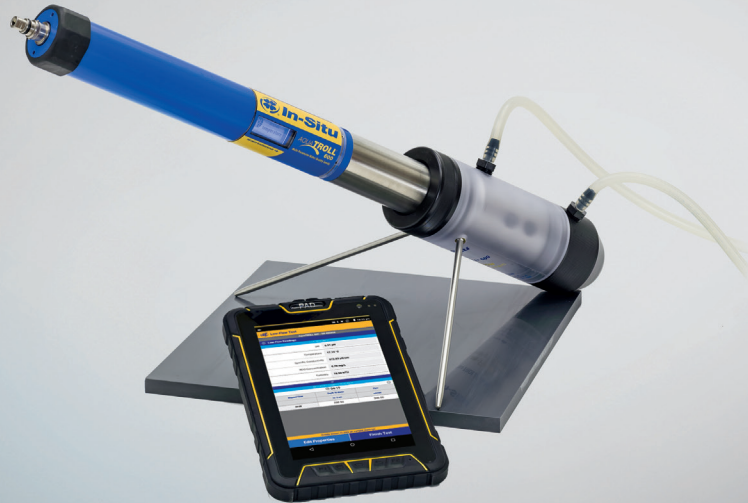




IN-SITU®

Aqua TROLL 600 Low-Flow Sampling System



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LOW-FLOW PURGING AND SAMPLING (ASTM STANDARD D67771) IS A WELL-KNOWN METHOD OF EXTRACTING GROUNDWATER SAMPLES FROM A WELL AT A VERY LOW RATE (LESS THAN 500 ML/MIN) IN ORDER TO MINIMIZE CONTAMINANT VOLATILIZATION AND THE AMOUNT OF WASTEWATER GENERATED. THE IN-SITU LOW-FLOW SAMPLING SYSTEM AND VUSITU™ MOBILE APP SAVES YOU TIME AND MONEY BY IMPROVING LOW-FLOW SAMPLING EFFICIENCY, MINIMIZING ERRORS, AND PRODUCING PROFESSIONAL AND DEFENSIBLE REPORTS.

ADVANTAGES TO LOW-FLOW SAMPLING

The low-flow purging and sampling methodology offers several advantages over traditional purging methods. These include:

- **Improved sample quality** through reduced turbidity and minimized degassing and volatilization. Since turbidity no longer measurably affects sample chemistry, sample filtration can be eliminated, further reducing sampling costs and analytical expenses.
- **Improved sample accuracy and precision**, allowing users to identify true trends in geochemistry, and avoiding regulatory issues with suspected contamination and costly resampling to explain erroneous results.
- **Simpler and less expensive sampling systems**, as the need for high-flow purging pumps is eliminated.
- **Increased well life** via low pumping rates, which preserve the integrity of the filter pack and well seal, and reduce the movement

of fine sediments into the well, extending the useful life of the well and reducing the need for well maintenance.

TOTAL FIELD SUPPORT

- Receive free, 24/7 technical support and online resources.
- Order or rent instruments and accessories from the In-Situ website.
- Get guaranteed 7-day service for maintenance (U.S.A. only).

VUSITU GROUNDWATER SAMPLING ASSISTANT

- **Automated test setup:** Software retains location and well information, which can be viewed at each sampling event. Simply select the sampling location from a pick list at each sampling event and all historical information is available.
- **Automated data collection:** Stabilization criteria are set for each monitored parameter and data collection intervals are defined by time or pumped volumes. The software automatically calculates and displays variance during the sampling event. Data is logged automatically at determined intervals.
- **Automated test and calibration reports:** After stabilization, stored data can be exported to Microsoft® Excel®. VuSitu automatically generates full calibration and sample reports that conform to federal and regional regulations. You'll eliminate calculations and transcription errors. Plus, you can customize reports to better meet your clients reporting requirements.

Applications:

- **FEDERAL SITES: SUPERFUND, RCRA, DOD & DOE**
- **STATE CLEANUP SITES**
- **CHLORINATED & CVOC CONTAMINATED SITES**
- **WHERE REQUIRED BY SOP**

RICE Earth Sciences

A DIVISION OF RICE RESOURCE TECHNOLOGIES

GENERAL		AQUA TROLL 600 MULTIPARAMETER WATER QUALITY SONDE		
OPERATING TEMP.	-5 to 50° C (23 to 122° F)			
STORAGE TEMP.	Components without fluid: -40 to 65° C (non-freezing water); pH/ORP sensors -5 to 65° C			
DIMENSIONS & WEIGHT	Dimensions: 4.7 cm (1.85 in.) OD x 59.2 cm (23.3 in.) (includes connector); With bail: 72.9 cm (28.7 in.) Weight: 694 g (1.53 lbs)			
WEIGHT	1.45 kg / 3.2 lbs (includes all sensors, batteries, and bail)			
WETTED MATERIALS	PC, PC alloy, Delrin™, Santoprene™, Inconel™, Titanium, Viton®, Platinum, Ceramic, Nylon			
ENVIRONMENTAL RATING	IP68 with all sensors and cable attached; IP67 without sensors, battery cover, or cable attached			
MAX PRESSURE RATING	Up to 350 psi			
READING RATE	1 reading every 2 seconds, 1 parameter, no wiping			
INTERNAL MEMORY¹ Micro SD Card²	16 MB 8 GB micro SD card included, user-replaceable			
SOFTWARE Interface	Android™: VuSitu through Google Play™ and Amazon® App Store; iOS: VuSitu through Apple® App Store; Windows®: Win-Situ 5; Data Services: HydroVu™ Data Services Android 4.4, requires Bluetooth 2.0; Win-Situ 5 Software			
CABLE/OUTPUT OPTIONS	Vented or non-vented polyurethane or vented Tefzel®; RS485/Modbus; SDI-12; Bluetooth®			
INTERNAL POWER/BATTERY³	2 internal user-replaceable Alkaline D batteries; >6 months typical w/ wiping, >9 months typical w/out wiping			
EXTERNAL POWER VOLTAGE EXTERNAL POWER CURRENT⁴	8-36 VDC (not required for normal operation); Sleep: 0.10 mA typical Measurement: 15 mA typical, 45 mA max			
LOGGING MODES/RATE	Linear, Linear Average, and Event; 1 minute to 99 hours			
STANDARD SENSORS	ACCURACY	RANGE	RESOLUTION/ PRECISION	UNITS OF MEASURE/ METHOD
TEMPERATURE⁵	±0.1° C	-5 to 50° C (23 to 122° F)	±0.1° C or better	Celsius or Fahrenheit Method: EPA 170.1
BAROMETRIC PRESSURE	±1 mbar	300 to 1,100 mbar	0.1 mbar	psi, kPa, bar, mbar, mmHg, inHg; Method: Silicon strain gauge
PH⁶	±0.1 pH unit or better	0 to 14 pH units	0.01 pH unit	pH units; Std. Methods 4500-H+/ EPA 150.2
ORP⁷	±5 mV	±1,400 mV	0.1 mV	mV; Std. Methods 2580
CONDUCTIVITY⁸ SALINITY (DERIVED FROM CONDUCTIVITY AND TEMP)	±0.5% of reading plus 1 µS/cm from 0 to 100,000 µS/cm; ±1.0% of reading from 100,000 to 200,000 µS/cm; ±2.0% of reading from 200,000 to 350,000 µS/cm	0 to 350,000 µS/cm Salinity: 0 to 350 PSU	0.1 µS/cm Salinity: 0.1 PSU	Actual conductivity (µS/cm, mS/cm); Specific conductivity (µS/cm, mS/cm); Salinity (PSU); Total dissolved solids (ppt, ppm); Resistivity (Ohm-cm); Std. Methods 2510/ EPA 120.1 Salinity: PSU; Std. Methods 2520A
TDS (DERIVED FROM CONDUCTIVITY AND TEMP)	±0.1° C	-5 to 50° C (23 to 122° F)	0.01° C or better	Celsius, Fahrenheit
RUGGED DISSOLVED OXYGEN (RDO®) WITH RDO-X®	±0.1 mg/L ±2% of reading	0 to 20 mg/L 20 to 60 mg/L	0.01 mg/L	mg/L, % saturation, ppm EPA-approved In-Situ Methods: 1002-8-2009, 1003-8-2009, 1004-8-2009
TURBIDITY/ TSS¹⁰ (DERIVED FROM TURBIDITY)	±2% of reading or ±2 NTU, FNU, whichever is greater	0 to 4,000 NTU TSS: 1 to 1,500 mg/L	0.01 NTU (0 to 1,000); 0.1 NTU (1,000 to 4,000) TSS: 0.1 mg/L	NTU, FNU Method: ISO 7027 TSS: ppt, mg/L
PRESSURE¹¹ (OPTIONAL)	±0.1% FS from -5 to 50° C	Non-Vented or Vented 9m (30ft) (Burst: 27m; 90ft) 30m (100ft) (Burst: 40m; 130ft) 76m (250ft) (Burst: 107m; 350ft) 200m (650ft) (Burst: 229m; 750ft)	±0.1% full scale (FS)	Pressure: psi, kPa, bar, mbar, inHg, mmHg Level: in, ft, mm, cm, m, cmH2O, inH2O
WARRANTY¹²	2-year warranty on sonde, RDO and sensor cap, temp/conductivity, temp only, turbidity (excluding pH/ORP). 1-year warranty on pH/ORP, accessories. Other: see www.in-situ.com/warranty .			
NOTES	1) For 30 parameters >100,000 data records, > 3 years at 15 min. interval. A single data record includes time stamp, temperature, RDO, pH, ORP, turbidity and conductivity logged in Linear or Linear Average mode. 2) Log data recorded to SD card in comma delimited variable (CSV) file format. 3) Logging all sensors at 15 min interval on 2 D Alkaline batteries. Battery life dependent on site conditions and wiping. 4) Dependence on display and wiping. 5) Sensor only, when transferring from air to ambient water temperature. Typical system response time with all sensors and restrictor: T63<30s, T90<3.5m, T95<7.5m. 6) Response time at thermal equilibrium. 7) Accuracy from calibration standard @ 25C, response-at thermal equilibrium immediately following calibration measuring from air to +400 mV. 8) Accuracy at calibration points. 9) RDO sensor full range 0-50mg/L, 0-500% sat. EPA-approved under the Alternate Test Procedure process. 10) User-defined reference. 11) Typical performance across full temperature and pressure calibrated range. 12) Extended warranty option for sonde only (1 to 3 year extension for up to 5 years total).			

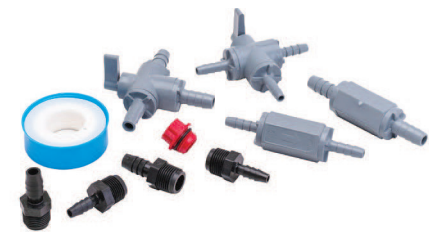
LOW-FLOW RENTAL KIT INCLUDES:



1) Micro USB charger for Android tablet and Wireless TROLL Com; 2) Aqua TROLL 600 Multiparameter Water Quality Sonde (batteries included); 3) Android tablet w/ VuSitu App; 4) Wireless TROLL Com with carrying case and belt clip; 5) Integrated calibration cap



6) Base plate; 7) Low-Flow Flow Cell; 8) Quick-Cal Solution 9) Fittings kit; 10) Tefzel Rugged Cable



Aqua TROLL 600 Low-Flow Fittings Kit

WHY ADOPT THIS PLATFORM?

- Digitally control all your data
- Program site & sampling data in advance
- Better QA/QC through reduced field errors & data entry
- Comprehensive data capture - sampling & calibration
- Rapid report preparation & data management
- Create professional-looking, digital deliverables

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