California's Surface Water Ambient Monitoring Program
SWAMP-Comparable Fact Sheet
Revised December 4, 2006

Frequently Asked Questions:

What does it mean to be SWAMP-comparable?

- It means the Measurement Quality Objectives (MQOs) for your project are equivalent to or exceed SWAMP MQOs.
  - The EPA defines MQOs as: "acceptance criteria" for the quality attributes measured by project data quality indicators. During project planning, measurement quality objectives are established as quantitative measures of performance against selected data quality indicators, such as precision, bias, representativeness, completeness, comparability, and sensitivity.
    - For example, SWAMP MQOs for Trace Metals in Water include collection of field replicates at a rate of 5% annually, performance of laboratory duplicates at a rate of one per 20 samples with a relative percent difference <25%, and matrix spikes/matrix spike duplicates at a rate of one per 20 samples with percent recovery of 75-125%, etc. This information is listed in Appendix C "Data Acceptability Criteria for Trace Metals in Water, Including Mercury".
  - Utilize the SWAMP Quality Assurance Management Plan as a guideline for your project's requirements: http://www.waterboards.ca.gov/swamp/qamp.html - check Appendix C which contains SWAMP MQOs.
  - Refer to the EPA guide that assists users in selecting data quality objectives: EPA document "*Guidance for the Data Quality Objectives Process*" (EPA QA/G-4; http://www.epa.gov/quality/qs-docs/g4-final.pdf)
- It means data must be formatted to match database requirements of the SWAMP Information Management System (IMS).
  - The following website http://mpsl.mlml.calstate.edu/swdbcompare.htm contains information regarding the required formatting, field data sheets, and electronic templates.
  - SWAMP has created Standard Operating Procedures (SOPs) which provide guidance regarding verification and validation of data beginning at the Contract Laboratory. These can be accessed through: http://mpsl.mlml.calstate.edu/swqacompare.htm
  - Parties should note that the web site is updated periodically and should be consulted regularly to be sure that any changes are incorporated

How do I determine the correct methods for my sampling scheme? Do I have to utilize SWAMP field and analytical methods?

- Sample collection information is located in the SWAMP QAMP in Appendices D & E.
- Appendix C of the SWAMP QAMP contains method recommendations but there are no SWAMP requirements that specify field and analytical methods**.**
- A project may utilize Standard Methods or EPA methods. However, not all Standard or EPA methods meet SWAMP MQOs. SWAMP MQOs MUST BE MET IN ORDER FOR DATA TO BE CONSIDERED SWAMP COMPARABLE.
- Performance Based Methods (PBMS) may also be utilized as long as the method validation and SOPs are recorded.
  - For more information on PBMS protocols: http://www.waterboards.ca.gov/swamp/docs/guidelines_pbms_program.pdf

Do I have to use a SWAMP-audited laboratory as my contract lab?
- No. SWAMP advises that QA/QC requirements be written into the contract with a laboratory.

Where do I submit SWAMP-comparable data? Is there a database set up to receive my data?
- Please contact your contract administrator or Regional Water Quality Control Board Grant Coordinator with questions regarding databases. At this time, SWAMP does not administer a database for SWAMP-comparable projects. The State Water Resources Control Board is developing avenues to receive SWAMP-comparable data.

I need to write a SWAMP-comparable QAPP, what resources can I utilize?
- The SWRCB has created an electronic template for assistance with QAPP generation: http://www.waterboards.ca.gov/swamp/docs/swampqapp_template032404.doc
- Another useful reference is the SWAMP QAPP checklist – the checklist highlights requirements for a SWAMP-comparable QAPP: http://www.waterboards.ca.gov/swamp/docs/qa_checklist061404.xls

Who is the QA officer for my project?
- Please contact your contract administrator or Regional Water Quality Control Board Grant Coordinator with questions regarding the QA Officer for your project.

How do I get information on available/future training opportunities regarding SWAMP?
- SWAMP has created a Water Quality Monitoring List Serve so interested parties can receive e-mail updates, including the dates of upcoming training classes. Please visit the SWAMP home page (http://www.waterboards.ca.gov/swamp/) and locate the link to be added to the List Serve or self-subscribing electronic mailing list at the bottom of the page. .

Steps to Achieving Comparability with the SWAMP QA Program:

Identify all relevant project participants, programs and/or agencies
- Identify key individuals, QA Officer(s)
- Develop plan for implementation of tasks and necessary resources.

Verify the Quality Assurance Project Plan (QAPP) approval process
- Ask your Regional Board QA Officer or Grant Manager

Gather supporting documents
- Laboratory Standard Operating Procedures (SOPs)
- Laboratory Quality Assurance Plans or Manuals

Determine action limits/regulatory information for all analytes/parameters of interest

Method Selection
- EPA, ASTM, Standard Methods, USGS
- Use the National Environmental Methods Index, http://www.nemi.gov

Follow guidance in the SWAMP Quality Assurance Management Plan (QAMP)
- Appendix C in the SWAMP QAMP contains the program's Measurement Quality Objectives (MQOs). A project must meet or exceed the SWAMP MQOs to be comparable.

- http://www.waterboards.ca.gov/swamp/qamp.html

Helpful tips in creating a SWAMP-comparable QAPP
- Pay special attention to the following Elements:
    - A4 – Project/Task Organization
    - A5 – Problem Definition and Background
    - A6 – Project/Task Description
    - A7 – Quality Objectives and Criteria
    - B1 – Sampling Process Design (Experimental Design)
- Use your Monitoring Plan
- Use laboratory or other applicable SOPs
- Delegate sections to lab or field crews
- Utilize the SWAMP QAPP Template
    - http://www.waterboards.ca.gov/swamp/docs/swampqapp_template032404.doc
- Reference the QAPP checklist which is used in reviewing QAPPs
    - http://www.waterboards.ca.gov/swamp/docs/qa_checklist061404.xls
Important: your QAPP should reflect the scope of your project (small project = small QAPP)

Other useful links and resource guides for Quality Assurance:

EPA Requirements for Quality Management Plans; EPA QA/R-2:
http://www.epa.gov/quality/qs-docs/r2-final.pdf

Guidance for the Data Quality Objectives Process; EPA QA/G-4:
http://www.epa.gov/quality/qs-docs/g4-final.pdf

EPA Region Nine Guidance for Quality Assurance Program Plans:
http://www.epa.gov/region09/qa/pdfs/qaprp_guidance3.pdf

Guidance for Quality Assurance Project Plan; EPA QA/G-5:
http://www.epa.gov/quality/qs-docs/g5-final.pdf

EPA Requirements for Quality Assurance Project Plan; EPA QA/R-5:
http://www.epa.gov/quality/qs-docs/r5-final.pdf

Guidance of Data Quality Indicators; EPA QA/G-5i: Web link currently not available, document under revision

Guidance for Preparing Standard Operating Procedure; EPA QA/G-6:
http://www.epa.gov/quality/qs-docs/g6-final.pdf

Guidance on Environmental Data Verification and Validation; EPA QA/G-8:
http://www.epa.gov/quality/qs-docs/g8-final.pdf

Guidance for Data Quality Assessment: A Reviewer's Guide; EPA QA/G-9R:
http://www.epa.gov/quality/qs-docs/g9r-final.pdf

Guidance for Data Quality Assessment: Statistical Methods for Practitioners; EPA QA/G-9S:
http://www.epa.gov/quality/qs-docs/g9s-final.pdf

Guidance on Developing a Training Program for Quality Systems; EPA QA/G-10:
http://www.epa.gov/quality/qs-docs/g10-final.pdf

EPA Training Courses on Quality Assurance:
http://www.epa.gov/quality/trcourse.html

SWAMP QA/QC: http://www.waterboards.ca.gov/swamp/qapp.html#swampqapp

The SWAMP QAMP: http://www.waterboards.ca.gov/swamp/qamp.html

The SWAMP QAPP Template:
http://www.waterboards.ca.gov/swamp/docs/swampqapp_template032404.doc

The SWAMP QAPP Checklist:
http://www.waterboards.ca.gov/swamp/docs/qa_checklist061404.xls

How to be Comparable with SWAMP: http://mpsl.mlml.calstate.edu/swcompare.htm

National Water Quality Monitoring Council, Methods and Data Comparability Board:
http://wi.water.usgs.gov/methods/index.html

Guide to Method Flexibility and Approval of EPA Water Methods:
http://www.swrcb.ca.gov/swamp/docs/guidelines_pbms_program.pdf

National Environmental Methods Index (NEMI):
http://www.nemi.gov/servlet/page?_pageid=179&_dad=portal30&_schema=PORTAL30

American National Standards Institute: http://www.ansi.org/

International Atomic Energy Agency: http://www.iaea.org/

Shareware: Visual Sample Plan:
http://dqo.pnl.gov/vsp/

Writing Style Book: Dodd, J.S. ACS Style Guide: A Manual for Authors and Editors, 2nd ed.;
American Chemical Society: Washington, DC, 1997.