

Quality Assurance Memorandum

July 23, 2014

To: Surface Water Ambient Monitoring Program (SWAMP) Roundtable Voting Members

CC: Renee Spears and Toni Marshall (State Water Resources Control Board); Data Management Team (Moss Landing Marine Laboratories (MLML)); Water Pollution Control Laboratory and Marine Pollution Studies Laboratory (Department of Fish and Wildlife)

From: Quality Assurance (QA) Team (MLML)

RE: SWAMP Roundtable Vote Results - Revised SWAMP Quality Control (QC) Requirements for Biochemical Oxygen Demand (BOD) in Fresh and Marine Waters

Background

On June 25, 2014, SWAMP Roundtable voting members received a ballot memo from the QA Team (*SWAMP RT Ballot - Revision of BOD MQOs (06-25-14).pdf*). It detailed proposed revisions to SWAMP's QC requirements for BOD.

Summary

The final vote approved the proposed revisions. Individual results are summarized in the following table:

Voting Member	Response
Region 1	No vote recorded
Region 2	Approve
Region 3	Approve
Region 4	Approve
Region 5	Approve
Region 6	Approve



Voting Member	Response
Region 7	Approve
Region 8	Approve
Region 9	Approve
State Board	No vote recorded

Outcome

On July 21, 2014, the proposed changes to SWAMP’s QC requirements for BOD in fresh and marine water were approved by a Roundtable vote.

- Effective July 21, 2014, Table 1a: *Quality Control: Biochemical Oxygen Demand in Fresh and Marine Water* and Table 3a: *Recommended Corrective Action: Biochemical Oxygen Demand in Fresh and Marine Water* replace the requirements and recommended corrective actions for BOD contained in the 2013 tables *Quality Control: Conventional Parameters in Fresh and Marine Water*.
- Table 1a: *Quality Control: Biochemical Oxygen Demand in Fresh and Marine Water* and Table 3a: *Recommended Corrective Action: Biochemical Oxygen Demand in Fresh and Marine Water* will be incorporated into the tables for conventional parameters during the next scheduled table revision. In the meantime, this document acts as the formal reference for SWAMP’s BOD requirements.

References

SWRCB, 2014, SWAMP RT Ballot - Revision of BOD MQOs (06-25-14). OIMA Sacramento, CA USA.



Table 1a: Quality Control: Biochemical Oxygen Demand in Fresh and Marine Water¹

Laboratory Quality Control	Frequency of Analysis	Measurement Quality Objective
Calibration Standard	Per analytical method or manufacturer's specifications for measuring dissolved oxygen (DO)	Per analytical method or manufacturer's specifications for measuring DO
Calibration Verification	Per analytical method or manufacturer's specifications for measuring DO	Per analytical method or manufacturer's specifications for measuring DO
Dilution Water Blank (Unseeded)	Per 20 samples or per analytical batch, whichever is more frequent	Depletion < 0.2 mg/L DO
Glucose/Glutamic Acid Check	Per 20 samples or per analytical batch, whichever is more frequent	198 ± 30.5 mg/L ²
Seed Control	Per 20 samples or per analytical batch, whichever is more frequent	Per analytical method
Laboratory Duplicate	Per 20 samples or per analytical batch, whichever is more frequent	RPD<25% (n/a if native concentration of either sample<RL)
Field Quality Control	Frequency of Analysis	Measurement Quality Objective
Field Duplicate	5% of total project sample count	RPD<25% (n/a if native concentration of either sample<RL)

¹ Unless method specifies more stringent requirements

² Control chart results of Glucose/Glutamic Acid Check (minimum n = 3)

Table 3a: Recommended Corrective Action: Biochemical Oxygen Demand in Fresh and Marine Water

Laboratory Quality Control	Recommended Corrective Action
Calibration Standard	Recalibrate the instrument. Affected samples and associated quality control must be reanalyzed following successful instrument recalibration.
Calibration Verification	Reanalyze the calibration verification to confirm the result. If the problem continues, halt analysis and investigate the source of the instrument drift. The analyst should determine if the instrument must be recalibrated before the analysis can continue. All of the samples not bracketed by acceptable calibration verification must be reanalyzed.
Dilution Water Blank (Unseeded)	Reanalyze the blank to confirm the result. Investigate the source of contamination. Flag results to indicate blank exceeded the acceptance criterion.
Glucose/Glutamic Acid Check	Prepare a new mixture of Glucose/Glutamic Acid. Check sources of dilution water and source of seed.
Seed Control	Check source of seed. Find alternate source of seed if necessary.
Laboratory Duplicate	Reanalyze the duplicate samples to confirm the results. Visually inspect the samples to determine if a high RPD between the results could be attributed to sample heterogeneity. For duplicate results due to matrix heterogeneity, or where ambient concentrations are below the reporting limit, qualify the results and document the heterogeneity.
Field Quality Control	Recommended Corrective Action
Field Duplicate	Visually inspect the samples to determine if a high RPD between results could be attributed to sample heterogeneity. For duplicate results due to matrix heterogeneity, or where ambient concentrations are below the reporting limit, qualify the results and document the heterogeneity. All failures should be communicated to the project coordinator, who in turn will follow the process detailed in the method.

