Kentucky Wastewater Laboratory Certification Program
Field Analysis for pH-only Stormwater
Quality Control Requirements
June 9, 2015

This document is intended to provide field-only laboratories performing pH-only stormwater analysis with an overview of the quality control requirements.

Field Documentation Requirements

- Utilize field notebooks for all observations pertaining to the analysis of KPDES compliance samples
- Use indelible ink (black or blue)
- For corrections – strike through original value with a single line, initial and date

QA/QC Requirements

- All facilities performing pH-only analyses – use field notebooks and logbooks for all activities
- Prior to each pH Meter use:
  - Calibrate meter – according to manufacturer's requirements
    - Typically: calibrate using a 4, 7 and 10 S.U. buffers (poured fresh for each use)
    - Calibration must bracket range of use
  - Record the calibration information, including buffer lot numbers and expiration dates in the field notebook
  - Record the slope of the calibration curve – if displayed (slope must be 0.95-1.05)
  - Verify the calibration of the pH Meter using a buffer standard (using a second source[1] standard) and analyze as an unknown sample (result must be $\pm$0.1 S.U. of expected)
  - Record the calibration verification results in the field notebook (make a Pass/Fail notation). If verification failed – refer to SOP for corrective action
- Analyze compliance samples
- Analyze a field sample DUPLICATE at least once per 20 samples (over multiple days), not to exceed one quarter (per analyst / field technician).
  - Calculate duplicate Relative Percent Difference (RPD) – using the equation in the QAP/SOP. RPD must be <20 RPD. If failed criteria – refer to the QAP/SOP for corrective action
- Perform a quarterly Quality Control Sample (QCS) analysis – using a buffer from a different source (second source[1]) than the buffers used for the primary calibration. Use of a buffer from the same supplier, but a different lot number is acceptable.
  - Record the results of the QCS in the field notebook (result must be within $\pm$5% of expected value; or within manufacturer's certificate of analysis).

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[1] Second source standard is defined as a standard that has been purchased from a different supplier (or vendor) than the primary standards used for instrument calibration. If a different supplier (or vendor) does not exist, or is impractical, a different lot number may be used from the same supplier as the primary standards.