

## Data Acquisition System (DAS) Software for Air Compliance Monitoring & Reporting

### More than Just Software

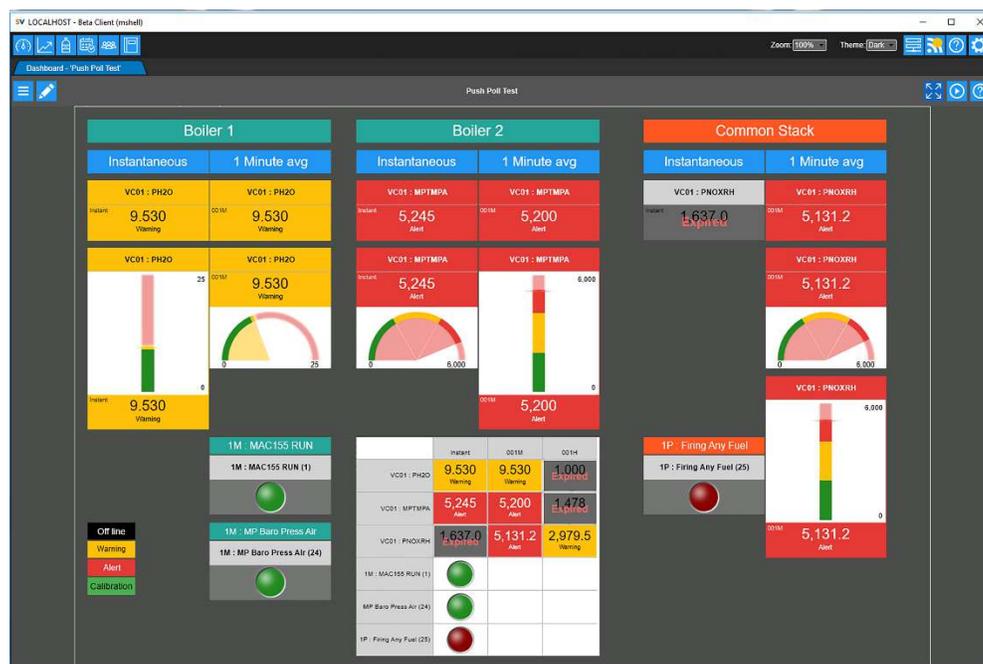
- Reporting, Regulatory, Engineering and IT expertise available from our staff of specialists
- ESC|DASProtect maintenance contracts that provide 24/7 access to technical support and quarterly software updates
- Tailored training to ensure the preparedness of your employees who manage the emissions reporting process
- Customer feedback and interaction opportunities through biannual User Group meetings, and the ESC Online Community
- The 8864 Data Controller, specifically designed to perform CEMS operations, provides the power and storage you need as you prepare for new rules or look to modernize your CEMS shelter

### Transparent, Configurable & Compliant with Regulations

ESC|StackVision is the most widely used DAS software across the U.S. with more than 3,100 air emission sources in the petrochemical, refining, electric power generation, steel, and pulp and paper industries relying on it for monitoring and reporting.

Our specialized software was designed to be a user-configurable DAS. Following initial setup of your StackVision DAS by ESC's implementation team, users will be able to view and edit their configurations as needed. This means security-enabled users can edit calculations, exceedance limits, alarms, add new parameters to be monitored, and possibly most important, they can do this without knowledge of programming languages. StackVision is a configured system, not a programmed solution.

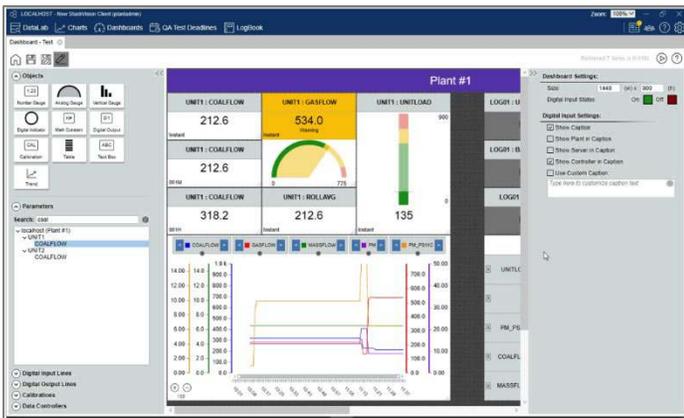
This software is specifically designed to meet the needs of air continuous monitoring compliance. StackVision's user-driven, innovative design keeps you on top of your compliance status and trends with a real-time set of tools and displays. StackVision provides you with the tools necessary to meet the monitoring and reporting requirements of EPA and state regulators.



# ESC|StackVision Key Features

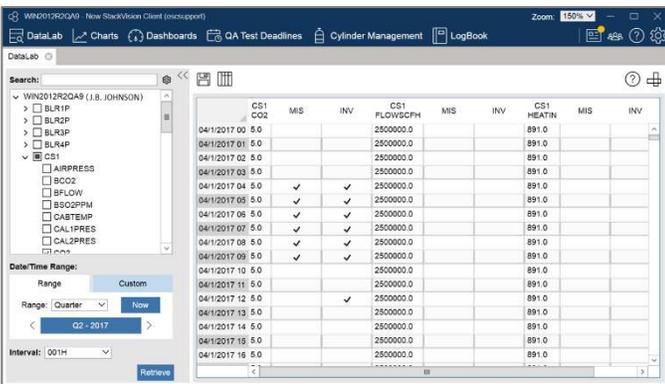
## User Configurable Dashboards

- Drag & drop gauges, digital input lines and tables that display real-time system data
- Set flags that change the display when certain conditions are met or exceeded
- View fleetwide system data in one location and in real time



## Analyze & Correct Monitoring Data

- Review and correct monitoring data using DataLab
- View data using powerful query and filtering tools
- Enter or overwrite data and automatically recalculate dependent data using ProcessNow
- Export data to Microsoft® Excel



## Configuration – ESC|StackStudio

- Dedicated tool for configuration including exceedance limits, calculations, averaging intervals and methods, alarms, validation rules, etc.
- Security-enabled users can make configuration changes without knowledge of programming

## Reports

- Large library of Permit (Part 60, 63, 75, etc) QA, Certification, General and System Design reports. Includes generation of XML files for ECMPS and CEDRI spreadsheets
- Group Report Generator for bulk generation of multiple reports simultaneously for output to files or email
- Task Scheduler for automated report generation and printing or distribution via email. Export to Microsoft Excel® or Adobe® PDF formats.

**CEMS Performance Summary**

<b>Company:</b> ABC Generating Station	<b>Report Period:</b> 06/01/2016 00:00 Through 06/30/2016 23:59
<b>Address:</b> 10801 N Mopac Austin, TX 78759	<b>Total Source Time in Report Period:</b> 692.65 Hours
<b>Source:</b> UNIT1	<b>Time Online Criteria:</b> 1 Minute(s)
<b>Pollutant:</b> SO2#/MM (SO2 LBM/MBTU) LBM/MBTU	<b>Manufacturer:</b>
<b>Interval:</b> 30 Day	<b>Model Number:</b>
<b>Limit:</b> 0.400	<b>Cert. Date:</b>

Causes of CEMS Excess Emissions	Duration of Excess Emissions (Hours)	Percent of Operating Time
E1 Start Up/Shut Down	24.00	3.46
E2 Control Equipment Failure	24.00	3.46
E3 Process Problems	24.00	3.46
E4 Other Known Excess Emissions Cause	48.00	6.93
E5 Unknown Excess Emission Cause	24.00	3.46
Normal Operation	0.00	0.00
<b>Total duration of excess emission</b>	<b>144.00</b>	<b>20.79</b>

## QA / Certification Tools

- Best Linearity/CGA and RATA tools
- Create records and analyze results in real-time while tests are being conducted
- Suite of reports designed to make reporting of QA / Certification data quick and easy

SV ATARELT - StackVision (plantadmin)

Select Data

Date/Time	Source	Parameter	Scale	Test Result	Reason for Test	Report In Comp
08/02/2015 06:42	UNIT1	COLOW	Low	Pass	Periodic Quality Assurance	
08/02/2015 08:00	UNIT1	COHIGH	High	Pass	Periodic Quality Assurance	
08/02/2015 09:22	UNIT1	NOXLOW	Low	Pass	Periodic Quality Assurance	
08/02/2015 09:41	UNIT1	O2	High	Pass	Periodic Quality Assurance	
08/02/2015 09:53	UNIT1	NOXHIGH	High	Pass	Periodic Quality Assurance	
08/02/2015 12:34	UNIT1	NOXLOW	Low	Pass	Periodic Quality Assurance	
08/02/2015 12:40	UNIT1	COLOW	Low	Pass	Periodic Quality Assurance	
08/02/2015 19:31	UNIT1	COHIGH	High	Pass	Periodic Quality Assurance	
08/02/2015 09:48	UNIT1	O2	High	Pass	Periodic Quality Assurance	
08/02/2015 09:02	UNIT1	NOXHIGH	High	Pass	Periodic Quality Assurance	
08/02/2015 03:51	UNIT1	NOXLOW	Low	Pass	Periodic Quality Assurance	
08/02/2015 11:24	UNIT1	COLOW	Low	Pass	Periodic Quality Assurance	
08/22/2015 19:31	UNIT1	O2	High	Pass	Periodic Quality Assurance	
08/22/2015 09:50	UNIT1	NOXHIGH	High	Pass	Periodic Quality Assurance	

Parameters x Start Page

Source	Name	Channel	Description	Units of Measure	Enable Test	Parameter Group	QA Enable Test	Parameter Code
BOILER	COINFL	BOILER (00)		LEHR	<input checked="" type="checkbox"/>	0 (STACK)	<input type="checkbox"/>	(None)
BOILER	CO_OR	BOILER (015)	ModBus - same as COPPMC	PPM	<input type="checkbox"/>	0 (STACK)	<input type="checkbox"/>	NOXC - NOx Concentration (g)
BOILER	COO_15	BOILER (016)		PPM	<input type="checkbox"/>	0 (STACK)	<input type="checkbox"/>	NOXC - NOx Concentration (g)
BOILER	COO_1HR	BOILER (020)		PPM	<input type="checkbox"/>	0 (STACK)	<input type="checkbox"/>	NOXC - NOx Concentration (g)
BOILER	COPPM	BOILER (003)		PPM	<input checked="" type="checkbox"/>	0 (STACK)	<input type="checkbox"/>	NOXC - NOx Concentration (g)
BOILER	COPPMC	BOILER (005)		PPM	<input checked="" type="checkbox"/>	0 (STACK)	<input type="checkbox"/>	NOXC - NOx Concentration (g)

Base Settings: Part 75 Settings Calibration Settings Reason Code/Action Code Settings Equation Settings

Has Equation?

Equation:  $K4*(20.9/(20.9-0.2))*(FLOWGAS*1000)*K1*(1E-6)/(1/60)*NOXPPM*.000001194*60=$

Dis Constituents?

Round Constituents?

Math Constant Controller (None)