



Nevada Division of Environmental Protection (NDEP)
Bureau of Safe Drinking Water (BSDW)
pH Meter Standard Operating Procedure

1. General requirements for pH testing equipment:
 - a. The equipment shall be operated in accordance with the manufacturer's instructions.
 - b. The electrodes of the pH testing equipment shall be rinsed and stored after each use based on the manufacturer's recommendations. Electrodes shall be replaced, as required.
 - c. The pH testing equipment shall be stored in accordance with the manufacturer's recommendations.
 - d. The meter shall be capable of adjusting the pH measurement for temperature as well as measuring the temperature of the water sample.

2. The pH Meter shall be calibrated, according to the manufacturer's specifications, at the beginning and the end of each day of use:
 - a. Two pH buffers, bracketing the anticipated value of the water sample, shall be used to calibrate the meter. The manufacturer may require that the meter be calibrated, using the two buffers, multiple times prior to use.
 - b. If the measured pH of the water sample is outside the range of the buffers used to calibrate the meter, the meter shall be recalibrated using two buffers that bracket the sample result. After recalibration, the water sample pH shall be measured again.
 - c. Fresh pH buffers shall be maintained. Expired buffer solutions shall be discarded and replaced.

3. Sample Handling and Preservation
 - a. Analyze immediately (within 15 minutes of collection).
 - b. Record sample temperature at the time of collection.

4. Equipment and supplies
 - a. pH meter make and model: _____
 - b. Electrode Storage Solution
 - c. pH Buffer Solution 4.00
 - d. pH Buffer Solution 7.00
 - e. pH Buffer Solution 10.00

5. Measuring Procedures-Follow the procedures outlined in the equipment manual. In general:
 - a. Rinse the electrode before measuring the pH and gently shake off the rinsing solution.
 - b. Gently stir the sample with the electrode and allow the reading to equilibrate.
 - c. Record the pH and temperature readings.
 - d. Properly rinse and store the electrode.

6. Recordkeeping
 - a. A separate meter logbook must be maintained for each meter.

- b. Calibration results for the meter must be recorded in the logbook, including:
 - i. Initial reading for each buffer solution
 - ii. Meter adjustment necessary to equal the buffer value.
 - iii. Final meter reading for each buffer solution after adjustment.
 - iv. All calibration results. If calibrating multiple times with the two buffers, record all results in the log.
 - v. A signature of the person calibrating the meter. This must be on each log page along with the date and time of the calibration. Use a separate log page for each day's calibration.
 - vi. The final reading for each pH buffer at the end of each day of use. This will show the drift in pH that has occurred over the course of the day. Record these values without any adjustment of the meter.
 - vii. The lot numbers and expiration dates for the pH buffers.

7. Reporting of results

- a. Complete the pH sample result sheet and include the following information:
 - 1. Public Water System (PWS) Name
 - 2. PWS Number
 - 3. Site Name/Location.
 - 4. Sample ID Number.
 - 5. Sample Date/Time.
 - 6. pH Sample Measurement.
 - 7. pH Sample Temperature.
 - 8. Instrument Make & Model.
 - 9. Instrument ID or Serial #.
 - 10. Instrument Calibration Date.
 - 11. Comments
 - 12. Authenticity Statement:
 - “I attest to the validity and authenticity of this (these) sample(s). I am aware that tampering with or intentionally mislabeling the sample(s) location, date or time of collection may be considered fraud and subject to legal action.”
 - 13. Name of Sampler
 - 14. Signature of sampler
- b. Send pH sample result sheet(s) to the BSDW.

8. References

- a. Manufacturer's pH meter operation manual
- b. NDEP BSDW pH Measurement sheet