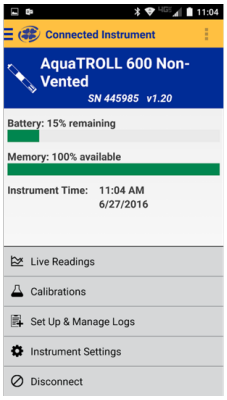
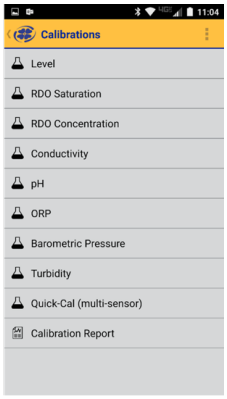
How to Perform a Low-Flow Test with VuSitu

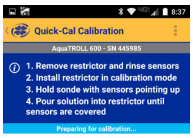
In this tech note, you'll learn how to use VuSitu with the Aqua TROLL 600 Multiparameter Sonde to conduct a low-flow test. Once your test is complete, it's easy to save the results to your mobile device. You can then share your test report via email, text or cloud storage.



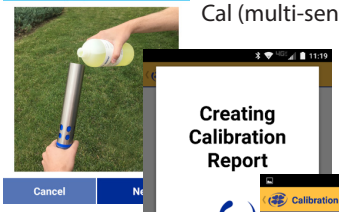


Calibration Sequence

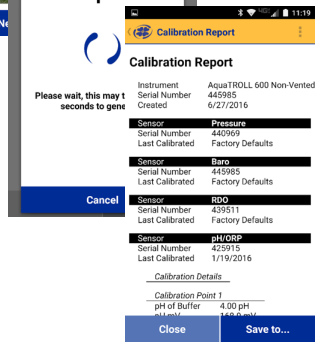
Open VuSitu and connect to the Aqua TROLL 600. If you cannot connect, remember to loosen and then tighten the battery compartment on the sonde. This will reset the Bluetooth connection and you will automatically connect with the instrument. The LCD display on the Aqua TROLL 600 will light up when you do this. If a serial number appears, you know it is working.



Once connected, click on **Calibrations** and calibrate to your specifications or click on Quick-Cal (multi-sensor) calibration.



Calibration will be automatic, and a calibration report will be created.



Click on **Save to**… and save your Calibration Report to the cloud or e-mail it to yourself.

1. Flip and Pour

After thoroughly cleaning and rinsing the sonde and sensors, flip the restrictor into calibration & storage mode. Hold the sonde with the sensors pointing up. Pour the calibration standard directly into the restrictor until the sensors are covered.

2. Hold and Calibrate

Continue holding the sonde in a vertical orientation with the sensors pointing up. This prevents bubbles from forming on the sensor face. Perform the calibration using VuSitu or WinSitu 5.

3. Rinse and Rinse

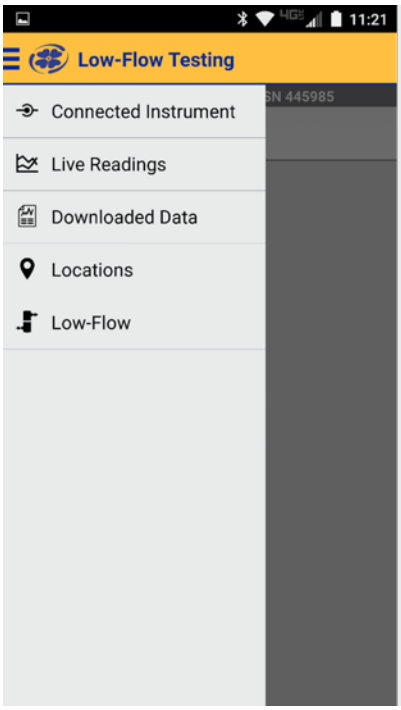
Between calibrations and calibration points, discard the calibration standard, remove the restrictor and rinse all parts thoroughly with deionized water. For best results, follow the water rinse by rinsing twice with the standard to be used for the next calibration point.

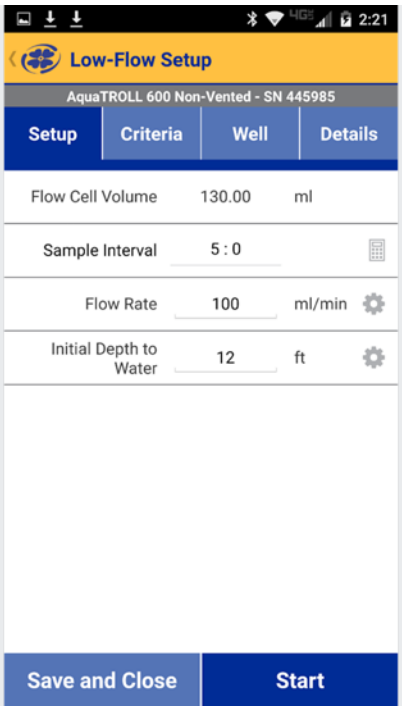
VuSitu Low-Flow Test Procedure...

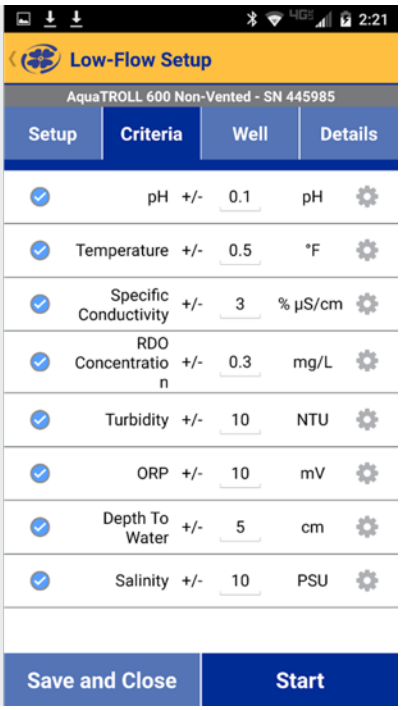
- **Calibrate the Aqua TROLL 600**
- **Select Low-Flow from the VuSitu menu**
- **Configure and run the test**
- **Save and share test report**

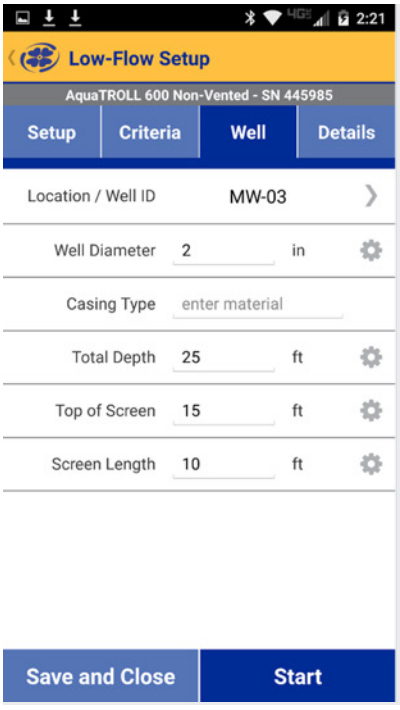
Running the Test

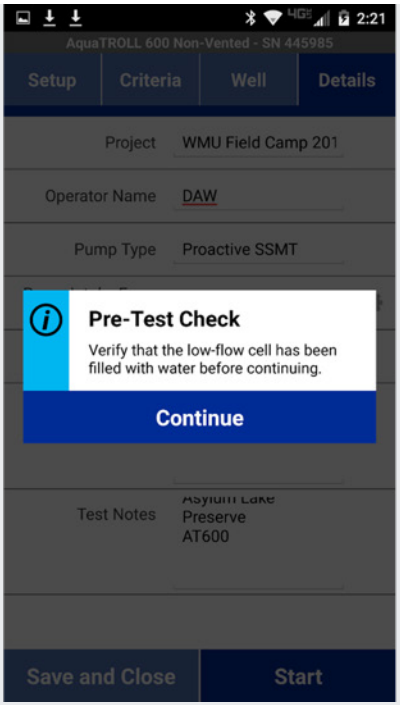
To begin your sampling regime, set up on the well you want to sample, click on the upper-left menu bars, click on **Low-Flow**, choose the well template with the corresponding well you are sampling, review the Setup – Criteria – Well – Details and click **Start** when ready. Make sure you have a stable flow and drawdown established when you start the test. Click **Start**. The low-flow sampling sequence will run automatically.

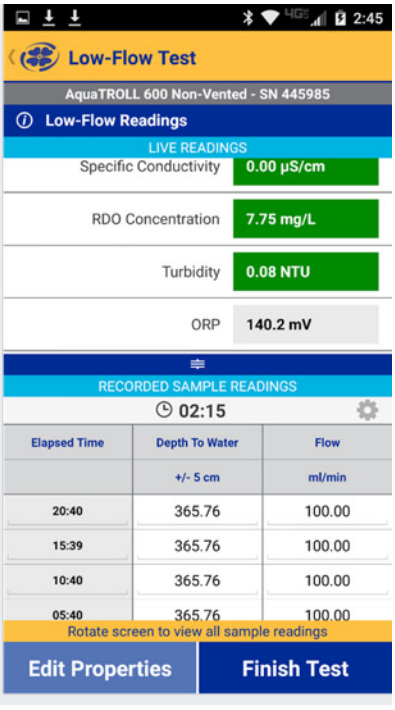












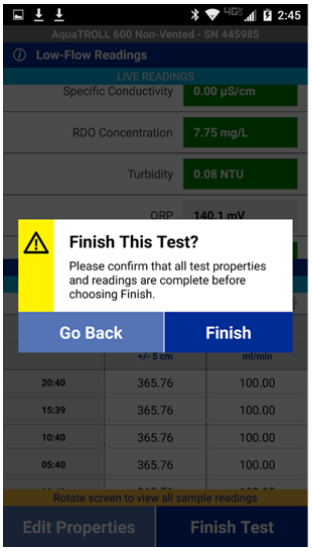
Elapsed Time	Depth To Water	Flow	pH	Temperature	Specific Conductivity	RDO Concentratio	Turbidity	ORP
	+/- 5 cm	ml/min	+/- 0.1 pH	+/- 0.5 °F	+/- 3%µS/cm	+/- 0.3 mg/L	+/- 10 NTU	+/- 10 mV
15:39	365.76	100.00	6.21	77.06	0.00	7.78	0.06	192.9
10:40	365.76	100.00	6.76	76.94	0.00	7.78	0.09	162.6
05:40	365.76	100.00	8.09	76.80	0.00	7.80	0.03	148.0
00:40	365.76	100.00	11.65	76.63	0.00	7.82	0.06	103.4

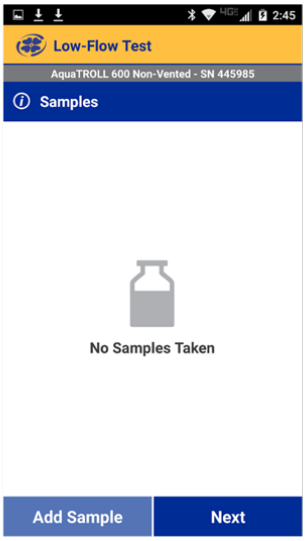
Rotate screen to view Live Readings

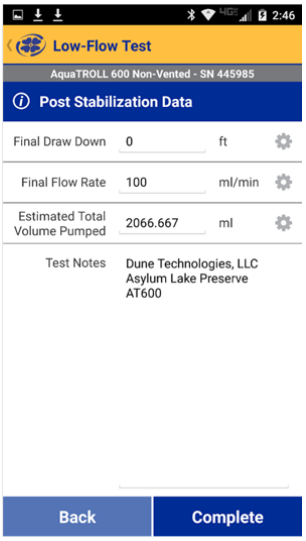
The software needs at least three water quality parameter readings to run a 3-point running average in order to calculate the stabilization values. For the sample set (A, B, C), [(Max-Min)/A] X 100 = Running Average.

You can rotate the screen to see all the water quality parameters being collected. The software will record your sample interval and show you a countdown until your next sample is taken.

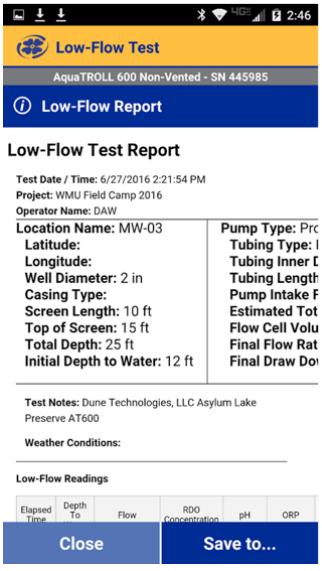
Once a parameter has reached stabilization, the field turns green. When all the fields have stabilized for the required number of readings you can click on **Finish Test**.

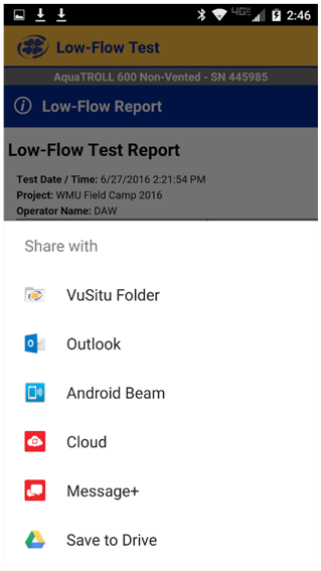


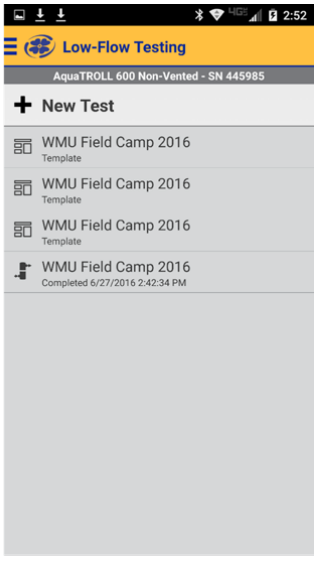




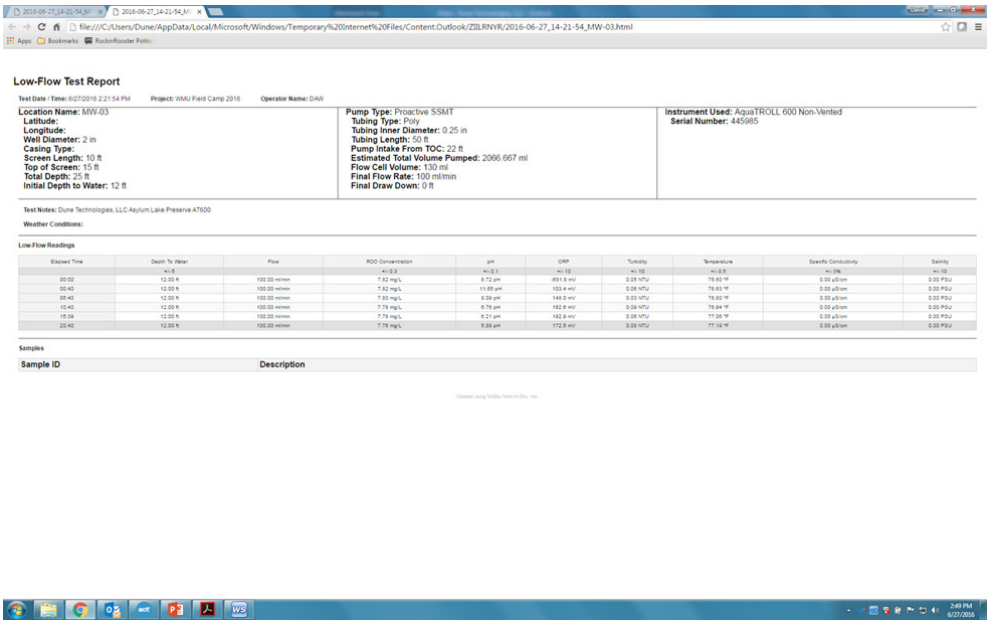
When you finish the test, you will have the option of recording laboratory samples that you collect for the well in question, and record any post-stabilization data. When you are satisfied, click **Complete**.







Once your test is complete, you will have the ability to review the data file, and then click **Save to**… You can then choose to save the file, text, e-mail, or store the file on the cloud, ensuring that you will not lose any data. The sampling event is also automatically stored on your mobile device. Then organize and manage your data to your specifications.



Low-Flow Test Report

Test Date / Time: 6/27/2016 2:21:54 PM Project: WMU Field Camp 2016 Operator Name: DAW

Location Name: MW-03
Latitude:
Longitude:
Well Diameter: 2 in
Casing Type:
Screen Length: 10 ft
Top of Screen: 15 ft
Total Depth: 25 ft
Initial Depth to Water: 12 ft

Pump Type: Proactive SSMT
Tubing Type: Poly
Tubing Inner Diameter: 0.25 in
Tubing Length: 50 ft
Pump Intake From TOC: 22 ft
Estimated Total Volume Pumped: 2066.667 ml
Flow Cell Volume: 130 ml
Final Flow Rate: 100 ml/min
Final Draw Down: 0 ft

Instrument Used: AquaTROLL 600 Non-Vented
Serial Number: 445985

Test Notes: Dune Technologies, LLC Asylum Lake Preserve AT600

Weather Conditions:

Low-Flow Readings

Elapsed Time	Depth To Water	Flow	RDO Concentration	pH	ORP	Turbidity	Temperature	Specific Conductivity	Salinity
	+/- 5		+/- 0.3	+/- 0.1	+/- 10	+/- 10	+/- 0.5	+/- 3%	+/- 10
00:00	12.00 ft	100.00 ml/min	7.82 mg/L	8.72 pH	-651.8 mV	0.05 NTU	78.60 °F	0.00 µS/cm	0.00 PSU
00:40	12.00 ft	100.00 ml/min	7.82 mg/L	11.65 pH	103.4 mV	0.06 NTU	78.63 °F	0.00 µS/cm	0.00 PSU
05:40	12.00 ft	100.00 ml/min	7.80 mg/L	8.59 pH	148.0 mV	0.03 NTU	78.93 °F	0.00 µS/cm	0.00 PSU
10:40	12.00 ft	100.00 ml/min	7.78 mg/L	8.78 pH	162.6 mV	0.04 NTU	79.94 °F	0.00 µS/cm	0.00 PSU
15:39	12.00 ft	100.00 ml/min	7.78 mg/L	8.21 pH	192.9 mV	0.06 NTU	77.06 °F	0.00 µS/cm	0.00 PSU
20:40	12.00 ft	100.00 ml/min	7.78 mg/L	8.69 pH	172.6 mV	0.06 NTU	77.10 °F	0.00 µS/cm	0.00 PSU

Samples

Sample ID	Description

When you save the file by e-mail, three separate files are saved and sent to your computer: an HTML display of the data report (above), an Excel file with the formatted data, and a PDF file. All files are automatically generated.