California’s Surface Water Ambient Monitoring Program

Basic Concepts in Data Quality

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We want usable, reliable, and scientifically defensible data of known quality.
Usable Data....

• Answer questions, support decisions
• All supporting parameters included
• Comparable to other data sets
• Adequate Measurement Quality Objectives
• Adequate Statistical Power of the dataset
• Reported in usable formats
Data are reliable (credible) when....

The reported value....

falls within the range of error specified for it, and

complete documentation is provided, and

it is honestly reported by field operators.
Valid Data....

The test, assay, or analysis used to collect the data was valid and compliance with data quality objectives has been confirmed.
Of Known Quality:
...How Good is the Result....

**Quality of the measurement itself**
(accuracy, precision, detection limit, resolution)

**Sample integrity**
(lack of deterioration, lack of contamination)
Representativeness of the measured value (how does the sample represent “true” conditions, across time & space: issues of sampling design and sample collection method in relation to inherent variability
And do not forget....

Correctly Entered
(All data and metadata must be correctly entered into your database.)

Traceable to Certified Standards;
Analyzed by Certified Laboratories
(Use, record, report all which are used.)
Our mission is to preserve and enhance the quality of California’s water resources and ensure their proper allocation and efficient use for present and future generations.”

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