|  |  |
| --- | --- |
|  **SONDE CALIBRATION WORKSHEET** | Rev. 2018July10 |
| Sonde ID: |   | Date/Time: |  |  | Technician: |   |   |
| Project: |   |  | Battery Voltage: |  |  |
|  |  |  |  |  |  |
| **Dissolved Oxygen** | Barometric Pressure: mmHg  | **Pass Criteria: ± 2% RP, ±5% Optical** |
|  | Initial Reading |  | Calibrated Reading |  | Temperature (oC) |  | Pass/ Fail |
|  | % | mg/L |  | % | mg/L |  |  |   |  |
|  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |   |
|  |  DO Charge\* (RP): |  | (Range: 50 +/- 25) | DO Gain\*: |  | (Range: 0.7 to 1.4) |  |
|  ODO Gain\*: |  | (Range: 0.25 to 1.25) | (Not Local Gain!!!) |  |
| **\***Record AFTER probe calibration. If not displayed, look in: Sonde Menu --> Advanced --> Calibration Constants |
|  |
| **Specific Conductance** | Calibration Constant:\_\_\_\_\_\_\_\_\_\_\_ |  |  **Pass Criteria: ± 5% ±1 µS/cm** |
|  | Standard Value (µS/cm) |  | Standard Lot # |  | Initial Reading (µS/cm) |  | Calibrated Reading (µS/cm) |  | Temp. (oC) |  | Pass/ Fail |
|  | 0 *(Hydrolab)* |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| **pH** |  |  |  |  |   **Pass Criteria: +/- 0.2 su** |
| Value (su) |  | Buffer Lot # |  | Initial Reading (su) |  | Calibrated Reading (su) |  | mV \* |  | Temp. (oC) |  | Range (mV) | Pass/Fail |
| 7 |  |  |  |   |  |   |  |   |  |  |  | (0 +/- 50) |   |
| 4 |  |  |  |   |  |   |  |   |  |  |  | (+180+/-50) |   |
| 10 |  |  |  |   |  |   |  |   |  |  |  | ( -180+/-50) |   |
| **\*Note:** Difference in mV between pH4 and pH 7, and pH 7 and pH 10 should be approximately 165 to 180 mV(ex. 165 mV - (-10) mV = 175 mv). If not, probe should be reconditioned and recalibrated. mV1(\_\_\_\_\_\_\_\_) – mV2(\_\_\_\_\_\_\_\_) = \_\_\_\_\_\_\_\_\_ mV |
| **Turbidity** |  |  |  | **Pass Criteria: see chart** |
|  Value (NTU) |  | Standard Lot # |  | Initial Reading (NTU) |  | Calibrated Reading (NTU) |  | **Note:** YSI 6920V2 & 600OMS, Calibrate 0 NTU with probe guard in clear container | Pass/Fail |
| 0 |  |  |  |   |  |   |  |   |
|  |  |  |  |   |  |   |  |   |
|  |  |  |  |   |  |   |  |   |
|  |  |  |  |  |  |  |  |  |  |  |
| **Calibration Verification** | Date/Time: |  |  | Technician: |  |  |
| Dissolved Oxygen |  | Temperature (oC) |  | Pressure (mmHg) |  | DO Charge/Gain |  | P/F or LTD Qual. |
| % | mg/L |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |
| Specific Conductance (µS/cm) |  | Standard Lot # |  | Reading (µS/cm) |  |  |  | Temp. (oC) |  | P/F or LTD Qual. |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| pH Value (su) |  | Buffer Lot # |  | Reading (su) |  | mV |  | Temp. (oC) |  | P/F or LTD Qual. |
|   |  |  |  |  |  |  |  |  |  |   |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| Turbidity Value (NTU) |  | Standard Lot # |  | Reading (NTU) |  |  |  |  |  | P/F or LTD Qual. |
| 0 |  | DI |  |  |  |  |  |  |  |  |
| 126 YSI (100 HL) |  |  |  |  |  |  |  |  |  |  |
| 1000 |  |  |  |  |  |  |  |  |  |  |
|   |  |  |  |  |  |  |  |  |  |   |
| **SONDE CALIBRATION WORKSHEET** |
|  |  |  |  |  |
|   |  | **Post Calibration Rapid Pulse DO Sensor Output Test** |  |   |
| Disable Wait For DO. Turn off handset (650MDS). Wait 1 minute, turn handset on and enter "Run". DO % Sat. **must** start reading with a high value and descend to the calibration value in 1 to 2 minutes. **If it does not, reject.** **Note:** Disregard the first two readings as they may be affected by the warm-up process. |
|
|
|   |  | Accept   |  | Reject  | See note in comments |
|   |  |  |  |  |  |   |
| **Maintenance** |  **Yes** |  **No** | **Note** |
| Rapid Pulse Membrane Changed? |  |  |  | If yes, run probe at least 15 mins before calibration. |
| ROX Wiper parks ~180 degrees from optic port?  |  |  |  |  |  |
| ROX Wiper Changed? |  |  |  |  |  |
| Turbidity Wiper parks ~180 degrees from optic port? |  |  |  |  |  |
| Turbidity Wiper Changed? |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  | **Calibration Comments** |  |  |  |
|   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |
|   |   |   |   |   |   |   |   |   |
|   |  |  |  |  |  |  |  |   |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

**QA Criteria:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | Standard | Standard Value | In-Calibration Range | Linear Interpolation Range(Max AllowableLimits) |
| Temperature, °C | NIST Traceable Thermometer | Ambient Temperature | ± 0.5 | ± 2 |
| Conductivity µS/cm | Standard Solution | 1413, 8974, 10000 | ± 5% ±1 | ± 30% |
| Conductivity µS/cmHydrolab only | Air | 0 | ± 1 µS/cm | ± 5 µS/cm |
| Dissolved Oxygen, % | Saturated Air | 100 | RP ±2%Optical ±5% | ± 30% |
| pH, SU | Buffer Solution | 4, 7, 10 | ± 0.2 | ± 1 |
| Turbidity, NTU | DI Water | 0 | ± 1 | ± 10 |
| Standard Solution | 100 (HL), 126 (YSI) | ± 5 | ± 30 |
| 1000 | ± 50 | ± 300 |
| Parameter | CorrectedQualifier (LTD only) | RejectedQualifier |
| Temperature, °C | **CT** | **RT** |
| Conductivity, µS/cm | **CSC** | **RSC** |
| Dissolved Oxygen, % | **C%** | **R%** |
| Dissolved Oxygen, mg/L | **CDO** | **RDO** |
| pH | **CPH** | **RPH** |
| Turbidity, NTU | **CY** | **RY** |