Field Name	Field Title	Data Type	Definition
Age	Age	Number	The age of the organism from which the tissue sample was taken. Default value is "-88" if unknown. A list of possible options is available at the following site (Note: search the first column in the table for "AgeList"): VariableCodesLookUpList
AnalysisDate	Analysis Date	Date/Time	The date and time the sample was processed on the analytical instrument. Formatted as dd/mmm/yyyy hh:mm. Default value equals "01/Jan/1950 00:00" if unknown.
Analyte	Analyte	Plain Text	Name of the analyte or parameter for which the analysis is conducted and result is reported. A list of possible options is available at this link: AnalyteLookUpList
AnalyzingAgency	Analyzing Agency	Plain Text	The agency, organization, or laboratory that performed the analysis on the sample. Default value equals "Not Recorded" if unknown. A list of possible options is available at this link: AgencyLookUpList
Anomaly	Anomaly	Plain Text	Describes any anomalies that may be on or in the organism (e.g. Lesion, Parasite, Tumor, etc.). A list of possible options is available at the following site (Note: search the first column in the table for "AnomalyList"): VariableCodesLookUpList
BatchVerification	Batch Verification	Plain Text	A unique code given by the SWAMP IQ Data Manager to the lab batch, after the verification of the data has been completed. The code will reflect compliance to SWAMP MQOs (Measurement Quality Objectives), hold times, and overall quality of the data. Default value equals "NR" if unknown. A list of possible options is available at this link: BatchVerificationLookUpList
CollectionDevice Name	Collection Device	Plain Text	Name of the device used to collect the sample (e.g. "MPSL- Eboat_(BigE)", "WPCL-DFG Gill Net 1(50m,1.5")", "Individual Collection by bucket sampler", etc.). Default value equals "Not Recorded" if unknown. A list of possible options is available at this link: CollectionDeviceLookUpList

CollectionMethod Name	Collection Method Name	Plain Text	Refers to the general method used to collect the sample, organism, or field observation. Depending on the data types, different types of collection methods will be stated. Some examples are: "Algae_SWAMP," "BMI_CSBP_Transect", "Sed_Core", "Water_Grab", "Autosampler24h", "Habitat_Generic", etc. The default value of "Not Recorded" is utilized if method is unknown. LabQA samples utilize "Not Applicable." A list of possible options is available at this link: CollectionMethodLookUpList
CollectionReplicate	Collection Replicate	Plain Text	Used to distinguish between replicates created at a single collection in the field. Replicate samples that are collected at the same station and date should either have a value of "2" or "3." Samples collected on different dates, even if they are from the same station, should both have a value of "1." Default value is also "1."
CollectionTime	Collection Time	Date/Time	Refers to the time when the first sample of a sampling event at a specific station was collected in the field. Format equals hh:mm in 24 hour time (e.g. 13:30 for 1:30 pm). Default value equals “00:00” if the time sampling started is unknown. *For transplanted bivalves used in tissue analysis, the CollectionTime refers to the time the organisms were retrieved from the field after deployment.
CommonName & CompositeCommonName	Common Name	Plain Text	Refers to the common name (i.e. not the scientific name or nomenclature) of the organism collected for the sample.
CompAgency	Compositing Agency	Plain Text	The agency that physically created the composite or super composite used in the analysis. A list of possible options is available at this link: AgencyLookUpList
ComplianceCode	Compliance Code	Plain Text	Unique code referencing the compliance with the associated Quality Assurance Project Plan (QAPP). "Com" is used when all standards are met for the associated QAPP. Default value equals "NR" if unknown. A list of possible options and definitions is available at this link: ComplianceLookUpList
CompositeComments	Composite Comments	Plain Text	Contains any comments related to the composite or super composite.

CompositeID & CompositeCompositeID	Composite ID	Plain Text	A unique identifier supplied by the Compositing Agency to identify the composited tissue parts. Formats may differ depending on the agency. It can refer to either the original composite or the super composite (when multiple composites are combined).
CompositeJunctionRowID	Composite Junction Row ID	Number	Internal database identification for composite samples. Can be disregarded in data analysis.
CompositeReplicate	Composite Replicate	Plain Text	Used to distinguish between replicate composites. Default value equals "1."
CompositeRowID	Composite Row ID	Number	An internal database identification for composite samples. Can be disregarded in data analysis.
CompositeType & CompositeCompositeType	Composite Type	Plain Text	Indicates the type of composite (e.g. "Normal" or "SuperComposite.") A list of possible options is available at the following site (Note: search the first column in the table for "CompositeTypeList"): VariableCodesLookUpList
CompositeWeight	Composite Weight	Number	The total weight of the Composite or SuperComposite used in the analysis. Default value is "-88."
CompSizeCheck	Comp Size Check	Number	Comparison of organism sizes whose samples make up the composite.
DataQuality	Data Quality	Plain Text	Describes the overall quality of the record by taking the QACode, ResultQACode, ComplicanceCode, BatchVerificationCode, and special circumstances into account to assign it to one of the following categories: • **"Metadata, QC record"-** Not a measurement of environmental conditions • **"Passed QC"-** Data passed all QC checks • **"Some review needed"-** Data did not pass minor QC checks, some effort needed to review and defend data if used • **"Spatial Accuracy Unknown"-** Data missing spatial datum information, data should not be used for fine scale spatial analysis • **"Extensive review needed"**- Data did not pass QC some critical checks, high level of effort needed to defend data if used • **"Unknown Data Quality"**- Data was not reviewed by the project. Data will need review before use • **"Reject Data"**- Data was rejected by the project or data did not pass all critical QC checks. Data deemed unusable

			The assignments and categories are provisional. A working explanation of the data quality ranking can be found at the following link. This link is open to public comments as well: DataQualityEstimator-DecisionTree.
DataQualityIndicator	Data Quality Indicator	Plain Text	Explains the reason for the DataQuality value by indicating which quality assurance check the data did not pass (e.g. BatchVerificationCode, ResultQACode, etc.). If this field contains “Special Rule,” this indicates that the data falls into a special circumstance that decreases data quality. This field is left blank for values "Metadata, QC record" and "Passed QC." The assignments and categories are provisional. A working explanation of the data quality ranking can be found at the following link. This link is open to public comments as well: DataQualityEstimator-DecisionTree.
Datum	Datum	Plain Text	Represents the associated model of the Earth from which reference points are used to calculate position measurements. GPS devices commonly use datums such as "NAD83" and "WGS84." Default value equals “NR” if unknown. A list of possible options is available at the following site (Note: search the first column in the table for "DatumList"): VariableCodesLookUpList
DigestExtractDate	Digest/ Extraction Method Date	Date/Time	The start date and time the digestion or extraction was performed on the sample. Default value equals "01/Jan/1950 00:00" if unknown or if no digestion or extraction method was performed.
DigestExtractMethod	Digest/ Extraction Method	Plain Text	References the type of digestion or extraction method performed on the sample prior to analysis. Default value equals "Not Recorded" if unknown or if no digestion or extraction method was performed. A list of possible options is available at this link: DigestExtractLookUpList
DilutionFactor	Dilution Factor	Number	Factor by which a sample was diluted and is reported as a whole number. This is equal to the final volume divided by the initial volume of solution (i.e. DF = Vf ÷ Vi). For example, if the DilutionFactor is 100, for every 100 parts of the diluted sample, 1 part is the original sample. The default value is “1,” which means no dilution was performed.
DWC_AnalyteW Fraction	DWC Analyte W Fraction	Number	A combination of the analyte and fraction. This is an auto concatentated field to assist with data reporting.
EarliestDateSampled	Earliest Date Sampled	Date/Time	The date when the first sample of a composite, which contains multiple samples, was collected.

FinalID & CompositeFinalID	Final Identification	Plain Text	Refers to the lowest (i.e. most specific) taxon level identified for the organism. A list of possible options is available at this link: OrganismLookUpList
ForkLength	Fork Length	Number	The measured length of the organism from the most forward point, with mouth closed, to the center of the fork in the tail.
GeometryShape & CompositeGeometryShape	Geometry Shape	Plain Text	The physical shape of the location in which sample was taken; refers to the GIS terms (e.g. "point", "line") that indicates the shape of the location. For example, a "point" would be a location that is one particular spot (1 Lat/Long). "Line" means that the line begins in a single point (1 lat/long) and then ends at a second point; all the locations that connect the 2 points forms a line. A list of possible options is available at the following site (Note: search the first column in the table for "GeometryShapeList"): VariableCodesLookUpList
GroupSample	Group Samples	Plain Text	An Identifier used to group samples by the project staff. Not a required field.
HomogonizedDate	Homogenized Date	Date/Time	The date that the composite or super composite was homogenized.
Hydromod	Hydrological Modification	Plain Text	Indicates if there is any type of alterations in the natural watershed hydrology associated with changes in land cover and use, or notes any observed hydrological modification on the waterbody that was sampled (e.g. "Pipes", "bridges", "ConcreteChannel", etc). Default value is "NR" if unknown. A list of possible options is available at the following site (Note: search the first column in the table for "HydromodList"): VariableCodesLookUpList
HydroModLoc	Hydrological Modification Location	Plain Text	Codes that refer to the location of the hydrological modification (HydroMod field). A list of possible options is available at the following site (Note: search the first column in the table for "HydromodLocList"): VariableCodesLookUpList
LabBatch	Lab Batch	Plain Text	A unique code, provided by the laboratory, that represents a group of samples processed together. It groups all environmental samples with their supporting QC samples and is used to verify completeness based on the SWAMP QAPrP. It also identifies all samples digested or extracted together in one batch. When a digestion or extraction is not performed as part of the method, the LabBatch represents all samples within a unique analysis

			run. Format is "Batch#-AgencyCode" (e.g. "Batch1-SCCWRP").
LabBatchComments	Lab Batch Comments	Plain Text	Records any comments relating to the LabBatch as a whole. Comments should explain any irregularities in sample processing.
LabSampleID	Lab Sample ID	Plain Text	An ID assigned by the lab; intended to provide lab-specific identification for an analyzed sample. The format and content is determined by the lab. May have "- Dup," "-MS," or "-MSD" to the end of the ID to help confirm the SampleType and the LabSampleID of the native sample. If the lab does not assign the samples an ID, this column is left blank.
LabSubmissionCode	Lab Submission Code	Plain Text	A code assigned by the analyzing laboratory to the LabBatch or ToxBatch (for toxicity tests), that references the quality of the data in the entire batch. If this code is "A" (Acceptable), the laboratory is ensuring that all SWAMP QAQC protocols were met for the lab batch. If anything other than "A" is used, LabBatchComment explains the reason why it was not acceptable. Default value equals "NR" if unknown. A list of possible options is available at this link: LabSubmissionLookUpList
LatestDateSampled	Latest Date Sampled	Date/Time	The date when the last sample of a composite, which contains multiple samples, was collected.
Latitude & CompositeTargetLatitude	Target Latitude	Number	The latitude in decimal degrees of the sample site (should be positive).
LengthSource	Length Source	Plain Text	The physical location where the length measurements were recorded (e.g. field, lab).
LocationCode	Location Code	Plain Text	Describes the physical location in the waterbody and the field survey method used where the sample was collected (e.g. "Transect at 177m from start", "First instance where sample was collected in OpenWater", "second instance where a net (e.g. gill, fyke, dip) was used at the thalweg of the waterbody", "Bank, Left", etc.). Default value equals "Not Recorded" if unknown. A list of possible options is available at this link: LocationLookUpList
LocationDetailTIComments	Location Detail TI Comments	Plain Text	Comments regarding observations about the location from which samples were taken or where specimens, like bivalves, were deployed. This field could also include other information pertaining to the data.
Longitude & CompositeTargetLongtitude	Target Longitude	Number	The longitude in decimal degrees of the sample site (should be negative).

Matrix	Matrix Name	Plain Text	Refers to the sample matrix; the substance in which the analyte is evaluated in or the components of a sample other than the analyte of interest (e.g. "samplewater", "tissue"). Default value equals "Not Recorded" if unknown. A list of possible options is available at: MatrixLookUpList
MDL	Method Detection Limit	Number	The Method Detection Limit (MDL) is the detection limit associated with the method used to measure the analyte in the sample. This is the lowest possible calculated level, or the minimum concentration of an analyte that can be reported with a stated level of confidence that the analyte concentration is greater than zero. If an MDL is unknown, then the default value is "- 88" with a QACode of "NMDL."
Method	Method Name	Plain Text	Refers to the method used by the laboratory to analyze the sample. Default value equals "Not Recorded" if unknown. A list of possible options is available at this link: MethodLookUpList
NumberFishperComp	Number of Fish per Composite	Number	The number of fish from which samples were taken to create the analyzed composite. Default value is "-99" if unknown or not applicable.
OrganismGroup	Organism Group	Plain Text	The taxonomic group that the organism of the sample belongs to (e.g. Fish, Bivalves, Crustacean, Mammal, Bird or Amphibian). The value of "Not Applicable" is used for lab QA samples. A list of possible options is available at the following site (Note: search the first column in the table for "OrganismGroupList"): VariableCodesLookUpList
OrganismID	Organism ID	Plain Text	A unique identification code assigned to the organism by the field crew or the agency that has the first possession of the fish and the field data sheets associated with it. Formats vary depending on the agency or field crew. For samples that are field duplicates, "-Dup" is added to the end of the ID to help confirm that the collection is a field duplicate of the native sample.
OrganismWeight	Organism Weight	Number	The weight of the whole organism used for the tissue sample.
ParentProjectName & CompositeParentProject Name	Parent Project Name	Plain Text	A larger or on-going project in which the specific project that the samples were collected for is associated with. A list of possible options can be found at this link: ParentProjectLookUpList

PartsComments	Parts Comments	Plain Text	Records any comments relating to the tissue parts.
PersonnelCode	Personnel Code	Plain Text	Name of the personnel that either collected the sample in the field, or analyzed the sample in the laboratory. A list of possible options is available at this link: PersonnelLookUpList
PrepPreservationDate	Preparation Preservation Date	Date/Time	Date and time the preparation or preservation was started. Format is "dd/mmm/yyyy hh:mm." Deflaut value is “01/Jan/1950 00:00” if the date and time the process started isn’t known or if no process was performed.
PrepPreservationName	Preparation Preservation Name	Plain Text	References the preparation or preservation method performed on the samples prior to analysis. Default value equals "Not Recorded" if unknown. A list of possible options is available at this link: PrepPreservationLookUpList
ProcessedOrganisms ExpandedComments	Processed Organisms Expanded Comments	Plain Text	Further comments on the processed organism used in the analysis.
ProgramName & CompositeProgramName	Program Name	Plain Text	The name of the program that is associated with the sample. A list of possible options is available at this link: ProgramLookUpList
ProjectCode & CompositeProjectCode	Project Code	Plain Text	A code that references the project that is associated with the sample. In some cases, there may not be a specific project but only a program, in which the ProjectCode would be just the program. A list of possible options is available at this link: ProjectLookUpList
ProjectName & CompositeProjectName	Project Name	Plain Text	The project to which the sample result is associated. A list of possible options is available at this link: ProjectLookUpList
ProtocolCode	Protocol	Plain Text	Represents the sampling protocol used, which includes the set of methods, methodology and/or specifications, such as "MPSL-DFG_Field_v1.0." Default value is "Not Recorded." LabQA samples will have "Not Applicable." A list of possible options is available at this link: ProtocolLookUpList
QACode	Quality Assurance Code	Plain Text	Codes that indicate data quality by describing any special conditions, situations or outliers that occurred during or prior to the analysis to achieve the result. The default code, indicating no special conditions, is "None." A list of possible options is available at this link: QALookUpList

ResQualCode	Result Qualifier Code	Plain Text	A code that indicates specific details about the analytical result of the sample, such as if the analyte was detected but not quantifiable or if the result was a field estimation. Default value is “=”, which means that the recorded result is the actual result. A list of possible options is available at this link: ResQualLookUpList
Result	Result	Number	Final numeric result of a given analyte, stored as text to retain trailing zeros. The result should be reported with the appropriate number of significant figures. Result may be left blank as long as an appropriate ResQualCode is provided.
ResultComments	Result Comments	Plain Text	Any comments related to the results or analysis of the sample.
ResultReplicate	Result Replicate	Number	Used to distinguish between replicates created at a single collection in the field. Replicate samples are collected at the same station and date. Therefore, samples collected on different dates but from the same station should have a value of "1." Default value is also "1." This field is utilized for pre-composite replicates.
RL	Reporting Limit	Number	Stands for "Reporting Limits" of the sample analyzed is the minimum value below which data are documented as non-quantifiable, as determined by the laboratory. The default value of “-88” is utilized for surrogates, grain size samples, or if no RL was used.
SampleComments	Sample Comments	Plain Text	Used for any notes or comments specifically related to the sampling event at a particular station and/or the GIS station information verification.
SampleDate & CompositeSampleDate	Sample Date	Date/Time	Refers to the date the sample was collected in the field. Default value equals "01/01/1950" for unknown or null values. For samples with collection times that last longer than one day, like auto samplers, the SampleDate is the date in which sampling began. *For transplanted bivalves, the SampleDate is the date the transplanted organisms were collected, removed, or retrieved from the field.
SampleDateRange (Days)	Sample Date Range (Days)	Number	The number of days in which samples were taken from the environment.
SampleID	Sample ID	Plain Text	A unique identifier supplied by the sampling agency, and is used to track the sample throughout the sampling and analysis processes. This field can be used to tie a result to the sample.

SampleTypeCode & CompositeSampleTypeCode	Sampling Type	Plain Text	Refers to the type or purpose of the sample that is collected or analyzed (i.e. indicates if the sample was used as a control, for calibration purposes, is a combination of multiple samples, used for algae bioassessment, etc.) Default value equals "Not Recorded" if unknown. A list of possible options is at this link: SampleTypeLookUpList
SamplingAgency	Sampling Agency	Plain Text	Refers to the organization or agency that collected the sample. Default value equals "Not Recorded" if unknown. A list of possible options is available at this link: AgencyLookUpList
Sex	Sex	Plain Text	The sex of the organism (e.g. Male, Female, Unknown). A list of possible options is available at the following site (Note: search the first column in the table for "SexList"): VariableCodesLookUpList
SexSummary	Sex Summary	Plain Text	States the sex of the organisms from which samples were taken to make up the composite. A list of possible options is available at the following site (Note: search the first column in the table for "SexList"): VariableCodesLookUpList
SizeDescr	Size Description	Plain Text	A description of the size of organisms (e.g. small, large, 100- 150cm). The size is determined by the discretion of the project as a grouping characteristic, and used only when sizes are estimated. Individual fish measurements are recorded in TotalLength or ForkLength, not this field.
StationCode & CompositeStationCode	Station Code	Plain Text	An alphanumeric code that represents the sampling site at which the sample was collected. The format is ###ABC123, where ### is the Hydrologic Unit number and ABC123 is an alphanumeric description of the station. An example is "111EELBRN", which is Hydrologic Unit 111 and an abbreviated code to indicate “Eel River - South Fork near Branscomb." Some stations may have a code that deviates from this format because the program or organization collecting the sample has their own code system. A complete list of stations and station information is available at this link: StationLookUpList
StationName & CompositeStationName	Station Name	Plain Text	The name of the station at which the sample was collected. A complete list of stations and station information is available at this link: StationLookUpList
SubmittingAgency	Submitting Agency	Plain Text	The organization or agency that is responsible for submission of the data to the database. A list of possible options is available at this link: AgencyLookUpList
TagNumber	Tag Number	Number	References the individual tag number assigned to and placed on the organism (usually only fish).

TissueCollectionComments	Tissue Collection Comments	Plain Text	Records any comments relating to the collection of the tissue sample for laboratory analysis.
TissueID	Tissue ID	Plain Text	A unique identifier that is assigned to the tissue part and is used to differentiate between different parts of the same fish or composited fish, versus an individual fish.
TissueName & CompositeTissueName	Tissue Name	Plain Text	The name of the tissue part used in the composite and analysis. A list of possible options is available at this link: TissueLookUpList
TissuePrep & CompositeTissuePrep	Tissue Prep	Plain Text	References the preparation or preservation method performed on the tissue part in order to create the composite. A list of possible options is available at this link: PrepPreservationLookUpList
TissueResultRowID	Tissue Result Row ID	Plain Text	Internal database identification code. Can be disregarded for analysis.
TissueWeight	Tissue Weight	Number	The measured weight of the tissue part included in the composite.
TLAvgLength(mm)	Total Average Length (mm)	Number	The average total length of fish used, in millimeters, from which samples were taken and added to the composite sample.
TLMax(mm)	Total Maximum Length (mm)	Number	The length of the longest fish used, in millimeters, from which a sample was taken and added to the composite.
TLMin(mm)	Total Minimum Length (mm)	Number	The length of the shortest fish used, in millimeters, from which a sample was taken and added to the composite.
TotalCount	Total Count	Number	The total number of alive organisms in the tissue sample associated with the same OrganismID. For example, if a bag has 45 mussels but 10 are dead, the TotalCount would be 35 and a comment regarding the 10 dead mussels would be recorded in the ProcessedOrganismsExpandedComments.

TotalLength	Total Length	Number	The measured length of the organism from the most forward point of the head, with mouth closed, to the farthest tip of the tail.
Unit	Unit	Plain Text	Indicates the units used in the measurement of the analyte. Chemistry results are indicated by weight of analyte/volume of sample (e.g. "ng/L"). Results from sediment and tissue samples are indicated by weight/weight and includes whether the sample result is reported as wet weight (ww) or dry weight (dw) (e.g. "ng/g ww"). Surrogate recovery results use a unit of "%". Toxicity test results are recorded as percent that survived ("%"), weight of surviving individuals ("mg/ind"), cells per volume ("cells/ml"), reproduction rate ("neonates/adults"), etc. Taxonomic units are indicated by "count" or volume/area (e.g. "um3/cm2"). A list of possible options is available at this link: UnitLookUpList
UnitCompositeWeight	Unit Composite Weight	Plain Text	The units used in measuring the weight of the Composite or SuperComposite. A list of possible options can be found at this link: UnitLookUpList
UnitLengthFish	Unit Length Fish	Plain Text	The units used in measuring the length of the fish. A list of possible options can be found at this link: UnitLookUpList
UnitTissueWeight	Unit Tissue Weight	Plain Text	The units used in measuring the weight of the tissue that was analyzed. A list of possible options can be found at this link: UnitLookUpList
UnitWeightFish	Unit Weight Fish	Plain Text	The units used in measuring the weight of the fish. A list of possible options can be found at this link: UnitLookUpList
WeightAvg(g)	Average Weight (g)	Number	Average weight, in grams, of the organisms whose samples make up the composite.
WeightSource	Weight Source	Plain Text	The physical location where the weight measurements were recorded (e.g. field, lab).

For questions, comments, or concerns regarding these field names and definitions, please send an email with the subject line, “Tissue Data Dictionary,” to: OIMA-Helpdesk@waterboards.ca.gov