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| **SONDE CALIBRATION WORKSHEET** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Rev. 2020April7 | | | | | | | | | | | | | | | |
| Sonde ID: | | | | | |  | | | | | | Date/Time: | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | | |  | | | | | | | | | | | | | | Technician: | | | | | | | | | | | | | | | | | |  | | | | | | | | |  | | | | | | | | |
| Project: | | | | | |  | | | | | |  | | | | | | | | | | | Battery Percent Remaining: | | | | | | | | | | | | | | | | | | | |  | | | | | | | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **Dissolved Oxygen** | | | | | | | | | | | | Barometric Pressure: mmHg | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **Pass Criteria: ± 5%** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | Initial Reading | | | | | | | | | | | | | | | | | | | | | | |  | Calibrated Reading | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | Temperature (oC) | | | | | | | | | | | | | | | |  | | | | | | | Pass/ Fail | | | | | | |
|  | | % | | | | | | | | | mg/L | | | | | | | | | | | | | |  | % | | | | | | | | | | mg/L | | | | | | | | | | | | | | | | | | | | |  | | | | | |  | | | | | | | | | | | | | | | |  | | |  | | | | | | | | | | |
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| **Specific Conductance** | | | | | | | | | | | | | | | | | | | | | | | Calibration Constant:\_\_\_\_\_\_\_\_\_\_\_ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | | **Pass Criteria: ± 5%** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | Standard Value (µS/cm) | | | | | | | | | | |  | | | Standard Lot # | | | | | | | | | | | | | |  | | Initial Reading (µS/cm) | | | | | | | | | | | | | | | | | |  | | Calibrated Reading (µS/cm) | | | | | | | | | | | | | | | | | | | | | |  | | | Temp. (oC) | | | | | | | | | | | | | |  | Pass/ Fail | | | | | |
|  | 1,413 | | | | | | | | | | |  | | |  | | | | | | | | | | | | | |  | |  | | | | | | | | | | | | | | | | | |  | |  | | | | | | | | | | | | | | | | | | | | | |  | | |  | | | | | | | | | | | | | |  |  | | | | | |
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| **pH** | | | |  | | | | | | | |  | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | **Pass Criteria: +/- 0.2 s.u.** | | | | | | | | | | | | | | | | | | | | | | | |
| Value (s.u.) | | |  | | | | | Buffer Lot # | | | | | |  | | | | Initial Reading (s.u.) | | | | | | | | | | | |  | | Calibrated Reading (s.u.) | | | | | | | | | |  | | | | | mV \* | | | | | | | |  | | | | | Temp. (oC) | | | | | | | | |  | | | | Range (mV) | | | | | | | | | | | | | | | Pass/Fail | | | | |
| 7 | | |  | | | | |  | | | | | |  | | | |  | | | | | | | | | | | |  | |  | | | | | | | | | |  | | | | |  | | | | | | | |  | | | | |  | | | | | | | | |  | | | | (0 +/- 50) | | | | | | | | | | | | | | |  | | | | |
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| 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) | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | Pass/Fail | | | | | | | | | | | | | | | | |
| 0 | | | | | | | | |  | DI | | | | | | | |  | | | | |  | | | | | | | | | | | | | |  | |  | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | |  | | | | | | | | | | | | | | | | |
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| **Calibration Verification** | | | | | | | | | | | | | | | | | | | Date/Time: | | | | | | | | |  | | | | | | | | |  | | | | | | | | | | | | | | |  | | Technician: | | | | | | | | | | | | | | | |  | | | | | | | | | | | | |  | | | | | | | | |
| Dissolved Oxygen | | | | | | | | | | | | | | | |  | | | | | Temperature (oC) | | | | | | | | | | | | | | | | |  | | Pressure (mmHg) | | | | | | | | | | | | | | | | | | | | | | | |  | | |  | | | | | | | | | | |  | | | P/F or LTD Qual. | | | | | | | | | | | | | | |
| % | | | | | | | mg/L | | | | | | | | |  | | | |  | | | | | | | | | | | | | | | | | |  | |  | | | | | | | | | | | | | | | | | | | | | | | |  | | |  | | | | | | | | | | |  | | |  | | | | | | | | | | | | | | |
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| Specific Conductance (µS/cm) | | | | | | | | | | | | | | | | |  | | | | | Standard Lot # | | | | | | | | | | |  | Reading (µS/cm) | | | | | | | | | | | | | | | |  | | |  | | | | | | | | | | | |  | | | Temp. (oC) | | | | | | | | | | | |  | | | | | P/F or LTD Qual. | | | | | | | | | |
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| pH Value (su) | | | | | | | | | | | | | | | | |  | | | | | Buffer Lot # | | | | | | | | | | |  | Reading (s.u.) | | | | | | | | | | | | | | | |  | | | mV | | | | | | | | | | | |  | | | Temp. (oC) | | | | | | | | | | | |  | | | | | P/F or LTD Qual. | | | | | | | | | |
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| Turbidity Value (NTU) | | | | | | | | | | | | | | | | |  | | | | | Standard Lot # | | | | | | | | | | |  | Reading (NTU) | | | | | | | | | | | | | | | |  | | |  | | | | | | | | | | | |  | | |  | | | | | | | | | | | |  | | | | | P/F or LTD Qual. | | | | | | | | | |
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| **SONDE CALIBRATION WORKSHEET** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **Maintenance** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **Yes** | | | | | | | | | | **No** | | | | | | | | | | | **Note** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Software update performed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | |  | | | | | | |  | | | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Factory reset performed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | |  | | | | | | |  | | | | | | | |  | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH junction fluid replacement | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | |  | | | | | | |  | | | | | | | |  | | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pH junction replacement | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | |  | | | | | | |  | | | | | | | |  | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Turbidity wiper changed? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | |  | | | | | | |  | | | | | | | |  | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Other maintenance performed? | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |  | | | | | |  | | | | | | |  | | | | | | | |  | | | | |  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **Calibration/Post-Check/Maintenance Comments** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| **Parameter** | **Standard** | **Standard Value** | **In-Calibration Range** | **Linear Interpolation Range**  **(Max Allowable Limits)** |
| Temperature, °C | NIST Traceable Thermometer | Ambient Temperature | ± 0.5 °C | ± 2 °C |
| Conductivity, µS/cm | Standard Solution | 1413 µS/cm | ± 5% | ± 30% |
| Dissolved Oxygen, % | Saturated Air | 100 % | ± 5% | ± 30% |
| pH, s.u. | Buffer Solution | 4.0, 7.0, 10.0 | ± 0.2 | ± 1 |
| Turbidity, NTU | DI Water | 0 NTU | ± 1 NTU | ± 10 NTU |
| Standard Solution | 100 NTU | ± 5 NTU | ± 30 NTU |
| 1000 NTU | ± 50 NTU | ± 300 NTU |
| **Parameter** | **Corrected Qualifier (LTD only)** | | **Rejected Qualifier** | |
| Temperature, °C  Conductivity, µS/cm  Dissolved Oxygen, %  Dissolved Oxygen, mg/L  pH, s.u.  Turbidity, NTU | **CT**  **CSC**  **C%**  **CDO**  **CPH**  **CY** | | **RT**  **RSC**  **R%**  **RDO**  **RPH**  **RY** | |

**QA Criteria:**