

# Data Classification System

June 17, 2010

Approved by Beverly H. van Buuren, Surface Water Ambient Monitoring Program Quality Assurance Officer, on June 17, 2010

---

## 1. Purpose

This document describes the process used by the Surface Water Ambient Monitoring Program (SWAMP) Quality Assurance Team (QAT) and the SWAMP Data Management Team (DMT) to classify data batches and sample results that will be included in the SWAMP database.

Data batches and sample results are assigned classifications based on conformance to SWAMP measurement quality objectives (MQOs), holding times, and other requirements specified in the *Surface Water Ambient Monitoring Program Quality Assurance Program Plan* (QAPrP). Once the results have been classified and moved to the permanent side of the SWAMP database, the classification level can be used to evaluate comparability across SWAMP datasets.

## 2. Responsibilities

The SWAMP QAT is responsible for designing and finalizing the SWAMP data classification system. This includes creating and defining the classification levels and assigning the relationships between data qualifiers and classification levels.

The SWAMP DMT is responsible for creating and defining the program's data qualifiers. They then assign these qualifiers to contract laboratory data batches and sample results during their data verification and classification process. Finally, the DMT ensures that the correct compliance level is associated with each data batch.

The SWAMP Roundtable is responsible for reviewing and approving these procedures. The Roundtable also provides guidance on program-wide issues.

Program end users are responsible for determining the degree to which they want to incorporate SWAMP data classification in their data assessment.



### 3. Procedure

In order to differentiate data receiving SWAMP classification from that receiving project-specific validation, two sub-classes of classification levels have been established.

#### 3.1 Definitions

##### Program-level Classification

Classifications applied to data that has been verified against SWAMP requirements are considered to have undergone program-level classification. In order to determine if data receiving program classification is suitable for a specific use, a data assessment must be performed by the intended data user.

##### Project-level Validation

Classifications applied to data that has been validated against project-specific data requirements are considered to have undergone project-level validation. In order for data to receive this level of validation, project-specific data quality requirements must be developed by the project management and communicated to and approved by the SWAMP QAT and DMT prior to sample collection. Further, a budget allocation must have been approved prior to committing SWAMP resources at the project level.

#### 3.2 Program-level Classifications

##### SWAMP-compliant

The classification “SWAMP-compliant” is assigned to data batches or sample results that meet the requirements of the QAPrP. This classification indicates data that is suitable for use in 303(d) and 305(b) reporting.

##### Qualified

The classification “Qualified” is assigned to data batches or sample results that fail to meet the requirements of the QAPrP, contain analytes beyond the scope of the QAPrP, or are insufficiently documented such that supplementary information is required for them to be used in reports. “Qualified” data may be suitable for use in 303(d) and 305(b) reporting. Determination of usability in 303(d) and 305(b) reporting requires user scrutiny at the data batch level.



Estimated

The classification level “Estimated” is assigned to data batches and sample results that are not considered to be quantifiable. Included in this classification are results qualified with the following Environmental Protection Agency (EPA) flag:

J – Estimated value

Screening Level

The “Screening” classification pertains to data that is not considered quantifiable and collected for informational purposes where the precision of quantification is not critical. Included in this classification are results qualified with the following flag:

SCR – Screening-level analysis

Whether or not data will be classified as “Screening” is determined by project management. “Screening” data must be identified as such by application of the SCR qualifier when the data is submitted to the SWAMP database.

Rejected

The classification “Rejected” is assigned to data batches and sample results that do not meet minimum SWAMP requirements, or have key errors or omissions. This classification is also applied to data rejected by the laboratory or other data providers by application of the following flag:

R– Data rejected (EPA Flag)

Data batches that fall into this classification are not made publicly available online.

Historical

The classification level “Historical” is assigned to data that was collected prior to implementation of the QAPrP, or within other programs with different sets of QA



guidelines. Data collected for other programs under different QA guidelines may or may not meet all of the requirements necessary to classify it as “SWAMP-compliant”.

### 3.3 Project-level Validation

SWAMP projects that have developed their own quality objectives may elect to have their data validated against those objectives. Data validation against a set of project-specific objectives requires a coordinated effort between the program’s management, the DMT, and the QAT.

Currently, only one SWAMP project (i.e., the *Bioaccumulation Oversight Group (BOG) Lakes Study*) has been validated for use based on the data requirements listed in its quality assurance project plan (QAPP). Data collected for the *BOG Coastal Study* will be validated in a similar manner.

In order to communicate to data users that data has been validated against non-SWAMP requirements, a set of project-specific data classification levels has been created. Data users outside of the project will need to consult the project’s QAPP in order to determine which classes of project-validated data are appropriate for a given use.

Three SWAMP-project specific data classification levels have been created for project validated data:

- “SWAMP Project-compliant”
- “SWAMP Project-qualified”
- “SWAMP Project-rejected”

The classification levels “Estimated”, “Screening-level”, and “Historical” were defined in Section 3.2. Separate, project-specific definitions are not necessary.

In many instances, the classification applied to SWAMP project-validated data will be similar to the classification based on the SWAMP QAPrP. Projects that wish to have



their data validated for a specific use must define associated classification levels in their QAPP. To ensure data validation is conducted properly, project management must work closely with the DMT and QAT during project planning. Further, a budget allocation must have been approved prior to committing SWAMP resources at the project level.

### 3.4 Use of Data Qualifiers

Data qualifiers are appended to data in order to communicate information regarding usability, and to ensure that this information is carried along with the data. Data qualifiers are applied for a variety of reasons, and represent information regarding the non-conformance of specific SWAMP data requirements.

In order to perform data validation and classification, a detailed set of standards or requirements must be present. For SWAMP data receiving program classification, the standards used are represented by the QAPrP. Data receiving project validation applies the requirements specified in the project-specific QAPP.

The QAT will assign relationships between data qualifiers developed by the DMT and the appropriate SWAMP data classification. Determining this relationship is a function of applying the requirements in the SWAMP QAPrP to the definitions of the data classification levels.

### 3.5 Data Usability

#### Program-level Classification

Data receiving programmatic classification is verified against SWAMP QAPrP requirements. In large part, these were developed to accomplish the following goal:

*Create an ambient monitoring program that addresses all of California's hydrologic units using consistent and objective monitoring, sampling, and analytical methods; consistent data quality assurance (QA) protocols; and centralized data management.*

SWAMP Quality Assurance Project Plan (QAPrP)  
Element A7: Quality Objectives and Criteria for Measurement Data (pg 19)



Beyond this goal, SWAMP data quality requirements were developed to produce data sufficient to meet 303(d) and 305(b) reporting needs. Other uses require an evaluation of SWAMP data quality requirements against the user's unique requirements.

*Project-level Validation*

Data receiving project validation is validated for a specific project's use. Use of this data outside of this project requires a separate evaluation of this data against the user's data quality requirements.

#### **4. References**

*Guidance for Preparing Standard Operating Procedures*; EPA QA/G-6; U.S. Environmental Protection Agency, U.S. Government Printing Office: Washington, DC, 2001.

Puckett, M. *Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program*; California Department of Fish and Game, Monterey, CA, 2002.

*Surface Water Ambient Monitoring Program Quality Assurance Program Plan*; Moss Landing Marine Laboratories, Moss Landing, CA, 2008.

