



February 16, 2017

Bill Johnson  
NPDES Branch Chief  
California Regional Water Quality Control Board  
1515 Clay Street, Suite 1400  
Oakland, CA 94612

Dear Mr. Johnson:

## FIELD pH TESTS FOR PRETREATMENT COMPLIANCE MONITORING

As we previously discussed, it may not be feasible for all agencies to continue the historic practice of conducting pH compliance monitoring at regulated Industrial Users (IUs) by grabbing a representative process wastewater sample and then transporting the sample to an ELAP certified laboratory for analysis within the 15-minute hold time specified in 40 CFR Part 136. Some Bay Area Pretreatment Programs have periodically had findings resulting from Pretreatment Compliance Audits or Inspections (PCA/PCI) for not meeting this pH hold time requirement during IU compliance sampling events. Recent changes to the Porter-Cologne Water Quality Act effective 1/1/15 identify that certain field tests, including pH, do not have to be performed by an ELAP certified laboratory (excerpt attached).

The Bay Area Clean Water Agencies (BACWA) Pretreatment Committee is seeking concurrence that Pretreatment Programs operating in RWQCB Region 2 can use field pH monitoring for required compliance monitoring without relying on ELAP certified laboratories provided that certain standards are employed to ensure the field pH test results are legally defensible. The elements of these standards include:

- A properly calibrated field pH meter is used for the compliance sampling of IUs.
- Standard Operating Procedures (SOPs) are established and followed to ensure the field pH meter used for IU compliance monitoring is properly calibrated.
- Records of calibration are maintained either in a log or electronic file that document proper calibration of the field pH meter prior to the compliance sampling event.
- Field pH test results shall be recorded on a standardized form to record the measured results that will also include specific information including, but not limited to:
  - Sample date/time.
  - Sample analysis date/time.



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**A G E N C I E S**

- pH meter test results using standard pH units.
- Name and signature of person conducting the sampling and field pH test.
- Certification that the field pH monitoring SOPs were followed.

An example of a calibration SOP is attached for your reference. SOPs will vary between agencies but will contain the elements needed to ensure the field pH monitoring results are defensible should the agencies' pH limits not be met.

Amelia Whitson, Pretreatment Coordinator for USEPA Region 9, provided feedback that field pH monitoring for IU compliance sampling was an acceptable practice under the federal standards and that the requirement to use ELAP certified laboratories for pH compliance monitoring was a State standard.

The use of field pH meters for IU compliance monitoring would be available for both agencies' and IU's self-monitoring sampling events provided the same elements identified above are used for the IU self-monitoring events. The agencies' staff will periodically review the documentation associated with the IU self-monitoring events when using field pH meters to ensure the standards are being met.

Please let me know if you have any questions about this request for concurrence regarding the acceptability of using field pH meters for IU compliance monitoring. We look forward to hearing from you on this issue.

Sincerely,

Timothy Potter  
BACWA Pretreatment Co-Chair

Enclosures

cc: Dave Williams, Executive Director, BACWA  
Amelia Whitson, USEPA Region 9 Pretreatment Coordinator  
Michael Chee, SF Bay RWQCB Pretreatment Coordinator  
Russel Norman, SWRCB Pretreatment Program Manager  
Michael Dunning, Co-Chair BACWA Pretreatment Committee

§ 13172. Waste disposal sites; standards & regulations

To ensure adequate protection of water quality and statewide uniformity in the siting, operation, and closure of waste disposal sites, except for sewage treatment plants or those sites which primarily contain fertilizer or radioactive material, the state board shall do all of the following:

(a) Classify wastes according to the risk of impairment to water quality, taking into account toxicity, persistence, degradability, solubility, and other biological, chemical, and physical properties of the wastes.

(b) Classify the types of disposal sites according to the level of protection provided for water quality, taking into account the geology, hydrology, topography, climatology, and other factors relating to ability of the site to protect water quality.

(c) Adopt standards and regulations to implement Sections 13226 and 13227.

(d) Adopt standards and regulations for hazardous waste disposal sites which apply and ensure compliance with all applicable groundwater protection and monitoring requirements of the Resource Conservation and Recovery Act of 1976, as amended (42 U.S.C. Sec. 6901 et seq.), any federal act, enacted before or after January 1, 1989, which amends or supplements the Resource Conservation and Recovery Act of 1976, any federal regulations adopted before or after January 1, 1989, pursuant to the Resource Conservation and Recovery Act of 1976, as amended, together with any more stringent requirements necessary to implement this division or Article 9.5 (commencing with Section 25208) of Chapter 6.5 of Division 20 of the Health and Safety Code.

(e) Adopt policies, standards, and regulations for discharges of mining waste which apply, and ensure compliance with, all surface water and groundwater protection and monitoring requirements of this division, Article 9.5 (commencing with Section 25208) of Chapter 6.5 of Division 20 of the Health and Safety Code, and Subchapter IV (commencing with Section 6941) of Chapter 82 of Title 42 of the United States Code, which are applicable to discharges of mining waste. These policies, standards, and regulations shall include, but are not limited to, all of the following:

(1) A statewide policy for monitoring surface water and groundwater that may be affected by discharges of mining waste. The policy shall establish the principles the regional boards shall use in developing monitoring plans for discharges of mining waste, including the methods the regional boards shall use in determining the location, number, and type of monitoring sites.

(2) Regulations requiring that waste discharge requirements issued for discharges of mining waste by regional boards include monitoring requirements

consistent with the statewide policy adopted pursuant to paragraph (1).

(3) Standards for reporting the results of surface water and groundwater monitoring to the regional board. The standards shall establish a reporting format that graphs monitoring data over an appropriate time period and compares the values found for each measured parameter against the standard for that parameter established in the waste discharge requirements.

§ 13173. Designated waste

“Designated waste” means either of the following:

(a) Hazardous waste that has been granted a variance from hazardous waste management requirements pursuant to Section 25143 of the Health and Safety Code.

(b) Nonhazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding applicable water quality objectives or that could reasonably be expected to affect beneficial uses of the waters of the state as contained in the appropriate state water quality control plan.

§ 13173.2. Designated waste policies

The state board, after consultation with the California Integrated Waste Management Board and the Department of Toxic Substances Control, may, as available resources permit, adopt policies with regard to designated wastes to include, but not be limited to, both of the following:

(a) Policies that provide for the means by which a regional board shall identify designated waste and the waters of the state that the waste may potentially impact.

(b) Policies for regional boards with regard to the granting of waivers to make inapplicable the designated waste classification.

§ 13176. Certified laboratories

(a) The analysis of any material required by this division shall be performed by a laboratory that has accreditation or certification pursuant to Article 3 (commencing with Section 100825) of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code. This requirement does not apply to field tests, such as tests for color, odor, turbidity, pH, temperature, dissolved oxygen, conductivity, and disinfectant residual.

(b) A person or public entity of the state shall not contract with a laboratory for environmental analyses for which the State Department of Public Health requires accreditation or certification pursuant to this chapter, unless the laboratory holds a valid certification or accreditation.

## EXAMPLE

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### Standard Operating Procedures Industrial User Compliance Monitoring for pH Using Field pH Meters

The following Standard Operating Procedures (SOPs) apply to the use of pH meter Thermo Scientific Orion Star A221 to test for pH of water and wastewater in the field at regulated Industrial Users to ensure defensible results are generated. The pH test should be completed within 15 minutes of drawing the sample to meet the hold time. If the meter does not lock on a reading within 15 minutes of drawing the sample, continue the test and make note of this delayed response by the meter.

#### Prior to Sampling

1. Ensure meter probe is properly submerged in storage solution between uses
2. Verify correct date and time and adjust if necessary
3. Calibrate meter prior to leaving
  - a. Place meter in calibration mode
  - b. Remove probe from storage solution
  - c. Rinse probe with DI water
  - d. Place probe in one of the standard solutions
  - e. Wait for meter to read pH of standard
  - f. Accept or reject depending on reading
  - g. Repeat steps 2.c. through 2.f. for second and third standard solutions
  - h. Complete by exiting calibration mode
4. Take supplies in field (e.g. DI water, extra batteries)

#### Field Sampling

1. Connect probe to meter
2. Confirm meter reading matches pH of storage solution
3. Rinse probe with DI water
4. Place probe in sample and wait for meter to lock on reading
5. Document results
6. Rinse probe with DI water and place in storage solution if done with pH sampling for the location

#### Post Sampling

1. Inspect probe for residuals build up
2. If residuals remain on probe after field rinsing, clean using Thermo Scientific pH electrode cleaning kit
3. Ensure probe is in storage solution

Periodically download electronic data from meter approximately every six months to store on computer drive in office to avoid data from being lost should the meter's storage capacity be exceeded.