#), a solution that puts key performance information on devices such as iPads, iPhones, and portable Windows devices.

“In the past, larger oil companies operating land-based wells viewed on-site data collection as the cost of doing business,” Sullivan said. “But as more companies have entered the business, the ability to cut those costs, increase efficiency and realize more timely acquisition of remote site data has had a big impact on the bottom line. It’s a paradigm shift in the industry as competition has been spurred by small and medium-sized players. The bigger drillers didn’t pay attention to those costs because the margins were much higher and so those costs were ignored. Now they realize they have to pay attention to every expense.”

Though the oil and gas business in the Lone Star State is spread over a wide expanse, automation technology developed by Software Toolbox and integrated by Five Star Measurement is helping business owners get a better handle on vital field production data while trimming the size of wellhead management operating expenses.

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