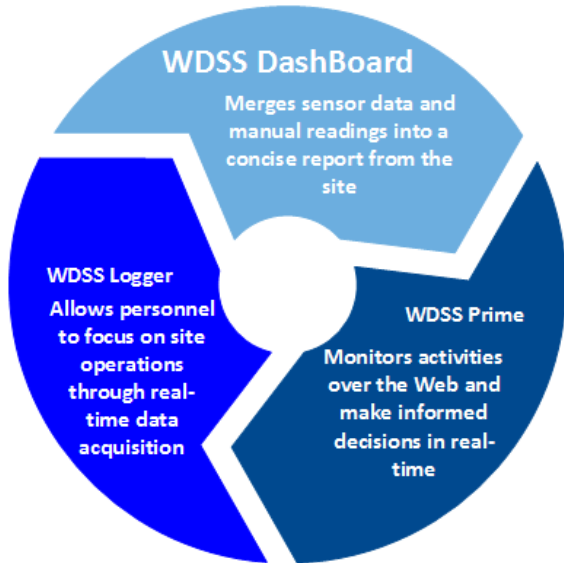


WDSS DashBoard

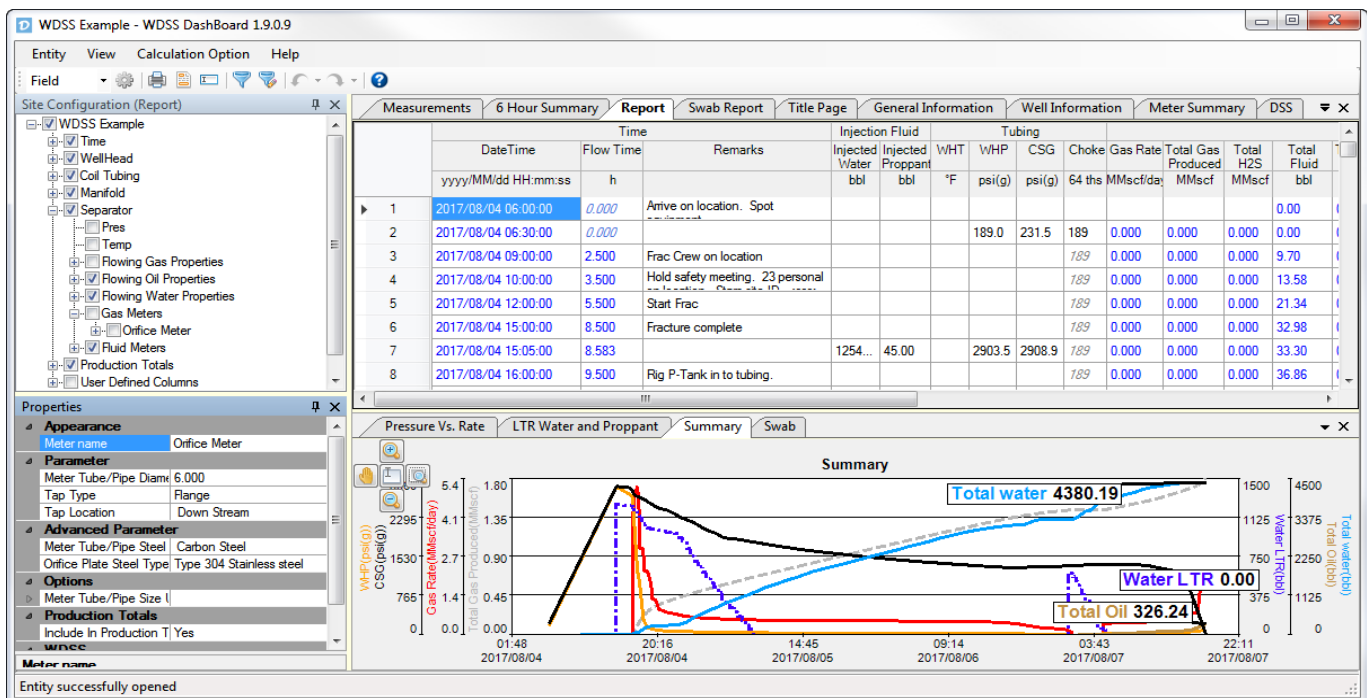
WDSS DashBoard is an operations monitoring solution for data collection and reporting from the field in real-time. Capture your data in real-time or by manual data entry, and quickly generate detailed plots and worksheets for analysis and professional reports.



- WDSS DashBoard is used for, but not limited to the following operations: production testing, frac flowback, water filtration monitoring, adjacent well monitoring, pipeline pigging and bottom hole pressure monitoring.
- WDSS DashBoard advantages include: being a standalone database solution, using industry standards for calculating rate, and having a fully customizable reporting system that allows for easily generated visual plots and custom worksheets used for analysis and professional reports.
- WDSS DashBoard advantages include: Being a standalone database solution, using industry standards for calculating rate, having a fully customizable reporting system that allows for easily generated visual plots and custom worksheets used for analysis and professional reports.

- You can make informed decisions from manual or real-time data, streamed online to our website WDSS Prime for client access at the office or on-the-go with their mobile device.

WDS Solutions helps users transform proprietary data into usable insights for future completion strategies by collecting and streaming top tier data for analytics.



Calgary Alberta Canada
sales@wds-solutions.com
wds-solutions.com

Real-time Data Acquisition

Via WDSS Logger, connect to any surface or sub-surface instrumentation that uses the following standard Modbus Protocol: TCP/IP, Serial/USB RS-485 and RS-232, and TCP/IP.

Use the Cloud to Monitor Test in Real-Time

With WDSS DashBoard's integrated connection to the WDSS Prime website, you and your clients can securely monitor how operations are progressing with instantaneous updates to plots, gauges and data tables.

Gas Calculations

Gas rates can be calculated using any of the following meter types:

- AGA 3 / API 2530-92 Orifice meter
- AGA 11 Coriolis meter
- Cone meter
- Flow prover & Choke
- Flow computer measured rates and volumes

Gas properties can be calculated using:

- AGA 8 Detail and Gross
- Benedict Webb Rubin equation of state method (BWR)

Monitor a commingled mixture of any 3 of these (N2, CO2, C1, C2, C3) frac gases and report net reservoir gas.

Fluid Calculations

Fluid rates can be calculated using any of the following meter types:

- Coriolis meter
- Tank level meter
- Flow computer measured rates and volumes

Oil shrinkage, GOR2 and liberated gas are calculated using:

- ASTM 1250D for API
- Vasquez & Beggs
- AlMarhoun

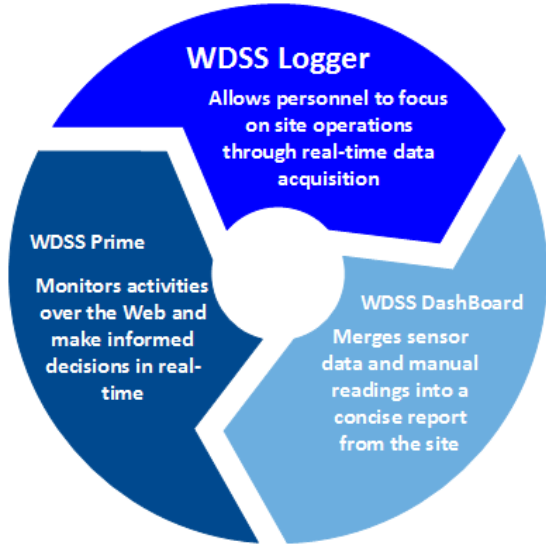
Separate fluid production into oil (stock tank equivalence), water, sediment and proppant.

In the Field

- Monitor the data acquisition and resulting calculations in real-time.
- Start a new job immediately by cloning a previous job.
- Create multiple worksheets to simplify the viewing of data and results.
- Create multiple plots emphasizing trends and diagnostics.
- Prepare custom documents to be included in reports.
- Securely transfer reports and other files to WDSS Prime website for access by your clients.
- AER (Alberta Energy Regulator) PAS (Pressure ASCII Standard) formatting and submitting.

WDSS Logger

WDSS Logger is a real-time data acquisition system that can connect to any surface or sub-surface instrumentation that uses standard Modbus Protocol.



- Be in the driver's seat and get the full picture of your data when you want – not just at a shift change or when the job is completed.
- Gain agility in executing time critical business decisions by accessing real-time information available within our commercial strength backend database.
- WDS Solutions suite can replace existing systems and stand on its own or seamlessly integrate into nearly any existing acquisition system.

WDSS Logger supports the following Modbus protocols:

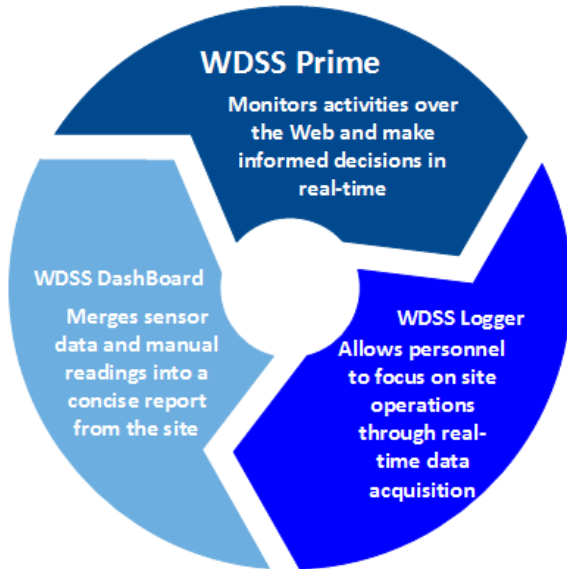
- Serial/USB RS-485 and RS-232
- TCP/IP
- Serial RTU over TCP/IP which is a hybrid that uses the Modbus serial protocol transmitted over a TCP/IP connection rather than a serial connection.

WDSS Logger includes:

- The ability to connect to multiple RTU's sequentially or concurrently.
- Handling of non-reading values such as -9999.
- A large variety of sensor types and unit types i.e. Pressure (psi, mPa,...), Mass Rate (lb/hr, kg/day,...)
- Different physical register configurations i.e. Float, Reverse Float, Integer, ...
- Reading registers using function code 3 (register series 40000) or 4 (register series 30000).
- Thresholds can be set — when a reading drops below a specified value, then a minimum value will be applied. This is ideal for use with gauge pressure sensors.
- Adjusting the readings to account for variations in the sensor.
- Hi and low alarms for both warning and danger conditions.
- Create and test multiple configurations before acquiring data.
- Create a template from a working configuration to use in other jobs.
- All readings are saved to a database for use with our monitoring software.

WDSS Prime Website

WDSS Prime meets the distinctive demands of the industry by providing real-time information to answer your most complex challenges.

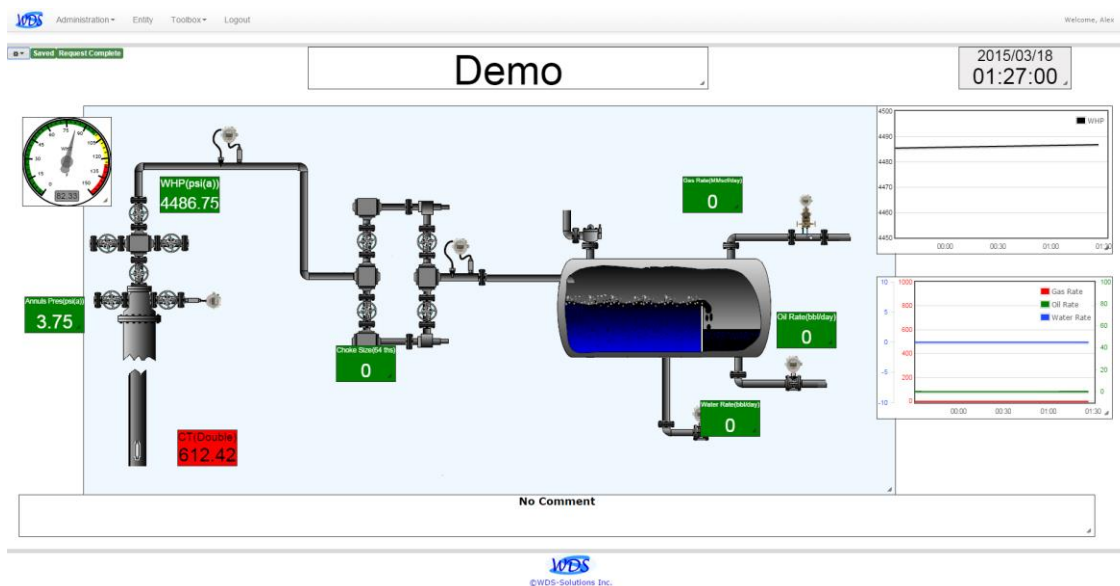


- WDSS Prime is a website that provides real-time data surveillance for a wide range of scenarios, including: production testing, adjacent well monitoring during frac operations, pipeline pigging operations and anything else that requires the user to see the results of their operations in real-time.
- Gain insight beyond post analytical data, by starting at the beginning with real-time, and evaluating as you go.
- WDSS Solutions suite of software broadens an engineer's capabilities and increases productivity.

WDSS Prime provides the end user with the following tools:

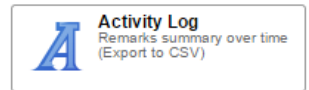
Dash Panels

The Dash Panel provides the best visual representation of the real-time data as it is sent from the field. Within a Dash Panel you can display plots, background images, digital and analog gauges. Each item is resizable and can be positioned anywhere on the page.



Activity Log

Provides a ranged summary of all remarks sent to the website in ascending or descending order. The summary can be exported as a comma separated value (.csv) file.



Data Table

The data table provides a tabular listing of the sensor data. The sensor data can be filtered, viewed and exported as a comma separated value (.csv) file



Digital Gauges

This is a quick view of 8 sensors as digital readings. It is also used to configure the gauge view for the mobile apps.



File Download

The file download page provides a listing of all the files posted to the website by the operators, which can then be downloaded by the users.



Files can only be uploaded to the website by using WDSS Transmitter which supports automatic and multi-file uploads.

Mobile Configuration

The mobile configuration page allows the user to configure the plot view for use on mobile devices.



Security

The WDSS prime website uses 256 bit SSL encryption and a three-tier user authentication process.

Vendor Neutral

WDSS is committed to being communication vendor neutral, meaning you choose which communications vendor best meets your requirements for providing internet access at your location.

User Administration

Managing accounts and users on the WDSS Prime website is very simple.

It is divided into three parts:

- The first part is the contact management system.
- The second part manages accounts, jobs and entities.
- The third part configures WDSS Prime for receiving data transmissions.

WDSS Virtual RTU

WDSS Virtual RTU is a desktop utility that acts as a Modbus slave. It forwards data gathered in WDSS Logger to any Modbus master that queries it.

WDSS Virtual RTU supports the following Modbus protocols:

- Serial/USB RS-485 and RS-232
- TCP/IP (future)
- Serial RTU over TCP/IP which is a hybrid that uses the Modbus serial protocol transmitted over a TCP/IP connection rather than a serial connection.

WDSS Virtual RTU provides:

- The ability to connect to multiple Master devices concurrently.
- Has a large variety of sensor types and unit types i.e. Pressure (psi, mPa,...), Mass Rate (lb/hr, kg/day,...)
- Different physical register configurations i.e. Float, Reverse Float, Integer, ...
- Access to registers using function code 3 (register series 40000) or 4 (register series 30000).



