

ENTERING DATA SUMMARY AND CALCULATED DATA INFORMATION

Table 1 Single and Daily Discharge (Data Summary Entry)

Parameter	Data Type	Units	Collection Date
Biochemical Oxygen Demand (BOD) (5 day @ 20 Deg. C)	Single	mg/L	For Collection Date use the date the sample was collected for the "Single" and "Daily Discharge" values.
Biochemical Oxygen Demand (BOD) (5 day @ 20 Deg. C)	Daily Discharge	lb/day	
Total Suspended Solids (TSS)	Single	mg/L	
Total Suspended Solids (TSS)	Daily Discharge	lb/day	
Flow	Single	MGD	
pH	Single	SU	
Chlorine, Total Residual	Single	mg/L	
Temperature	Single	Degrees F	
E. coli	Single	MPN/100 mL	
Fecal Coliform	Single	MPN/100 mL	
Enterococci	Single	MPN/100 mL	
Oil and Grease	Single	mg/L	
Oil and Grease	Daily Discharge	lb/day	
Copper, Total Recoverable	Single	µg/L	
Copper, Total Recoverable	Daily Discharge	lb/day	
Nitrate, Total (as N)	Single	mg/L	
Nitrite, Total (as N)	Single	mg/L	
Ammonia, Total (as N)	Single	mg/L	
Nitrogen, Total (as N)	Single	mg/L	
Phosphate, Total (as N)	Single	mg/L	
Orthophosphate, Total (as N)	Single	mg/L	
Total Dissolved Solids (TDS)	Single	mg/L	
Hardness, Ca (as CaCO ₃)	Single	mg/L	

Data Type

Unless directed otherwise, all parameter concentrations and flow data shall be entered using the data type **"Single"**.

Daily Discharge

Unless directed otherwise, all parameters having mass loading monitoring requirements shall be entered using the data type **"Daily Discharge"**. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day.

Collection Date

Unless directed otherwise, the collection date of the sample shall be entered under the **"Collection Date"**.

Analytical Method

The analytical method entered for sample analysis shall match lab analysis conducted for the sample. For flow data and daily discharge use **"Date Unavailable [DU]"** as analytical method.

Qualifier

Use "=" for flow data, calculated values and sample values greater than the ML (minimum level) or RL (reporting limits).

Use "<" for calculated and sample values lower than the MDL (minimum detection limit).

Use "<=" for data and sample values equal to or lower than the MDL.

Use ">" for data and sample values that exceeds the test limits, typical, testing methods for bacteria may use this.

Use ">=" for data and sample values that equal or exceed the test limits.

Use "ND" for analytical result less than the MDL. You will need to enter the MDL value under "MDL".

Use "DNQ" if the result is less than ML (minimum level) or RL but greater than or equal to the MDL. You will need to enter MDL, ML and RL

Significant Figures

All data should be rounded to significant figures. Laboratories should provide results to the significant figures specified in the 40 CFR Part 136 for the particular method used (usually to two significant figures).

ENTERING DATA SUMMARY AND CALCULATED DATA INFORMATION

Table 2 Bioassay Results (Multiple Species)

Parameter	Data Type	Analytical Method	Units	Collection Date
Chronic Toxicity (Species 1)	Single	Daphnid Survival and Reproduction Test	TUc	For Collection Date use the date the sample was collected.
Chronic Toxicity (Species 2)	Single	Fathead Minnow Larval Survival and Growth Test	TUc	
Chronic Toxicity (Species 3)	Single	Green Algae Growth Test	TUc	
Acute Toxicity	Single	"If Acute Toxicity is required, select the analytical methods show above for tests"	TUa	

Parameter

For Chronic Toxicity with multiple analysis species, use "**Chronic Toxicity (Species 1)**" for first species and "**Chronic Toxicity (Species 2)**" for second species and "**Chronic Toxicity (Species 3)**" for third species for parameter.

If Acute Toxicity is used select "Acute Toxicity" and select analytical method to match species, i.e., "**Fathead Minnow Larval Survival and Growth Test**" and/or "**Daphnid Survival and Reproduction Test**".

Data Type

Unless directed otherwise, all parameter concentrations and flow data shall be entered using the data type "**Single**".

Units

Units to be used for Chronic Toxicity are "**TUc**" or "**Pass/Fail (Pass=0; Fail = 1)**" if using t-test or modified t-test. Units to be used for Acute Toxicity are "**TUa**" or "**Pass/Fail (Pass=0; Fail = 1)**" if using t-test or modified t-test.

Collection Date

Unless directed otherwise, the collection date of the sample shall be entered under the "**Collection Date**".

Analytical Method

The analytical method entered for sample analysis shall match lab analysis conducted for the sample. For bioassay data use the method specified in the permit. Analytical methods include for different species include "**Fathead Minnow Larval Survival and Growth Test**", "**Daphnid Survival and Reproduction Test**", "**Green Algae Growth Test**".

For Acute toxicity indicate under analytical method whether it is for "**Fathead Minnow Larval Survival and Growth Test**" and/or "**Daphnid Survival and Reproduction Test**".

Acute toxicity for **Pimephales promelas** can be calculated from the results of the chronic toxicity test for **Pimephales promelas** and reported along with the results of each chronic test. Acute toxicity for **Ceriodaphnia dubia** cannot be calculated from the results of the chronic toxicity test for **Ceriodaphnia dubia** because the test design is not amenable to calculation of a lethal concentration (LC₅₀) value as needed for the acute requirement.

ENTERING DATA SUMMARY AND CALCULATED DATA INFORMATION

Table 3 Average Monthly (Calculated Data Entry)

Parameter	Data Type	Units	Collection Date
Flow	Average Monthly (AMEL)	MGD	Last Date of Month
Biochemical Oxygen Demand (BOD) (5 day @30 Deg. C)	Average Monthly (AMEL)	mg/L	
		lb/day	
BOD5 @ 20 Deg. C, Percent Removal	Percent Reduction	%	
Total Suspended Solids (TSS)	Average Monthly (AMEL)	mg/L	
		lb/day	
Total Suspended Solids (TSS), Percent Removal	Percent Reduction	%	
Copper, Total Recoverable	Average Monthly (AMEL)	µg/L	
		lb/day	

DATA TYPES

Average Monthly (AMEL)

The Average Monthly (AMEL) value is the sum of the highest allowable average of “daily discharges” over a calendar month. Calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month.

“Daily discharges” means the “discharge of a pollutant” measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the day.

For the Average Monthly (AMEL) mass loading, it is the sum of the product of the flow rate (mgd) x measured highest allowable average “daily discharge” (mg/L) x 8.34 divided by the number of “daily discharges” measured during that month.

The calculated Average Monthly (AMEL) values shall be reported on the last calendar day of the month.

BOD5 @ 20 Deg. C, Percent Removal, or Total Suspended Solids (TSS), Percent Removal

The percent removal for each day shall be calculated according to the following equation:

Daily Discharge Percent Removal

$$= ((\text{Influent Concentration} - \text{Effluent Concentration}) / \text{Influent Concentration}) \times 100\%$$

Average Monthly Percent Removal

$$= \text{Sum of Daily Discharge Percent Removals} / \text{Number of Days Percent Removal is calculated.}$$

The calculated percent removal shall be reported on the last calendar day of the month.

Collection Date

Use the last day of the month for “**Collection Date**”.

Significant Figures

All data should be rounded to significant figures. Laboratories should provide results to the significant figures specified in the 40 CFR Part 136 for the particular method used (usually to two significant figures).

ENTERING DATA SUMMARY AND CALCULATED DATA INFORMATION

Table 4 Average Weekly (Calculated Data Entry)

Parameter	Data Type	Units	Collection Date
Biochemical Oxygen Demand (BOD) (5 day @20 Deg. C)	Average Weekly (AWEL)	mg/L	The Saturday of the calendar week of sampling
		lb/day	
Total Suspended Solids (TSS)	Average Weekly (AWEL)	mg/L	
		lb/day	

DATA TYPES

Average Weekly (AWEL)

The Average Weekly (AWEL) value is the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all “daily discharges” measured during a calendar week divided by the number of “daily discharges” measured during that calendar week.

“Daily discharges” means the “discharge of a pollutant” measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the day.

For the Average Weekly discharge loading, it is the sum of the product of the flow rate (mgd) x calculated highest allowable value average of “daily discharges” (mg/L) x 8.34 divided by the number of “daily discharges” measure for that calendar week.

The analytical result for comparison of the Average Weekly Effluent Limitation shall be reported on the ending Saturday of the calendar weeks within the reporting month.

For the beginning of the month, If samples are collected during the calendar week in the previous month and the ending Saturday is in the Calendar Month of reporting, the discharge shall report the results of the samples collected in the previous week and report the analytical result on the ending Saturday of the Calendar Month of reporting.

For the end of the month, if the ending Saturday falls on the following month no analytical result for comparison of the AWEL is required, however, any samples collected during the last calendar week shall be reported.

Analytical Method

The analytical method entered for sample analysis shall match lab analysis conducted for the sample. For loadings use the Analytical Method as “Data Unavailable”.

Units

For concentration use either “**mg/L**” or “**µg/L**” whichever is specified in the permit.
For mass base loading use “**lb/day**”.

Collection Date

Use the Saturday of the Calendar Week of Sampling for the “**Collection Date**”.

Significant Figures

All data should be rounded to significant figures. Laboratories should provide results to the significant figures specified in the 40 CFR Part 136 for the particular method used (usually to two significant figures).

ENTERING DATA SUMMARY AND CALCULATED DATA INFORMATION

Table 5 Instantaneous Maximum/ Instantaneous Minimum (Calculated Data Entry)

Parameter	Data Type	Units	Collection Date
pH	Instantaneous Minimum	SU	The day of sample collection
pH	Instantaneous Maximum	SU	
Chlorine	Instantaneous Maximum	mg/L	

Parameters

Daily monitored parameters shall be reported on the calendar day of collection. If multiple pH and Chlorine is taken daily use “*Instantaneous Minimum*” and “*Instantaneous Maximum*”, otherwise report as “*Single*” for concentration.

Analytical Method

The analytical method entered for sample analysis shall match lab analysis conducted for the sample.

Collection Date

Use the date of sample collection for “*Collection Date*”.

Significant Figures

All data should be rounded to significant figures. Laboratories should provide results to the significant figures specified in the 40 CFR Part 136 for the particular method used (usually to two significant figures).

Table 6 Maximum Daily (Calculated Data Entry)

Parameter	Data Type	Units	Collection Date
Oil and Grease	Maximum Daily (MDEL)	mg/L	The day of sample collection
		lbs/day	
Copper, Total Recoverable	Maximum Daily (MDEL)	µg/L	
		lbs/day	

Parameters

Daily monitored parameters shall be reported on the calendar day of collection

Maximum Daily (MDEL)

The Maximum Daily (MDEL) value is the highest allowable average of “daily discharges” over a day, calculated as the sum of all “discharges” measured during a day divided by the number of “discharges” measured during that day.

Daily Discharges

“Daily Discharges” means the “discharge of a pollutant” measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “maximum daily” is calculated as the average of the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in concentration, the “maximum daily” is calculated as the average measurement of the pollutant over the day.

Collection Date

Use the date of sample collection for “*Collection Date*”.

Units

For concentration use either “*mg/L*” or “*µg/L*” whichever is specified in the permit.
For mass base loading use “*lb/day*”.

Significant Figures

All data should be rounded to significant figures. Laboratories should provide results to the significant figures specified in the 40 CFR Part 136 for the particular method used (usually to two significant figures).

ENTERING DATA SUMMARY AND CALCULATED DATA INFORMATION

Table 7 Geomean and Other Calculated Data for Bacteria (Calculated Data Entry)

Parameter	Data Type	Units	Collection Date
E. Coli	Geometric Mean of Minimum of 5 Samples in 30-Days	MPN/100 mL	Last Date of Month
Enterococci	Geometric Mean of Minimum of 5 Samples in 30-Days	MPN/100 mL	
Fecal Coliform	Geometric Mean of Minimum of 5 Samples in 30-Days	MPN/100 mL	
Fecal Coliform	Not to exceed a specific limit more than once within any 30-day period	%	

Data Type

Use the Data type shown above.

Analytical Method

The analytical method entered for sample analysis shall match lab analysis conducted for the sample.

Collection Date

Use the last day of the month for "***Collection Date***".

For Fecal Coliform, report % if the following:

If more than ten percent of total samples for fecal coliform exceed 400 MPN per 100 milliliters, then report the percentage.

SIGNIFICANT FIGURES

Significant Figures

1. All nonzero digits are significant.
2. Zeros between nonzero digits are significant (e.g., 1.005 mg has four significant figures)
3. Zeros to the left of the first nonzero digits in a number are not significant (0.05 mg has one significant figure)
4. When a number ends in zeros to the right of a decimal point, they are significant (0.00500 has three significant figures)
5. When a number ends in zeros that are not to the right of a decimal point, you cannot tell if they are significant (e.g., 10300 kg).
6. Only measurements have a limited number of significant figures. Given values, constants, etc. are assumed to have an infinite number of significant figures.

Addition and Subtraction

The last digit retained is set by the first “doubtful digit” (i.e., the last significant digit which is farthest to the left in the column of numbers).

$$\begin{array}{r} 37.24 \\ +10.3 \\ \hline 47.54 \end{array} \text{ round to } \mathbf{47.5}$$

$$\begin{array}{r} 7003 \\ 21.2 \\ + 130.00 \\ \hline 7154.20 \end{array} \text{ round to } \mathbf{7154}$$

Multiplication and Division

The number of significant figures in the answer equals that of the quantity that has the smallest number of significant figures.

Combined Operations

There is mixed guidance in the way of rules on combined operations. For this course, we round only after the completion of all operations.

Rounding

When rounding, look at the digit following the digit that is to be the last one in the result:

1. If that digit is less than 5, drop it and all figures to the right of it.
2. If that digit is greater than 5, increase by 1 the number to be rounded (the preceding digit) and drop everything after it.
3. If it is 5, round so that the preceding digit will be even (keeping in mind that zero is considered an even number when rounding off).

Example – Round the following to three significant figures:

7.43378 rounds to 7.43

5.12821 rounds to 5.13

2.40568 rounds to 2.40

8.93532 rounds to 8.94

CIWQS REFERENCE DOCUMENTS

Link to Log-In - <http://ciwqs.waterboards.ca.gov/>

CIWQS HELP CENTER – NPDES

Link to State Water Resources Control Board Web Site -

http://www.waterboards.ca.gov/water_issues/programs/ciwqs/chc_npdes.shtml

Link to Regional Water Board Web Site -

http://www.waterboards.ca.gov/coloradriver/water_issues/programs/ciwqs_esmr/index.shtml

Support for the National Pollutant Discharge Elimination System

CIWQS Registration Forms

[Legally Responsible Official](#)

[Data Submitter](#)

eSMR2 Presentations and Helpful Information

[Workshop Presentation](#) - The presentation given in our training class

[User Guide](#) - User guide for the web portion of your submittal

[Submittal Checklist](#) - Bulleted list of steps to help you through your first couple submittals

[Common Errors](#) - A list of the most common errors that you may receive when uploading a CDF, EDF, or PET export file and how to resolve them

[Business Rules](#) - Several guidelines on how to enter information

[User Group webpage](#) - Find out the latest progress in eSMR development

[Frequently Asked Questions](#) - The most common questions we hear and their answers

PET Tool / CIWQS Data Format Installer

[Data Types](#) - Guidelines on how Data Types should be used in the Permittee Entry Template (PET) Tool

Optional Tools

Pivot - Review your uploaded monitoring data in an easy to read format prior to certifying and submitting.

(“Save” the Excel file to your computer before installing).

[Instructions](#) | [Excel 2003](#)

[Instructions](#) | [Excel 2007](#)

Limit - Use after the Pivot Tool to compare your permit limits to your monitoring data. You must populate the limits in the Limit tool.

[Instructions](#) | [Excel 2003](#)

[Instructions](#) | [Excel 2007](#)

[Additional NPDES Information](#)

Questions or Comments about NPDES?

Please email the [CIWQS Help Center](#) or phone 866-79-CIWQS (24977)

Regional Board Contacts are:

John Carmona – jcarmona@waterboards.ca.gov or phone (760) 340-4521

Jose Figueroa-Acevedo – jfigueroa-acevedo@waterboards.ca.gov or phone (760) 352-1464

State Board Contacts are:

CIWQS Help Center – ciwqs@waterboards.ca.gov or phone 866-792-4977

Rassam Zarghami – Rzarghami@waterboards.ca.gov or phone (916) 341-5516 or fax (916) 341-5463