

**CEDEN**

California Environmental Data Exchange Network



**Taxonomy Data Submission Guidance Document**

*Updated January 3, 2017*

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## List of Acronyms

CEDEN	California Environmental Data Exchange Network
RDC	Regional Data Center
SWAMP	Surface Water Ambient Monitoring Program
QAO	Quality Assurance Officer

## List of Terms

Controlled Vocabulary	Controlled vocabulary refers to codes and associated definitions maintained within CEDEN to ensure comparability between and among data sets. Current controlled vocabulary contained within associated lookup lists can be found at: <a href="http://ceden.org/CEDEN_checker/Checker/LookUpLists.php">http://ceden.org/CEDEN_checker/Checker/LookUpLists.php</a> . The process for adding new values can be found at: <a href="http://ceden.org/vocabulary_request.shtml">http://ceden.org/vocabulary_request.shtml</a> .
Data Checker	Web-based automated tool that assists data submitters in examining their data sets against the required LookUp lists, formats and business rules.
LookUp Lists	Controlled vocabularies are maintained within the CEDEN database as “LookUp Lists” and are managed through individual RDCs to maintain comparability between RDCs and throughout data sets available through CEDEN.
Primary Key	Uniquely identifies each row in a table and is comprised of a set of columns. No two distinct rows in a table can have the same combination of column values. Required for record uniqueness.
Data Type	Refers to the type of format required for a specific column heading in CEDEN templates. Data type examples include: integer (whole numbers), text, date and time, and decimal.

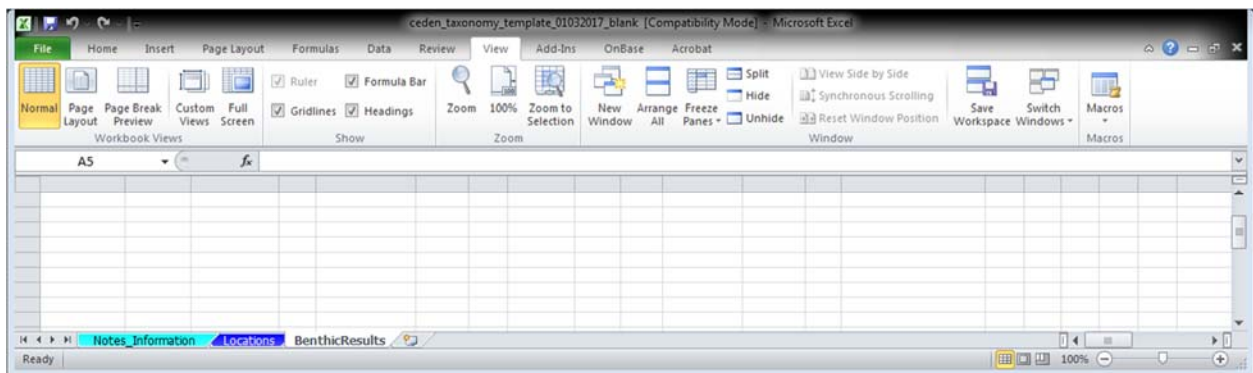
## Introduction

This document is designed to provide guidance on reporting requirements for electronic data to be entered in the California Environmental Data Exchange Network (CEDEN) templates. Detailed below are definitions of data elements and rules for formatting taxonomy data within the CEDEN taxonomy template. For information on entering qualitative organism identifications and Colonial organism counts see Appendix A. Please review the entire Taxonomy Data Submission Guidance Document prior to filling out or submitting the CEDEN Taxonomy Template. If you have any questions regarding these guidelines, contact your [Regional Data Center](#) (RDC) for help.

Regional Data Center (RDC)	Contact	Phone Number	Email
Central Coast RDC	Stacey Swenson	831/771-4114	sswenson@mlml.calstate.edu
Central Valley RDC	Melissa Turner	530/756-5200	mtturner@mlj-llc.com
San Francisco RDC	Cristina Grosso	510/746-7371	cristina@sfei.org

## Taxonomy Data Submission Steps

To submit taxonomy data to CEDEN, start with the CEDEN\_Taxonomy\_Template Excel file which can be found at: [http://ceden.org/ceden\\_datatemplates.shtml](http://ceden.org/ceden_datatemplates.shtml). In this template you will find the two data tables (each in a separate worksheet) required for submitting taxonomy data. This file can be named at the discretion of the user; however, the Excel sheet tabs **MUST** be named **Locations**, and **BenthicResults** respectively.



## CEDEN Taxonomy Template Tables

Below describes what is included and submission requirements for each of the 2 tables in the CEDEN Taxonomy Template:

1. Locations
  - a. Holds information about location sampled

- b. Required only if actual unique latitudes and longitudes were recorded for each sampling event.
- 2. BenthicResults
  - a. Used to record taxonomy results
  - b. Required to submit taxonomy results

The guidelines in the following sections will assist you in getting your data into the CEDEN Taxonomy Template tables. However, if at any time you have questions more specific to your data, (e.g. adding new codes to LookUp lists) contact your local RDC.

Once you have placed your data into the CEDEN Taxonomy Template tables, visit your RDC's website to check and submit your data. Regional Data Center information can be found at: [http://www.ceden.org/data\\_centers.shtml](http://www.ceden.org/data_centers.shtml). The online data submission process includes specific checks on your data to ensure both data integrity and comparability with other data sets. Once your data has passed all of the checks it will be uploaded into the centralized CEDEN database and become available through the CEDEN website ([www.ceden.org](http://www.ceden.org)).

# Taxonomy Template Data Tables

## Locations Table

### PURPOSE:

The locations table contains specific information about the locations sampled. Actual latitudes and longitudes are recorded here for each sampling event. In the event that only target latitudes and longitudes were recorded, it is sufficient to rely on the stations and associated details approved during the controlled vocabulary request process.

### COLUMN REQUIREMENTS:

Columns within the CEDEN Taxonomy Template tables are either considered 1) required, 2) desired or 3) not required. Required columns must be completed in order for data to be accepted by CEDEN. Desired columns are strongly encouraged and should be completed with known values, whenever possible. If the actual value is unknown, then the given default value should be used. Not required columns include additional information that aid in data usability. Individual column requirements are listed below:

#### Required Columns:

- StationCode**
- SampleDate**
- ProjectCode**
- CoordinateNumber**
- ActualLatitude**
- ActualLongitude**
- Datum**

#### Desired Columns:

- EventCode**
- ProtocolCode**
- AgencyCode**
- LocationCode**
- CoordinateSource**

#### Not Required Columns:

- SampleComments
- GeometryShape
- Elevation
- UnitElevation
- StationDetailVerBy
- StationDetailVerDate
- StationDetailComments

**LOCATIONS TABLE STRUCTURE:**

\* Primary Key, required for record uniqueness.

<b>TAXONOMY TEMPLATE HEADER</b>	<b>DATA TYPE</b>	<b>REQUIRED</b>	<b>SIZE</b>	<b>LOOKUP LIST</b>	<b>DEFINITION</b>
StationCode*	Text	Yes	25	Station LookUp	A code representing the StationName and site and should be unique within CEDEN. A single waterbody may have multiple stations. StationCodes and station information must be submitted to the CEDEN system via the new vocabulary request process before lab data can be submitted.
SampleDate*	Date/Time	Yes	20		Refers to the date the sample was collected in the field; formatted as dd/mmm/yyyy.
ProjectCode*	Text	Yes	25	Project LookUp	References the project that is associated with the sample.
EventCode	Text	Desired	20	Event LookUp	Represents the primary reason (e.g. water quality, tissue or bioassessment sampling) of the sampling event at a particular station and date.
ProtocolCode	Text	Desired	50	Protocol LookUp	Represents the sampling protocol used, which includes the set of methods, methodology and/or specifications, such as "MPSL-DFG_Field_v1.0." Established protocols may be used or Regions may document their own sampling protocols. Use "Not Recorded" when environmental samples are taken using unknown protocols.
AgencyCode	Text	Desired	20	Agency LookUp	Refers to the organization or agency that collected the sample. This should be listed on the Chain of Custody (COC) document that accompanies the samples from the field. Use "Not Recorded" if unknown.
SampleComments	Text	No	255		Comments related to the GIS station information verification.
LocationCode	Text	Desired	50	Location LookUp	Describes the physical location in the waterbody where the sample was collected. One sampling event may have a single or multiple locations. Use "Not Recorded" if unknown.



<b>TAXONOMY TEMPLATE HEADER</b>	<b>DATA TYPE</b>	<b>REQUIRED</b>	<b>SIZE</b>	<b>LOOKUP LIST</b>	<b>DEFINITION</b>
GeometryShape	Text	No	50	Variable Codes LookUp	Physical shape of the location. Example values are Line, Point, or Polygon.
CoordinateNumber	Integer	Yes			Number of coordinates recorded at a Location; e.g. 1 for Points (target and actual coordinates), 1 and 2 for Lines. Default value equals "1."
ActualLatitude	Decimal	Yes			Represents the actual latitude for the sample site in decimal degrees with 5 decimal places.
ActualLongitude	Decimal	Yes			Represents the actual longitude for the sample site in decimal degrees with 5 decimal places (must be negative).
Datum	Text	Yes	10	Variable Codes LookUp	The Datum field records the datum that was used on the GPS Device to record the GPS measurements. Example = NAD83. If the datum is unknown, use "NR."
CoordinateSource	Text	Desired	50	Variable Codes LookUp	Describes how the coordinate was measured. For example, if measurement was taken from a map or GPS. Use "NR" if unknown.
Elevation	Decimal	No			Elevation at which the sample was taken. Example = 1.
UnitElevation	Text	No	2	Variable Codes LookUp	Unit of the Elevation measurement. Example = m
StationDetailVerBy	Text	No	100		Agency or person who performed the verification of the station detail information.
StationDetailVerDate	Date/Time	No			Date the station detail information was verified; formatted as dd/mmm/yyyy.
StationDetailComments	Text	No	255		Comments related to the station detail information.

## Benthic Results Table

### PURPOSE:

The purpose of the taxonomy results table is to document data collected for marine benthic infauna, freshwater benthic macroinvertebrate (BMI), algae, bacteria and diatom taxonomic analyses. Note bacteria single species concentrations are stored within the chemistry template, whereas abundance bacteria are stored within the following benthic results table. Each record represents a result from a specific event location for a single organism in a single sample. This table will also contain all supporting QA sample results.

### COLUMN REQUIREMENTS:

Columns within the CEDEN Taxonomy Template tables are either considered 1) required, 2) desired or 3) not required. Required columns must be completed in order for data to be accepted by CEDEN. Desired columns are strongly encouraged and should be completed with known values, whenever possible. If the actual value is unknown, then the given default value should be used. Not required columns include additional information that aid in data usability. Individual column requirements are listed below:

#### Required Columns:

<b>StationCode</b>	<b>FinalID</b>
<b>SampleDate</b>	<b>BAResult*</b>
<b>ProjectCode</b>	<b>Result*</b>
<b>CollectionTime</b>	<b>UnitName</b>
<b>CollectionMethodCode</b>	<b>ResQualCode</b>
<b>SampleTypeCode</b>	<b>QACode</b>
<b>Replicate</b>	
<b>CollectionDeviceName</b>	

\*Conditionally required i.e. **BAResult** or **Result** is required to be populated but not both.

#### Desired Columns:

<b>EventCode</b>	<b>TargetOrganismCount</b>
<b>ProtocolCode</b>	<b>ActualOrganismCount</b>
<b>AgencyCode</b>	<b>ExtraOrganismCount</b>
<b>LocationCode</b>	<b>QCOrganismCount</b>
<b>CollectionDepth</b>	<b>DiscardedOrganismCount</b>
<b>UnitCollectionDepth</b>	<b>EffortQACode</b>
<b>SieveSize</b>	<b>LifeStageCode</b>
<b>GrabSize</b>	<b>Distinct</b>
<b>UnitGrabSize</b>	<b>ComplianceCode</b>
<b>AgencyCode_LabEffort</b>	<b>BatchVerificationCode</b>
<b>PercentSampleCounted</b>	<b>TaxonomicQualifier</b>
<b>TotalGrids</b>	<b>ExcludedTaxa</b>
<b>GridsAnalyzed</b>	<b>PersonnelCode_Result</b>

**GridsVolumeAnalyzed      LabSampleID**

Not Required Columns:

SampleComments  
GeometryShape  
SampleID  
BenthicCollectionComments  
ReplicateName  
ReplicateCollectionDate  
NumberJars  
BenthicCollectionDetailComments  
PersonnelCode\_LabEffort  
BenthicLabEffortComments  
EnterDate  
BenthicResultComments

**BENTHIC RESULTS TABLE STRUCTURE:**

\* Primary Key, required for record uniqueness.

+ Conditionally required i.e. BAResult or Result is required to be populated but not both

<b>TAXONOMY TEMPLATE HEADER</b>	<b>DATA TYPE</b>	<b>REQUIRED</b>	<b>SIZE</b>	<b>LOOKUP LIST</b>	<b>DEFINITION</b>
StationCode*	Text	Yes	25	Station LookUp	A code representing the StationName and site and should be unique within CEDEN. A single waterbody may have multiple stations. StationCodes and station information must be submitted to the CEDEN system via the new vocabulary request process before lab data can be submitted.
SampleDate*	Date/Time	Yes			Refers to the date the sample was collected in the field. Formatted as dd/mmm/yyyy. Use "01/Jan/1950" if the actual SampleDate is unknown.
ProjectCode	Text	Yes	25	Project LookUp	References the project that is associated with the sample.
EventCode	Text	Desired	20	Event LookUp	Represents the primary reason (e.g. water quality, tissue or bioassessment sampling) of the sampling event at a particular station and date.
ProtocolCode	Text	Desired	50	Protocol LookUp	Represents the sampling protocol used, which includes the set of methods, methodology and/or specifications, such as "MPSL-DFG_Field_v1.0." Established protocols may be used or Regions may document their own sampling protocols. Use "Not Recorded" when environmental samples are taken using unknown protocols. Use "Not Applicable" when LabQA samples are taken with unknown protocols.
AgencyCode	Text	Desired	20	Agency LookUp	Refers to the organization or agency that collected the sample. This should be listed on the Chain of Custody (COC) document that accompanies the samples from the field. Use "Not Recorded" if unknown.
SampleComments	Text	No	255		The comments field should be used for any notes or comments specifically related to the sample collection.

<b>TAXONOMY TEMPLATE HEADER</b>	<b>DATA TYPE</b>	<b>REQUIRED</b>	<b>SIZE</b>	<b>LOOKUP LIST</b>	<b>DEFINITION</b>
LocationCode	Text	<b>Desired</b>	50	Location LookUp	Describes the physical location in the waterbody where the sample was collected. One sampling event may have a single or multiple locations. Use "Not Recorded" when the location is unknown.
GeometryShape	Text	No	50	Variable Codes LookUp	Physical shape of the location. Example values are Line, Point, or Polygon.
CollectionTime*	Date/Time	<b>Yes</b>	20		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. Use "00:00" if the time sampling started is unknown.
CollectionMethodCode	Text	<b>Yes</b>	50	Collection Method LookUp	Refers to the general method of collection such as Sed_Grab, Sed_Core, Water_Grab, Autosampler24h, Autosampler7d. Use "Not Recorded" when environmental samples are taken using an unknown method.
SampleTypeCode*	Text	<b>Yes</b>	20	Sample Type LookUp	Refers to the type of sample collected or analyzed. Use "Not Recorded" if unknown.
Replicate*	Integer	<b>Yes</b>			Used to distinguish between replicates created at a single collection in the field. The default value is "1." Replicate samples are collected at the same station and date. Therefore, samples collected on different dates from the same station should both have a Replicate value of "1."
CollectionDeviceName	Text	<b>Yes</b>	50	Collection Device LookUp	Name of the CollectionDevice. Use "Not Recorded" if unknown.
CollectionDepth	Decimal	<b>Desired</b>			Records the depth or penetration, from the surface in the water or sediment column, at which the sample was collected.
UnitCollectionDepth	Text	<b>Desired</b>	50	Variable Codes LookUp	Refers to the units used in the CollectionDepth including cm (centimeters) and m (meters).

<b>TAXONOMY TEMPLATE HEADER</b>	<b>DATA TYPE</b>	<b>REQUIRED</b>	<b>SIZE</b>	<b>LOOKUP LIST</b>	<b>DEFINITION</b>
SieveSize	Text	<b>Desired</b>	50	Variable Codes LookUp	Size of the sieve the sample was passed through; e.g. 0.5mm, none.
SampleID	Text	No	40		Unique identifier supplied by the organization directing the sampling or 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.
BenthicCollectionComments	Text	No	255		Comments related to the benthic collection.
GrabSize	Decimal	<b>Desired</b>			Represents the total area of substrate collected for the sample, regardless of CollectionDevice area size. This is determined by the sampling device area and, if applicable, the number of transects or grabs sampled.
UnitGrabSize	Text	<b>Desired</b>	10	Variable Codes LookUp	Refers to the units used for GrabSize e.g. m2 or cm2.
ReplicateName	Text	No	20		Name of the Replicate Number if applicable; e.g. Transect 1 or T-1. This field was used previously in the CalEDAS database to identify if replicate samples were collected.
ReplicateCollectionDate	Date/Time	No			Represents the date of the ReplicateCollection; format as dd/mmm/yyyy. Use "01/Jan/1950" if the date the replicate was collected is unknown.
NumberJars	Integer	No			Number of jars into which the sample fit for transport to the analytical lab
BenthicCollectionDetailComments	Text	No	255		Comments related to the BenthicCollectionDetail
AgencyCode_LabEffort	Text	<b>Desired</b>	20	Agency LookUp	Agency that sorted or processed the taxonomic sample. Use "Not Recorded" if it is unknown.
PersonnelCode_LabEffort	Text	No	50	Personnel LookUp	Name of the person initially identifying/sorting the taxon.
PercentSampleCounted	Decimal	<b>Desired</b>			Refers to the percent of the sample that was counted.

<b>TAXONOMY TEMPLATE HEADER</b>	<b>DATA TYPE</b>	<b>REQUIRED</b>	<b>SIZE</b>	<b>LOOKUP LIST</b>	<b>DEFINITION</b>
TotalGrids	Integer	Desired			Represents the total number of grids onto which the sample was spread for subsampling.
GridsAnalyzed	Integer	Desired			Represents the number of grids of material pulled from to achieve the TargetOrganismCount.
GridsVolumeAnalyzed	Decimal	Desired			Volume of grids included in the analysis required to achieve the TargetOrganismCount; i.e. if 0.25 from each of 3 grids were analyzed, GridsVolumeAnalyzed would be 0.75. Units are in grids.
TargetOrganismCount	Integer	Desired			Number of organisms at which subsampling will cease.
ActualOrganismCount	Integer	Desired			Total number of organisms recovered by lab sorter in all grids analyzed, including the count above and beyond the target total for the subsample.
ExtraOrganismCount	Integer	Desired			Number of organisms subsampled beyond the target count.
QCOrganismCount	Integer	Desired			Refers to the number of organisms in the subsample counted during the quality control (QC) check. It refers to cases where a sample is re-sorted and more organisms are found. If the original sort found 500 organisms and then it was re-sorted by a different person who found 3 organisms, the QCOrganismCount would be 3 rather than 503.
DiscardedOrganismCount	Integer	Desired			Number of organisms in the subsample determined to be unsuitable for identification.
EffortQACode	Text	Desired	30	QA LookUp	Unique code applied to the result which describes any special conditions, situations or outliers occurring during or prior to lab sorting. Use "NR" if unknown.
BenthicLabEffortComments	Text	No	255		Comments related to lab sorting or sample processing.
FinalID*	Text	Yes	100	Organism LookUp	Refers to the lowest taxon level identified for the organism.

<b>TAXONOMY TEMPLATE HEADER</b>	<b>DATA TYPE</b>	<b>REQUIRED</b>	<b>SIZE</b>	<b>LOOKUP LIST</b>	<b>DEFINITION</b>
LifeStageCode	Text	<b>Desired</b>	5	LifeStage LookUp	Unique code referencing the stage of life of the organism; e.g. adult, juvenile, larvae. Utilize "NR" for not recorded if unknown.
Distinct	Integer	<b>Desired</b>			An indicator of whether or not this record represents a unique taxon and life stage combination in the sample. Use this field to make rows representing the same FinalID and LifeStageCode but separate unidentified groups of species unique. The first instance of the FinalID should use "0" in the "Distinct" column. Additional rows of the same Benthic Collection, FinalID and LifeStageCode should use incrementing integers for this value.
BAResult	Integer	<b>Yes<sup>+</sup></b>			Represents the number of individuals of a given FinalID and stage that were identified within a sample replicate. This is for unadjusted (raw) counts and is to be used for cases where a TargetOrganismCount is used. Either BAResult or Result should be populated (unless QACodes and ResQualCodes other than the defaults are used), but NOT both fields.
Result	Integer	<b>Yes<sup>+</sup></b>			Represents the final numeric result of a given FinalID and stage scaled up to the grab size. Use the "Result" field for counts adjusted to the area sampled and for biovolumes and it may represent raw counts if the full sample is sorted. Either BAResult or Result should be populated (unless QACodes and ResQualCodes other than the defaults are used), but NOT both fields.
UnitName	Text	<b>Yes</b>		Unit LookUp	Refers to how the taxonomic result is measured or expressed. Taxonomic units are indicated by count or volume/area, e.g. um3/cm2
ResQualCode	Text	<b>Yes</b>	10	ResQual LookUp	Qualifies the analytical result of the sample. Default value equals "=".



<b>TAXONOMY TEMPLATE HEADER</b>	<b>DATA TYPE</b>	<b>REQUIRED</b>	<b>SIZE</b>	<b>LOOKUP LIST</b>	<b>DEFINITION</b>
QACode*	Text	Yes	30	QA LookUp	Applied to the result to describe 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." Use "NR" if the special conditions are unknown or if it is unknown whether there were special conditions. If more than one code should be applied to a record, the convention is to list them in alphabetical order separated by a comma and no spaces.
ComplianceCode	Text	Desired		Data Compliance LookUp	Unique code describing the compliance with the associated Quality Assurance Project Plan (QAPP). Use "NR" if the compliance is unknown.
BatchVerificationCode	Text	Desired	10	Batch Verification Lookup	Unique code referencing the Verification of a Batch. Use "NR" if unknown.
TaxonomicQualifier	Text	Desired	50	Variable Codes LookUp	These codes are used to indicate reasons why terminal identification was not achieved for a particular taxon. Default value is "None."
ExcludedTaxa	Text	Desired	50	Variable Codes LookUp	Code representing the taxonomist's justification for excluding a specimen from analysis.
PersonnelCode_Result	Text	Desired	50	Personnel LookUp	Name of the person making the FinalID. May or may not be the same person indicated in PersonnelCode_LabEffort.
LabSampleID	Text	Desired	35		Recommended field intended to provide lab specific identification for an analyzed sample.
EnterDate	Date/Time	No			Date the data were entered into the template; formatted as dd/mmm/yyyy. Default value equals "01/Jan/1950."
BenthicResult Comments	Text	No	130		Comments related to the BenthicResult or individual taxa count.

## **Appendix A: Specific Entry for Qualitative Organism Identifications and Colonial Organism Counts**

# INTRODUCTION

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Appendix A has been created to give additional guidance regarding business rules and formatting for qualitative organism identifications and colonial organism counts. The following sections list example values that can be used to ensure comparability between samples and projects. The example values are listed for a subset of the Taxonomy Template columns and are associated with descriptions and business rules to further guide the data generator in formatting data for these different situations. The examples only reference a subset of the columns in the Taxonomy Template; the Taxonomy Data Submission Guidance Document main body should be used as a reference for definitions and associated lookup lists for how to populate the additional columns not addressed in the examples.

## 1. QUALITATIVE ORGANISM IDENTIFICATIONS

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Qualitative organism identifications refer to samples where the field personnel note the presence of algae in the stream without noting the abundance of the taxon. See Table 1 for recommended coding in these situations.

**Table 1. Example values to be used for qualitative organism identifications**

<b>Taxonomy Template Header</b>	<b>Value</b>	<b>Description &amp; Business Rules</b>
<i>SampleTypeCode</i>	Qualitative	For qualitative organism identifications a SampleTypeCode of "Qualitative" is utilized.
<i>BAResult</i>		Leave BAResult column blank
<i>Result</i>		Leave result column blank
<i>ResQualCode</i>	P	For qualitative organism identifications a ResQualCode of "P" for present is utilized.
<i>UnitName</i>	count	For qualitative organism identifications a UnitName of "count" is utilized.

## 2. COLONIAL ORGANISM COUNTS

Colonial organism counts refer to samples where the objective is to obtain a count for a taxon but a colonial organism is found. Laboratories should not provide a count in these cases due to the difficulty in obtaining a count for certain organism types (e.g. a sponge or hydroid). If a biovolume or biomass is the objective, then record the result and appropriate unit. See Table 2 for recommended coding in these situations.

**Table 2. Example values to be used for colonial organism counts**

<b>Taxonomy Template Header</b>	<b>Value</b>	<b>Description &amp; Business Rules</b>
<i>SampleTypeCode</i>	Epiphyte	For epiphyte colonial organism identifications, a SampleTypeCode of "Epiphyte" is utilized.
	Macroalgae	For Macroalgae colonial organism identifications, a SampleTypeCode of "Macroalgae" is utilized.
	Microalgae	For Microalgae colonial organism identifications, a SampleTypeCode of "Microalgae" is utilized.
<i>BAResult</i>		Leave BAResult column blank
<i>Result</i>		Leave Result column blank
<i>ResQualCode</i>	COL	For qualitative organism identifications, a ResQualCode of "COL" for colonial is utilized.
<i>UnitName</i>	count	For qualitative organism identifications, a UnitName of "count" is utilized.

## **Appendix B: Taxonomy Data Submission Guidance Documentation Amendments**

## AMENDMENTS

Amendments made to the CEDEN Taxonomy Data Submission Guidance Document are documented within Table 1.

**Table 3. Amendments made to the Taxonomy Data Submission Guidance Document.**

<b>Date of Amendment</b>	<b>Document Section</b>	<b>Amendment Summary</b>	<b>Amendment Details</b>
August 23rd 2013	List of Acronyms	Added acronyms.	Added SWAMP and QAO to the List of Acronyms.
August 23rd 2013	Stations Table: Column Requirements	Updated required field designations for Stations Table.	<p>Updated required field designations for Stations Table.</p> <p>Required Columns:            Added: StationAgency, SWRCBWatTypeCode.</p> <p>Desired Columns:            Added: CoordinateSource            Removed: LocalWatershed, LocalWaterbody, Counties_2004_County, SWRCBWatTypeCode, CalWater_2004_RB.</p> <p>Not Required Columns:            Added: EventType1, EventType2, EventType3, LocalWaterShed, LocalWaterBody, Counties_2004_COUNTY, CalWater_2004_RB, NHD_PlusCatchmentComID.            Removed: CalWater_2004_SWRCBNUM2 HydrologicUnit</p>
August 23rd 2013	Stations Table	Added Additional Resources section to Stations Table.	Added an “Additional Resources” section to the Stations Table after Column Requirements.
August 23rd 2013	Stations Table: Stations Table Structure: StationSource	Updated StationSource LookUp list and definition.	Updated StationSource LookUp List from blank to “AgencyLookUp or ProjectLookUp”. Updated Definition from “Agency or project that created the station.” to “Agency or project that submitted the station to CEDEN”.
August 23rd 2013	Stations Table: Stations Table Structure	Added new fields to the Stations Table.	Added new fields to Stations Table Structure: StationAgency, EventType1, EventType2, EventType3 and NHD_Plus_CatchmentComID.
August 23rd 2013	Stations Table: Stations Table Structure: AddDate	Added format information to AddDate	Added “Format as dd/mmm/yyyy” to the AddDate definition.

<b>Date of Amendment</b>	<b>Document Section</b>	<b>Amendment Summary</b>	<b>Amendment Details</b>
August 23rd 2013	Stations Table: Stations Table Structure	Added default value information to Stations Table definitions.	Added default value information to the description field within the Stations Table for CoordinateNumber, Datum, CoordinateSource, SWRCBWatTypeCode
August 23rd 2013	Stations Table: Stations Table Structure: State	Added LookUp list information to State.	Updated State LookUp List from blank to "VariableCodesLookUp".
August 23rd 2013	Stations Table: Stations Table Structure	Updated Stations Table template header names.	Updated Stations Table template header names: "NHD24K_GNIS_Name" to "NHD_24K_v2_GNIS_Name", "NHD24k_Reachcode" to "NHD_24k_v2_ReachCode", "NHD24k_HUC12" to "NHD_24k_v2_HUC_12" and "NHD24k_Hu_12_Name" to "NHD_24k_v2_Name".
August 23rd 2013	Taxonomy Results Table: Purpose	Updated the Taxonomy Results Table purpose section to specify where bacteria results are stored within CEDEN.	Updated Taxonomy Results Table purpose language from "The purpose of the taxonomy results table is to document data collected for marine benthic infauna, freshwater benthic macroinvertebrate (BMI), algae and diatom taxonomic analyses. Each record represents a result from a specific event location for a single organism in a single sample. This table will also contain all supporting QA sample results." to "The purpose of the taxonomy results table is to document data collected for marine benthic infauna, freshwater benthic macroinvertebrate (BMI), algae, bacteria and diatom taxonomic analyses. Note bacteria single species concentrations are stored within the chemistry template, whereas abundance bacteria are stored within the following taxonomy results table. Each record represents a result from a specific event location for a single organism in a single sample. This table will also contain all supporting QA sample results."
August 23rd 2013	Taxonomy Table: Column Requirements	Updated required field designations for Taxonomy Results Table.	Updated required field designations for Taxonomy Results Table: Desired Columns: Added EventCode.
August 23rd 2013	Taxonomy Results Table: Benthic Results Table Structure	Added default value information to Benthic Results Table definitions.	Added default value information to the description field within the Benthic Results Table for SampleDate, ProtocolCode, AgencyCode, LocationCode, CollectionTime, CollectionMethodCode, SampleTypeCode, CollectionDeviceName, ReplicateCollectionDate, AgencyCode_LabEffort, EffortQACode, ResQualCode, QACode, ComplianceCode, BatchVerificationCode, TaxonomicQualifier and EnterDate.

<b>Date of Amendment</b>	<b>Document Section</b>	<b>Amendment Summary</b>	<b>Amendment Details</b>
October 11 <sup>th</sup> 2013	Introduction	Updated Southern California RDC contact information.	Updated Southern California RDC contact information from Shelly Moore to Marlene Hanken contact information.
January 3 <sup>rd</sup> , 2017	Table of Contents, Introduction, Station Table, Location Table and Benthic Table	Removed references to Stations tab	Removed the Stations section and references to Stations tab, updated effected screen shot, and modified StationCode definition to note that station codes must be established through the new vocabulary request process prior to submittal.
January 3 <sup>rd</sup> , 2017	All	Updated use of quotes	Replaced single quotes with double quotes.
January 3 <sup>rd</sup> , 2017	Locations Table and Benthic Results Table	Updated description of "desired" fields	Added reference to using default values when actual values are not know for "desired" fields in the "Column Requirements" paragraph.
January 3 <sup>rd</sup> , 2017	List of Terms	Updated links	Added current links for the LookUp lists and vocabulary request process.
January 3 <sup>rd</sup> , 2017	Introduction	Updated Central Coast RDC contact information	Updated the Central Coast RDC contact information from Mark Pranger to Stacey Swenson.
January 3 <sup>rd</sup> , 2017	Locations Table and Benthic Results Table	Modified use of "default" wording	Changed most instances of "Default equals...if unknown" to "Use...if unknown."
January 3 <sup>rd</sup> , 2017	All	Various edits	Removed double spaces and duplicate words and other small edits.
January 3 <sup>rd</sup> , 2017	Locations Table and Benthic Results Table	Updated StationCode definition	Included that StationCode must be unique within CEDEN, not just within the study design, as previously stated.
January 3 <sup>rd</sup> , 2017	Table Of Contents and Benthic Results Table	Reference to Benthic Results	Changed "Taxonomy Results table" to "Benthic Results table" to reflect the tab name in the Excel template.
September 21, 2017	Benthic Results Table	Updated Distinct definition	Changed the definition to clarify when to increase the distinct value and removed reference to "-88."
September 21, 2017	Introduction	Removed Southern Coast RDC contact information	Removed Southern Coast RDC contact information