

Valero Energy uses LabVantage to Help Standardize Laboratory Best Practices



Valero Energy Corporation is a Fortune 500 international manufacturer and marketer of transportation fuels, other petrochemical products, and power. It is headquartered in San Antonio, Texas. Throughout the United States and Canada, the company owns and operates 15 refineries, and one in Wales, with a combined throughput capacity of approximately 3 million barrels per day, 11 ethanol plants with a combined production capacity of 1.2 billion US gallons per year, and a 50-megawatt wind farm.

KEY CHALLENGES

Because of four new refinery acquisitions in 1997 and 1998, Valero was seeking a superior LIMS application to become the corporate standard. This new corporate-wide solution would replace a variety of legacy LIMS installations at all of its plants. The ideal solution had to meet the following criteria:

- Meet all the functional requirements for a refinery (process) laboratory
- Be able to integrate “seamlessly” in the future with the corporate business and plant manufacturing systems (SAP and Info Plus 21)

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SYSTEM SOUGHT

The LIMS specifications and/or functionality had to meet the following workflow and management functions:

- Automated sample scheduling with label printing
- Ability to submit unscheduled samples
- Capture procurement and date and time of sample
- Track sample pickup and delivery
- Scan from barcode samples when received with date and time stamp
- Schedule work and distribute samples to correct lab area/instrument and to other identified workstations
- Prepare samples
- Perform analysis (measurement) and check against control charts with exception reporting and automation notification of results
- Capture and verify results – whatever the source – with detailed sample analysis
- Automate report and result distribution process with chain of custody reporting



SYSTEM SELECTED

LabVantage LIMS was selected from a list of three vendors. LabVantage met all of Valero's requirements and was able to install and load at the Corpus Christi lab data with over one million result records in just over two weeks. This system was then demonstrated to the lab managers and various support staff over a two-day period.

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SYSTEM DELIVERED

Over the course of several years, LabVantage LIMS was deployed across multiple labs and locations. The first implementation took place in Valero's Paulsboro, NJ facility, starting in May 1999. It was live that September. Over the next 12 months, the LIMS was deployed at four additional refineries. Valero's acquisition of Ultramar Diamond Shamrock necessitated the LIMS implementation across five more refineries, with the Ardmore, OK refinery implementation completed in October 2002. LabVantage LIMS is used 24/7 by all laboratory personnel in each refinery, ranging from 15 users in the Ardmore facility to more than 50 at the Corpus Christi refinery.

At the time of initial deployment, Valero was inputting, on average, 40-50% of results from the automated instrument interfacing of the gas chromatographs and automatic distillation units. The monthly average for samples and results entered were:

REFINERY	SAMPLES/MONTH	RESULTS/MONTH
Ardmore	4,700	30,000
Benicia	5,500	65,000
Corpus Christi	19,800	258,000
Houston	5,100	71,000
Knotz Springs	4,300	57,000
Paulsboro	9,200	61,000
Texas City	9,000	148,000

Reports used to support the lab and refinery operations include:

- Daily Completed Samples
- Daily Failed/Waived Results
- Daily Tank Results and Summary
- Missing Results
- Operational Morning Reports for GC Data, Products, and Process Units
- Lab Worksheets
- QA/QC Calibration
- Sample Receipt Status
- Sample Schedule by Test and Time
- Sample Schedule by Sample Point and Time
- Special Sample Count Report
- Template Listing
- Test and Test - Property Listings
- Trace Log

ABOUT LABVANTAGE OIL & GAS

Since 2018, LabVantage has offered LabVantage Oil & Gas, a pre-configured LIMS platform specifically for petrochemical and refining industries. Workflows for chemical and refining support labs improve lab efficiency while dramatically reducing deployment time and cost compared to a traditional LIMS.

TO LEARN MORE about LabVantage Oil & Gas visit <https://www.labvantage.com/oilandgas>



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ABOUT LABVANTAGE SOLUTIONS

A recognized leader in enterprise laboratory software solutions, LabVantage Solutions dedicates itself to improving customer outcomes by transforming data into knowledge. The LabVantage informatics platform is highly configurable, integrated across a common architecture, and 100% browser-based to support hundreds of concurrent users. Deployed on-premise, via the cloud, or SaaS, it seamlessly interfaces with instruments and other enterprise systems – enabling true digital transformation. The platform consists of the most modern laboratory information management system (LIMS) available, integrated electronic laboratory notebook (ELN), laboratory execution system (LES), and scientific data management system (SDMS); and, for healthcare settings, a laboratory information system (LIS). We support more than 1500 global customer sites in the life sciences, pharmaceutical, medical device, biobank, food & beverage, consumer packaged goods, oil & gas, genetics/diagnostics, and healthcare industries. Headquartered in Somerset, NJ., with global offices, LabVantage has, for four decades, offered its comprehensive portfolio of products and services to enable customers to innovate faster in the R&D cycle, improve manufactured product quality, achieve accurate record-keeping, and comply with regulatory requirements.

For more information, visit www.labvantage.com.