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# CDOM WETStar Characterization

Date: July 14, 2009 S/N: WSCD-859

CDOM (Quinine Sulfate Dihydrate Equivalent) concentration expressed in ppb can be derived using the equation:

**CDOM (QSDE) (ppb) = Scale Factor x (Output - Clean Water Offset)**

| | Analog output |
|---|---|
| **Clean Water Offset (CWO)** | 0.070 V @ |
| **Scale Factor (SF)** | 25.7 ppb/V @ |
| Maximum Output | 5.46 V @ |
| Resolution | 1.20 mV |
| Ambient Characterization Temperature | 22 ± 1°C |
| Current Draw | 40 mA @ 12V (typical) |
| 12-hour Stability | 1.55 mV/hr |
| Temperature Stability, 25–2 °C | 1.48 mV/°C |

Definitions:

**CWO:** Clean Water Offset value obtained using pure filtered de-ionized water.

**SF:** Determined using the following equation: SF = x/(output - CWO), where x is the concentration of the solution used during the instrument characterization. SF is used to derive instrument output concentration from the raw signal output of the fluorometer.

**Maximum Output:** Maximum signal output of the fluorometer.

**Resolution:** Standard deviation of 1 minute of clean water data, sampled once per second.

**Ambient Characterization Temperature:** Room temperature at time of characterization.

**Current Draw:** The amount of current the instrument uses for operation.

**12-hour Stability:** Deviation of output averaged over 12 hours.

**Temperature Stability:** Measured output variation per degree.

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# WETStar Calibration and Repairs

**Date** July 14, 2009 **Customer** Oregon State University

**S/N#** WSCD-859 **Repair Order** 6675

## Standard Service

- Performed noise test: 1 sample/sec for 60 sec
- Performed stability test: 1 sample/min for 12 hrs
- Performed temperature test: 25–2 °C
- Performed saturation test
- Shake-tested unit
- Pressure-tested unit
- Updated unit's calibration sheet

## Additional Repairs

Replaced Bulkhead Connector, Power Board and O-Rings.

## Comments