



MEASUREMENT AND REPORTING MANUAL

State Water Resources Control Board
Division of Water Rights

December 2023

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1 Abbreviations and Glossary

1.1 Abbreviations

| | |
|-----------------------------------|--|
| ACP | Alternative Compliance Plan |
| Annual Report | Annual Water Diversion and Use Report as required under California Code of Regulations, Title 23, Division 3, Chapter 2.7 (Sections 907 through 930) |
| Board or State Water Board | California State Water Resources Control Board |
| Deputy Director | Deputy Director for the Division of Water Rights |
| Division | The Division of Water Rights |
| Regulation | The Water Measurement and Reporting Regulation; California Code of Regulations, Title 23, Division 3, Chapter 2.8 (Sections 931 through 938) |
| RMS | Report Management System |
| SB 88 | Senate Bill 88 |

1.2 Glossary

| | |
|-------------------------------|--|
| Accuracy | The measured value relative to the actual value, expressed as a percentage and calculated as $Accuracy = 100\% * (Measured Value - Actual Value) / Actual Value$ |
| Actual value | The value as determined through laboratory, design, or field-testing protocols |
| Alternative Compliance | Any acceptable means of complying with the Regulation except through strict compliance using a Measuring Device or Measurement Method due to either infeasibility, excessive cost, unreasonable use or waste of water, or unreasonable impact on public trust uses |

| | |
|--|---|
| Annual Water Diversion and Use Report | Annually submitted reports including Supplemental Statements of Water Diversion and Use Forms (pursuant to Water Code Section 5104), Reports of Permittee and Licensee (pursuant to California Code of Regulations, Title 23, Sections 925 and 929), and Reports of Registration and Certificate Holders (pursuant to California Code of Regulations, Title 23, Section 924) |
| Diversion | The taking of water from a surface or subterranean stream flowing through a known and definite channel, or from another surface water body, into a conduit (e.g., canal or pipeline) or water impoundment facility (e.g., reservoir) |
| Diverter | Any person or government agency who is: <ul style="list-style-type: none"> (a) Authorized to divert water under a license, permit, temporary permit, or registration; or (b) Required (under Water Code, Division 2, Part 5.1) to file a Statement of Water Diversions and Use. |
| Division | State Water Resources Control Board's Division of Water Rights. The Division of Water Rights can be contacted via the following email addresses and phone number, depending on your inquiry: <ul style="list-style-type: none"> • Generic Inquiries: dwr@waterboards.ca.gov or 916-341-5300 • Measurement Inquiries: dwr-measurement@waterboards.ca.gov • Annual Reporting Inquiries: rms@waterboards.ca.gov |
| Measured value | The value indicated by a Measuring Device, Measurement Method, or determined through calculations using other measured values (e.g., <i>Measured Volume = Measured Flow Rate * Measured Duration of Flow</i>) |
| Measuring Device | Any device capable of recording the date, time, and a numeric value of either water flow rate, water velocity, water elevation, or volume of the water diverted |
| Measurement Method | Any method capable of accounting for the rate of direct diversion, rate of collection to storage, and rate of withdrawal or release from storage while meeting the accuracy standards required by the Regulation |
| Place of use | The legal location where water is used under the water right or claimed water right, including <ul style="list-style-type: none"> (a) Stockponds (for livestock stockpond registrations and stockpond certificates) (b) Ponds (for single purpose recreational ponds) |

- (c) Other ponds or reservoirs (if designated as a place of use by the Deputy Director for the purposes of compliance with this Regulation)
- (d) Designated reach of the stream or wetland area (for instream flow beneficial uses and wetland preservation and enhancement dedications)

| | |
|---------------------------------|--|
| Point of diversion | The legal location where water is diverted from its source |
| Qualified Individual | Any person meeting the criteria specified in the Regulation who can perform the required tasks for using and installing a Measuring Device, preparing and implementing a Measurement Method, and/or certifying an Alternative Compliance Plan |
| Type of Measuring Device | A class of Measuring Devices manufactured or built to perform similar functions (e.g., inline flow meters, submerged orifice gates, rectangular, v-notch, and broad crested weirs) |
| Water year | The 12-month period beginning October 1 st of the previous calendar year and extending through September 30 th . The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. For example, water year 2023 extends from October 1 st , 2022 through September 30 th , 2023. |

2 Introduction

California's recent droughts have highlighted the need for timely and accurate information on the amount of water being diverted by water right holders throughout the State. The purpose of the Measurement and Reporting Manual (Manual) is to guide diverters through their obligations under the State Water Board's Water Measurement and Reporting Regulation (Regulation). While this document is meant to assist diverters with compliance, interested parties are encouraged to review the Regulation, and contact the Division of Water Rights (Division) with questions.

2.1 Background

In 2015, the legislature passed Senate Bill 88 (SB 88), establishing measurement and reporting requirements for California's water right holders and claimants. Governor Edmund G. Brown Jr. signed SB 88 into law on June 24, 2015.

SB 88 authorized the State Water Resources Control Board (State Water Board or Board) to adopt an emergency regulation requiring measurement and reporting of water diversions under permits, licenses, registrations, and statements of diversion and use. On January 19, 2016, the State Water Board adopted the Water Measurement and Reporting Regulation, and it went into effect upon approval by the Office of Administrative Law and filing with the Secretary of State on March 21, 2016.

2.2 Purpose of this Manual

The goal of this Manual is to clarify diversion measurement and reporting obligations. The Regulation can be confusing, and this Manual is designed to help you understand if you are required to measure diversions, how frequently to measure, and how to report measurement information to the Board. This Manual is part of the Division's ongoing efforts to improve compliance by clearly communicating requirements. The Board hopes this guidance will clarify requirements and improve reported water diversion data. If you have any questions about your reporting obligations, please contact us at dwr-measurement@waterboards.ca.gov or (916) 341-5300.

3 Diversers Required to Measure

Your measurement and reporting requirements (requirements) depend on the type of water rights you have, and the volume of water that *could* be diverted under those rights. The first step in understanding your requirements is to identify what kind of water rights you have.

The following types of water rights require measurement and reporting:

- Riparian Claim
- Pre-1914 Appropriative Claims
- Post-1914 Appropriative Rights (permits and licenses)
- Registrations
- Cannabis Registrations.

If you need help identifying your water rights, the Division maintains a [Frequently Asked Questions webpage](#) and [Know Your Water Right Guide](#). Please consult these resources for additional information or contact us at dwr@waterboards.ca.gov with questions.

Once you have identified your water right type, the next step is to understand the maximum size of your annual diversion. This will determine if you are required to measure your diversions. Your requirements are based on your *potential maximum* diversion or storage capacity – not how much you actually diverted in recent years. Generally, if you divert more than 10 acre-feet per year, you must measure and report your diversions to the Board. Similarly, if you can store more than 10 acre-feet at any given time, you will need to report measurement data to the Board. These requirements can be broken down more specifically by water right type and are described further in Table 1 and the following sections.

Table 1: Regulation Applicability by Water Right Type

| | For diversers who have... | ...the Regulation applies if the.... |
|-----|---|---|
| 3.1 | A riparian or pre-1914 claim, | Maximum historical annual diversion amount or future intended diversion amount exceeds 10 acre-feet. |
| 3.2 | A post-1914 water right that is a license, permit, or temporary permit, | Face value of the water right exceeds 10 acre-feet. |
| 3.3 | A registration, | Authorized annual diversion amount or the authorized capacity of the storage facility exceeds 10 acre-feet. |
| 3.4 | Multiple water rights or claims that share a point of diversion, | Total diversion volume exceeds 10 acre-feet per year. |
| 3.5 | Multiple water rights or claims that share a place of use, | Total diversion volume exceeds 10 acre-feet per year. |

3.1 Riparian and Pre-1914 Appropriative Claims

Riparian and pre-1914 appropriative claims must measure and report their diversions if they divert more than 10 acre-feet a year. If you have ever diverted more than 10 acre-feet per year, then you need to measure your diversions this coming year. Even if you haven't surpassed 10 acre-feet yet, if you think you might in the future, you should measure your diversions.

For newly acquired pre-1914 claims, check the Initial Statement of Diversion and Use on file and make sure it accurately reflects the amount of water you plan to use. Please contact the Division of Water Rights at dwr@waterboards.ca.gov if the amount of water on your Initial Statement of Diversion and Use is incorrect.

Riparian and pre-1914 diversions are required to submit Statements of Diversion and Use (statements) each year. Statements should include a datafile that includes diversion measurement data, which are discussed more in Chapter 8 of this Manual.

3.2 Permits and Licenses

Permits or licenses to divert more than 10 acre-feet per year must report measurement data to the Board. This includes temporary permits. For example, if your permit's face value is greater than 10 acre-feet per year, the measurement and reporting requirements apply to you.

3.3 Registrations

Registrations with a face value or storage capacity of more than 10 acre-feet must report measurement data to the Board. While most Registrations have a face value under 10 acre-feet, you should confirm your face value and storage capacity to determine whether you must measure and report your diversions.

3.4 Multiple Water Rights and Claims that Use the Same Point of Diversion

Multiple water rights can divert from the same point of diversion as other rights. For example, a single pump station can deliver water into a canal that then distributes water to numerous right holders. As another example, a single owner could hold several licenses and permits, in addition to a riparian claim, all of which use the same pump to divert water from a river.

Measurement and reporting are required if the combined total of all rights from a single point of diversion is greater than 10 acre-feet per year. An individual right might be less than 10 acre-feet, but if the total diversions from a shared point of diversion is greater than 10 acre-feet, then diversion measurement and reporting are required. Diversion volumes must be reported separately by right or claim, not the total volume diverted at the point of diversion. Additional details are provided in Chapter 8 of this Manual.

3.5 Multiple Water Rights and Claims that Serve the Same Place of Use

Measurement and reporting are required if the combined total of all rights serving the same place of use is greater than 10 acre-feet per year. An individual right might be less than 10 acre-feet, but if the maximum total diversion to a place of use is greater than 10 acre-feet per year, measurement and reporting are required for each right or claim that diverts to that location. Diversion volumes must be reported separately by right or claim, not the total volume diverted to the place of use. Additional details are provided in Chapter 8 of this Manual.

4 Measurement Frequency

Diversions volumes should be measured monthly, weekly, daily, or hourly depending on your type of diversion and volume diverted. This data should be reported to the Board annually as part of your Annual Report. Measurement frequency requirements are based on your direct diversion or storage volume. Table 2 shows the required measurement frequency, with the measurement frequency increasing as diversions increase.

Table 2: Measurement Frequency Requirements

| Diversion Type | Volume Threshold | Required Measurement Frequency ^(a) |
|--|----------------------------|---|
| Direct Diversion: Requirements are based on the face value or maximum annual historical use (whichever is greater) | More than 10,000 acre-feet | Hourly, plus telemetry requirements |
| | 1,000 to 10,000 acre-feet | Hourly |
| | 100 to 999 acre-feet | Daily |
| | 10 to 99 acre-feet | Weekly |
| Diversion to Storage: Requirements are based on storage capacity | 10,000 acre-feet or more | Hourly, plus telemetry requirements |
| | 1,000 to 9,999 acre-feet | Hourly |
| | 200 to 999 acre-feet | Daily |
| | 50 to 199 acre-feet | Weekly |
| | 10 to 49 acre-feet | Monthly |

(a) Notable exceptions to the listed measurement frequency include the following:

- Northern California Coastal Streams: Hourly monitoring is required for all new permits in the [AB2121](#) area, which includes Marin, Sonoma, and portions of Napa, Mendocino, and Humboldt counties.
- Cannabis Registrations: Daily (or more frequent) monitoring is required. Please see the Board's [Cannabis Cultivation Policy](#) for specific requirements.

4.1 Direct Diversions

Direct diversions must be measured at either an hourly, daily, or weekly frequency, depending on the volume diverted. The measurement frequency for owners with multiple water rights using the same point of diversion or serving the same place of use is based on the combined diversions across all rights.

Hourly

Direct diversions must be measured every hour for annual diversions of 1,000 acre-feet or more.

Daily

Direct diversions must be measured every day for annual diversions of at least 100 acre-feet but less than 1,000 acre-feet.

Weekly

Direct diversions must be measured every week for annual diversions of more than 10 acre-feet but less than 100 acre-feet.

4.2 Diversions to Storage

Measurement frequency for diversions to storage is based on the capacity of the storage facility, not the amount diverted. The larger your storage facility, the more frequently you must measure your diversions.

Hourly

Diversions to storage must be measured hourly if the storage facility has a capacity of 1,000 acre-feet or more.

Daily

Diversions to storage must be measured daily if the storage facility has a capacity of at least 200 acre-feet but less than 1,000 acre-feet.

Weekly

Diversions to storage must be measured weekly if the storage facility has a capacity of at least 50 acre-feet but less than 200 acre-feet.

Monthly

Diversions to storage must be measured monthly if the storage facility has a capacity greater than 10 acre-feet but less than 50 acre-feet.

5 Options to Measure

There are three ways to measure your diversions: install a Measuring Device, use a Measurement Method, or implement an Alternative Compliance Plan. You may also use a combination of one or more of these options, as necessary.

5.1 Measuring Device

The term “Measuring Device” has a specific definition in the context of the Regulation. It can be any device that records the date, time, and at least one of the following: total volume of water diverted, flow rate, water velocity, or water elevation. Measuring Device data must be recorded in a compatible format to Microsoft Excel, Microsoft Access, or another software authorized by the Deputy Director for the Division of Water Rights. More information on datafile requirements can be found in Chapter 8. If a Measuring Device measures the flow rate, water velocity, or water elevation, but not water volume, the diverter must report how they converted the measured value to volume.

Each Measuring Device must be installed either at the point of diversion or between the point of diversion and the place of use or delivery. No water may be delivered or used prior to being measured.

5.2 Measurement Method

The term “Measurement Method” also has a specific definition in the context of this Regulation. A Measurement Method is any way of measuring the volume of water diverted that does not involve using a Measuring Device at each point of diversion. Examples of Measurement Methods may include tracking the number of times a tank is filled and emptied over a time interval or using electricity records and a pump curve to estimate water pumped over a given time period. Measurement Methods must meet the same frequency and accuracy standards required of diversions measured with a Measuring Device.

A Measurement Method may be used for an individual water right or a group of water rights that share a point of diversion and serve multiple diverters. A Measurement Method must be able to measure direct diversions, diversions to storage, and withdrawals from storage. Any Measurement Method must be able to quantify the amount of water diverted under each individual water right used. In the event of conflicting measurement requirements between rights using the same Measurement Method, the more stringent measurement requirements apply.

Diverters who use a Measurement Method must complete the Measurement Method form on the [Water Rights Form and Survey Submittal Portal](#). Diverters must renew their Measurement Method at least every five years. Measurement Methods must be prepared by a Qualified Individual and contain all the following information:

- Name and contact information of all participants, including an agent to serve as the primary contact person

- Topographic or aerial map(s) showing location of participants and covered lands (including all assessor parcel numbers)
- Description of how the Measurement Method is implemented to meet the requirements of the Regulation
- Documentation to verify the accuracy of the Measurement Method
- Description of the water rights covered by the Measurement Method including all the following:
 - Water Right ID
 - Owner name
 - Water right type
 - First date of diversion
 - Monthly and annual diversion amounts
 - Place of use
 - Purpose of use
 - Alternative sources of water
- Description of how the Measurement Method will account for each water right during periods of drought.

5.3 Alternative Compliance Plan

There may be circumstances when it is not possible to meet all measurement and reporting requirements described in Chapter 4. Diverters can submit an Alternative Compliance Plan (ACP) if meeting all requirements is not possible due to any of the following acceptable reasons:

- It is not feasible
- It would be unreasonably expensive
- It would unreasonably affect public trust uses
- It would result in the waste or unreasonable use of water

Diverters must confirm and explain why they are unable to meet all their requirements. Diverters using an ACP must still measure their diversions while meeting as many of the accuracy and frequency requirements described in Chapter 4 as possible. Diverters must submit their diversion data to the State Water Board each year as part of their Annual Report.

ACPs must be submitted to the [Water Rights Form and Survey Submittal Portal](#) and include the following information:

- The name and contact information for all participants
- The name and contact information for the person designated to represent all participants
- List each water right type and priority

- A detailed description of the area, including all points of diversion (both active and inactive), all methods of diversion, any conveyance systems, all beneficial uses of water, and all acreage served
- The assessor's parcel numbers and ownership within the area
- Measurement frequency
- Measurement methodology
- Topographic map(s) or aerial photo(s) that show the separate places of use authorized to be served by claimed water rights covered by the Plan and showing the acreage served
- An implementation schedule, including date-specific, objective milestones of implementation
- Budget for implementing and source(s) of financing for the ACP
- A list of any permits required for implementation, the agencies that will issue the permits, and expected dates for issuance
- A signed affirmation from diverters that they will adhere to the implementation schedule submitted in the ACP
- Explanation and documentation of how the ACP complies with the Regulation
- Explanation why strict compliance with the Regulation using a Measuring Device or Measurement Method is not feasible, would be unreasonably expensive, would unreasonably affect public trust uses, or would result in the waste or unreasonable use of water. Any claim that strict compliance is unreasonably expensive must include a cost analysis, but do not include any personal banking details or other financially sensitive documents

A Qualified Individual must certify that any ACP satisfies the Board's measurement and reporting requirements. Diverters must renew their ACP at least every five years.

6 Required Accuracy

Diversion measurements must meet specific accuracy requirements depending on the date you installed your Measuring Device, the size of your direct diversion or storage facility, diversion type, and if your Measuring Device’s accuracy was laboratory certified. Required accuracy is detailed in Table 3 below. Accuracy requirements are based on the sum of a diverter’s water rights if they use the same point of diversion or serve the same place of use. If a Measuring Device is not laboratory certified, the Regulation requires a Qualified Individual must certify the accuracy; please refer to Chapter 7 for more information.

Table 3: Measurement Accuracy Requirements

| Diversion Type | Volume Threshold | Required Accuracy ^(a) |
|--|-----------------------|----------------------------------|
| Direct Diversion: Requirements are based on maximum allowable annual diversion amounts | 100 acre-feet or more | ± 10% |
| | 10 to 99 acre-feet | ± 15% |
| Diversion to Storage: Requirements are based on storage capacity | 200 acre-feet or more | ± 10% |
| | 10 to 199 acre-feet | ± 15% |

(a) Accuracy requirements are shown as percent differences by volume. For devices installed before January 1, 2016, the required accuracy is ± 15 percent for all diversion types and sizes. Laboratory-certified devices must be accurate to within ± 5 percent by volume.

6.1 Devices Installed on or Before January 1, 2016

If you installed your Measuring Device on or before January 1, 2016, it must be certified to be accurate to within ± 15 percent by volume. You must periodically test your Device to verify its accuracy.

6.2 Devices Installed or Replaced After January 1, 2016

If you installed or replaced your Measuring Device after January 1, 2016, your accuracy requirements are based on whether the Device is used to measure the diversion or whether it is used to measure stored water.

6.2.1 Devices Used to Measure Diversion

If the Measuring Device is used to measure the diversion of water, it must meet the following accuracy criteria:

- ± 5 percent by volume if the Device is laboratory-certified
- ±10 percent by volume for water rights of 100 acre-feet or more
- ±15 percent by volume for water rights of at least 10 acre-feet but less than 100 acre-feet

If your Device's accuracy was not laboratory-certified, you must periodically test your Device to confirm its accuracy.

6.2.2 Devices Used to Measure Stored Water

If the Measuring Device is used to measure water stored in a reservoir or pond, it must meet the following accuracy requirements:

- ± 10 percent by volume for storage facilities of 200 acre-feet or more
- ± 15 percent by volume for storage facilities of more than 10 acre-feet

If your Device's accuracy was not laboratory-certified, you must periodically test your Device to confirm its accuracy.

6.3 Additional Telemetry Requirements for Larger Diverters

Large diverters also have telemetry obligations that require diversion data to be published on a public website. The website must be updated at least weekly.

You are subject to telemetry requirements if you meet any of the following criteria:

- Divert more than 10,000 acre-feet per year under a water right or combination of water rights using the same point of diversion
- Own or operate a reservoir with a storage capacity of 10,000 acre-feet or more
- Divert 30 cubic feet per second or more at any time between June 1 and September 30. This applies to both a single water right or a combination of water rights sharing a point of diversion
- Divert more than 20 percent of the historical mean monthly stream flow between June 1 and September 30 and any of the following four conditions apply*:
 - Threatened, endangered, or fully protected fish species are present or have historically been present
 - The diversion is made from a stream that is part of the Board's North Coast Instream Flow Policy area
 - The diversion is made from the Deer Creek, Mill Creek, or Antelope Creek watersheds of the Sacramento River watershed
 - The diversion is made from the Mark West Creek, Green Valley Creek, Mill Creek, or Dutch Bill Creek watersheds of the Russian River watershed

* The percentage of historical mean monthly stream flow applies to both a single water right or a combination of water rights sharing the same point of diversion. Historical mean monthly stream flow is calculated from stream gauge data that are publicly available records maintained by the U.S. Geological Survey, the California Department of Water Resources, the U.S. Army Corps of Engineers, or the State Water Board.

7 Qualified Individual

Diverter must use a Qualified Individual for part of the measurement process because measuring water diversions can be complex and require technical expertise. The term “Qualified Individual” has a specific definition in the context of this Regulation. They are responsible for overseeing or performing some of the more technically complex tasks related to measuring water diversions. This chapter explains the role of a Qualified Individual, how to become a Qualified Individual, and what parts of the measurement process require a Qualified Individual.

7.1 Role of a Qualified Individual

A Qualified Individual’s role varies if using a Measuring Device, Measurement Method, or Alternative Compliance Plan. Table 4 outlines which parts of the measurement process require a Qualified Individual.

Table 4: Role of Qualified Individual

| A Qualified Individual Is Required to... | Measuring Device | Measurement Method | Alternative Compliance |
|---|------------------|--------------------|------------------------|
| Install Measuring Device | ✓ | | |
| Calibrate and certify accuracy ^(a) | ✓ | ✓ | |
| Field test ^(b) | ✓ | ✓ | |
| Perform field inspection and analysis | ✓ | | |
| Approve conversion method of measured values to diverted volume | ✓ | | |
| Prepare Measurement Method form | | ✓ | |
| Certify Alternative Compliance Plan meets requirements (may include any of the above tasks) | | | ✓ |

(a) Calibration must be done upon initial installation of a Measuring Device and at least every 5 years after. Accuracy may be certified and documented by laboratory certification instead of by a Qualified Individual for Measuring Devices installed or replaced after January 1, 2016.

(b) A Qualified Individual must field test and re-analyze that the Measurement Method meets the requirements upon initial installation and at least every 5 years after.

7.1.1 Role of a Qualified Individual for Measuring Devices

Diverter with a Measuring Device at each point of diversion must have a Qualified Individual:

- Install the Measuring Device

- Calibrate the Measuring Device at least once every five years, or more often if necessary
- Approve a method to convert the measured value to a volume
- Certify that the Measuring Device meets the accuracy requirements described in Chapter 6, unless the Device is laboratory-certified prior to installation
- Oversee field testing, field-inspection, and analysis to demonstrate that the device meets the accuracy requirements based on the size of the diversion, as described in Chapter 6

7.1.2 Role of a Qualified Individual for Measurement Methods

Diverter who use a Measurement Method must have a Qualified Individual:

- Prepare the Measurement Method form
- Certify that the Measurement Method meets the accuracy requirements based on the size of the diversion, as described in Chapter 6
- Field test and analyze the Measurement Method upon implementation and at least every five years afterwards

7.1.3 Role of a Qualified Individual for Alternative Compliance Plans

An ACP must have a Qualified Individual certify that it meets the measurement and reporting requirements of the Regulation to the extent possible.

7.2 Who Can Be a Qualified Individual?

The size of your diversion determines who can be a Qualified Individual, as summarized in Table 5 and described in the sections below.

Table 5: Qualified Individual Requirements

| Authorized Diversion Amount | Eligible Qualified Individuals |
|--|--|
| Less than 100 acre-feet per year | <ul style="list-style-type: none"> • Anyone trained and experienced in water measurement and reporting (a training class is highly recommended but not required) |
| 100 acre-feet per year or more | <ul style="list-style-type: none"> • A California-registered Professional Engineer or a person under their supervision, or • A California-licensed contractor for C-57 well drilling or C-61/D-21 Limited Specialty: Machinery and Pumps, or • Any diverter who has completed a class on measurement devices and methods offered through the University of California Cooperative Extension |
| Federal right/claim to divert 100 acre-feet per year or more | <ul style="list-style-type: none"> • Hydrologist or Professional Engineer experienced and trained in water measurement |

7.2.1 Annual Diversions Under 100 Acre-Feet

For annual diversions under 100 acre-feet, a Qualified Individual can be any person trained and experienced in water measurement and reporting, including the diverter or the diverter's agent. The State Water Board highly recommends completing the training course on water measurement offered by the University of California Cooperative Extension, but the course is not required.

7.2.2 Annual Diversions of 100 Acre-Feet or More

For annual diversions of 100 acre-feet or more, a Qualified Individual must be one of the following:

- A California-registered Professional Engineer or a person working under their supervision
- A California licensed contractor for C-57 well drilling
- A California licensed contractor for C-61: D-21 Limited Specialty: Machinery and Pumps
- Any water right holder, diverter, tenant, or their employee who has completed a training course on water measurement offered by the University of California Cooperative Extension

7.2.3 Federal Agency Water Rights

For water rights and claims held by the federal government, a Qualified Individual must be a hydrologist or professional engineer experienced and trained in water measurement who is employed by the federal agency in that capacity.

8 Reporting Measurement Data

Diverters must submit their measurement data as an attachment to their Annual Reports. Diversion data must be submitted in an electronic file that can be opened and read using Microsoft Excel or Microsoft Access. The most common file types for measurement data are comma-separated value (.csv) files and Microsoft Excel spreadsheets (.xls and .xlsx). Additional guidance on how to format datafiles is in Appendix A, and several optional datafile templates are available on the [Water Measurement and Reporting Regulation website](#). Refer to the section below for reporting requirements based on whether you use a Measuring Device, Measurement Method, or ACP.

8.1 Measuring Device

Diverters using a Measuring Device must register their Device by completing a Report of Water Measuring Device as part of their Annual Report. This form only needs to be completed once for each Measuring Device, and updated in later years only if information changes.

The form can be found within the Annual Reports in the Water Board's [Report Management System \(RMS\)](#), under the section titled *“Summary of Measuring Devices/Measurement Methods Associated with the Diversion or Storage of Water”* (see Figure 1). Select the *“Provide measurement device information/certification”* button and complete the form that pops up. If your Measuring Device does not record the volume of water diverted, use the *“Attached Documents”* field to upload the method used to convert the measured value to a volume. Once you complete the form, a unique Measuring Device ID will automatically be generated for that specific Device. Measuring Devices that are shared with other water rights or claims can be added by selecting the button to *“Import a measurement device from a previously submitted report”*.

To submit data from a Measuring Device, select the appropriate Measuring Device ID and then click the *“Manage Data Files”* button (see Figure 2). You will then be prompted to upload your datafile for that Measuring Device.

SUPPLEMENTAL STATEMENT OF WATER DIVERSION AND USE FOR 2020

Water Right ID

Diverter of Record

WATER DIVERSION MEASUREMENT

[Video Tutorial - Water Diversion Measurement](#)

- 6a. I am required to measure as of the date this report is submitted
 I am not required to measure as of the date this report is submitted
[Information on measurement requirements](#)

SUMMARY OF MEASURING DEVICES / MEASUREMENT METHODS ASSOCIATED WITH THE DIVERSION OR STORAGE OF WATER

- 6b. I measure my diversion and/or storage of water
 My diversion is measured by a watermaster assigned to the following service area:

 I do not measure my diversion and/or storage of water
- 6c. An alternative compliance plan was submitted to the Division of Water Rights on: (mm/dd/yyyy, example: 02/07/2009)
- 6d. A request for additional time was submitted to the Division of Water Rights on: (mm/dd/yyyy, example: 02/07/2009)

6e. Manage Measuring Devices and Upload Measurement Data

| Select | Measuring Device ID | Nickname | This Device/Method was used to measure water during the current reporting period | Submitted Data File(s) | Upload/Manage Data Files |
|--|---------------------|----------|--|------------------------|--------------------------|
| No measuring devices or measurement methods. | | | | | |

Add new or remove measurement device(s) to your report by selecting the appropriate action below. The first option allows you to enter one device at a time. If you have multiple devices for this water right, you can return to this page and add additional devices. The second option allows you to import a device that you have previously entered if you use the same device for multiple water rights. The last option allows you to remove any added devices from your report. After you have added your measurement device(s), click the corresponding "Manage Data Files" to upload measurement data files. If you did not use a measuring device, select the "No" button.



Figure 1: The Report of Measuring Device form can be found in RMS when completing your Annual Report. This process can also be used for Measurement Methods.

WATER DIVERSION MEASUREMENT

[Video Tutorial - Water Diversion Measurement](#)

I am required to measure as of the date this report is submitted
 I am not required to measure as of the date this report is submitted
[Information on measurement requirements](#)

SUMMARY OF MEASURING DEVICES / MEASUREMENT METHODS ASSOCIATED WITH THE DIVERSION OR STORAGE OF WATER

I measure my diversion and/or storage of water
 My diversion is measured by a watermaster assigned to the following service area:

 I do not measure my diversion and/or storage of water

An alternative compliance plan was submitted to the Division (mm/dd/yyyy, example: 02/07/2009) of Water Rights on:

A request for additional time was submitted to the Division of (mm/dd/yyyy, example: 02/07/2009) Water Rights on:

Manage Measuring Devices and Upload Measurement Data

| Select | Measuring Device ID | Nickname | This Device/Method was used to measure water during the current reporting period | Submitted Data File(s) | Upload/Manage Data Files |
|-------------------------------------|---------------------|----------|--|------------------------|--|
| <input checked="" type="checkbox"/> | M_____ | | <input checked="" type="radio"/> Yes <input type="radio"/> No | | <input type="button" value="Manage Data Files"/> |

Add new or remove measurement device(s) to your report by selecting the appropriate action below. The first option allows you to enter one device at a time. If you have multiple devices for this water right, you can return to this page and add additional devices. The second option allows you to import a device that you have previously entered if you use the same device for multiple water rights. The last option allows you to remove any added devices from your report. After you have added your measurement device(s), click the corresponding "Manage Data Files" to upload measurement data files. If you did not use a measuring device, select the "No" button.

Figure 2: After completing a Report of Measuring Device, you may upload datafiles associated with each Measuring Device ID.

8.2 Measurement Method

Diverters using a Measurement Method should also complete a Report of Measuring Device in [RMS](#), as described above, to register their Measurement Method and upload any supporting documents. This will generate a Measuring Device ID that can be used to upload diversion datafiles using the "Manage Data Files" button. Each Measurement Method only needs to be registered once in RMS. Diverters should have already submitted a Measurement Method form in the [Water Rights Form and Survey Submittal Portal](#) before implementing the Measurement Method.

If diverters do not register their Measurement Methods with the Report of Measuring Device in RMS (and therefore do not have an associated Measuring Device ID), they must submit their diversion data as an attachment to their Annual Report. Under the

section titled “Additional Information”, select the “Choose File” button to select your datafile (see Figure 3). Datafiles submitted as attachments in the “Additional Information” section should follow the naming convention of *water year_datafile*. For example, an Excel datafile submitted for water year 2023 would be named “2023_datafile.xlsx”. If uploading multiple datafiles for the same Annual Report, add a number or other descriptor to the end of the file name to distinguish it: e.g., *2023_datafile_2.xlsx*. Any documents other than datafiles uploaded in the “Additional Information” section should have names and descriptions that describe the documents being uploaded.

ADDITIONAL INFORMATION

Please add additional remarks:

(Note: Input is limited to 4000 characters.)

Attach a File

Maximum file size: 75 MB
Preferred file formats: Microsoft Office Excel, Microsoft Office Word, JPEG, PDF or CSV

File Name

Description

Attached Files

| Select | File Name | Description | Size |
|----------------|-----------|-------------|------|
| No Attachments | | | |

Figure 3: Datafiles associated with Measurement Methods or Alternative Compliance Plans may be uploaded through the “Additional Information” section of the Annual Report.

8.3 Alternative Compliance Plan

Diverters using an Alternative Compliance Plan must submit their diversion data to the Board as an attachment to their Annual Report.

Select the “Choose File” button under the section titled “Additional Information” to upload a datafile (See Figure 3). Your datafile should follow the naming convention of *water year_datafile*. For example, an Excel datafile submitted for water year 2023 would be named “2023_datafile.xlsx”. If attaching multiple datafiles for the same water right,

add a number, letter, or other descriptor to the end of the file name to distinguish it, e.g., *2023_datafile_2.xlsx*. Any documents other than datafiles uploaded in the “*Additional Information*” section should have names and descriptions that describe those documents.

Appendix A: Measurement Datafile Considerations

A.1 Datafile Templates

Datafile templates are available to help diverters report their measurement data. These templates are *optional* and meant to assist diverters in submitting their measurement data. The State Water Board highly recommends using the available templates to prepare your datafiles, though alternative datafile formats are allowed if they meet the criteria specified in the Regulation. However, templates provided by the Board demonstrate best practices for formatting and can be a good reference even if you choose not to use them.

Please visit the [Water Measurement and Reporting Regulation website](#) to download the appropriate template for your diversion(s). For instructions on how to use the templates, refer to the Datafile Template Manual, which is also available on the website.

A.2 Time Stamp

The date and time of measurement are required for every measurement value. Many Measuring Devices or dataloggers may automatically record the date and time along with the measurement value. If not recorded by a datalogger, the time reported should be the time the measurement value was manually recorded.

A.3 Daylight Savings Time (*Future Guidance to Come*)

A.4 Measured Values: Raw Data vs. QA/QC'd Values vs. Calculations

Datafiles should contain raw measurement data (i.e., unaltered output from a Measuring Device or Measurement Method) as well as:

- A separate column of QA/QC'd (corrected) values correcting for known or suspected errors
- Data flags identifying known or suspected errors (as applicable); and
- The volume of water diverted under that specific water right or claim during that specific timestep. Please use a QA/QC'd value instead of a raw value to calculate volume if the raw value is incorrect.

If any calculations or conversion methods are required to convert the measured value into the volume of water diverted, the method(s) of conversion must be approved by a Qualified Individual and uploaded in the Report of Measuring Device under the “*Attached Documents*” section. Any conversion methods must clearly describe, using formulas and/or narrative text, how the volume was determined and include any necessary supplementary documents (e.g., rating tables).

A.5 Reporting Measured Data for Multiple Rights

Each datafile must disaggregate the volume of water diverted per water right or claim so that the volume of water reported in each datafile represents only the amount of water diverted under a single water right or claim. If a Measuring Device is shared among multiple diverters or among multiple water rights/claims all held by a single diverter, a Measurement Method or other protocol must be used to determine the amount of water diverted under each right or claim.

A.6 Recording Anomalies

If there was a period when a Measuring Device was not functioning properly, or any other measurement anomalies or errors were known or suspected to have occurred, the affected data should be flagged as missing or incorrect. If possible, please provide corrected or QA/QC'd values in a separate column than the raw values and use these corrected values when calculating the volume of water diverted.

A.7 Datafile Best Practices

Submit all measurement data as a datafile attachment through your Annual Water Diversion and Use Report. Optional datafile templates are available for your convenience on the Board's [Water Measurement Regulation webpage](#). Use of these templates is highly recommended, but not required; you may use other datafile formats that better suit your individual needs.

For information on how to submit telemetered data, refer to the [Telemetry Requirements webpage](#).

In general, datafiles should contain the following:

- A. File type that can be opened using either Microsoft Excel or Microsoft Access (common file types include .xls, .xlsx, .csv, .txt, .dat)
- B. Descriptive column headings **in the first row of the datafile**
- C. Use only one spreadsheet "tab" with only one data table per datafile (you may submit multiple datafiles with your Annual Water Diversion and Use Report)
- D. Use only one datafile per measuring device per water right/claim
- E. Date and time of measurement
- F. Measured value (the raw/unaltered data output from your Measuring Device or Measurement Method)
- G. A separate column of QA/QC'd values correcting for known or suspected errors
- H. Comments or data flags identifying any known or suspected errors
- I. Volume of water diverted under the water right at each time stamp and measured value (any calculation or conversion protocols should be attached separately to your Annual Report and not included within your datafile)
- J. Units written out in their entirety (i.e., not abbreviated)
 - Any standard units are acceptable. Common examples include acre-feet or gallons (for volume), cubic feet per second or gallons per day (for flow)

rate), feet per second (for water velocity), and feet or meters (for water elevation).

Figure 4 below shows an example of a measurement datafile following datafile best practices.

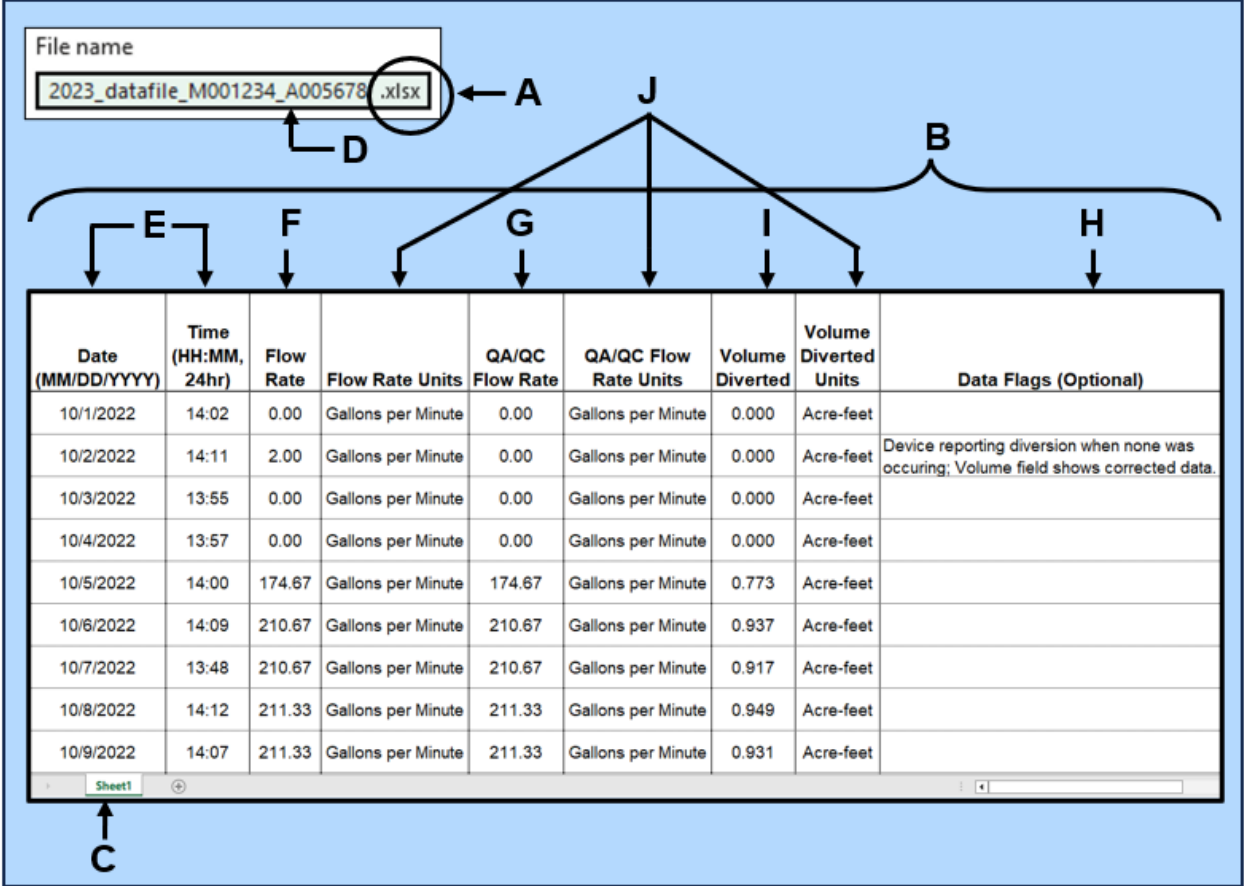


Figure 4: Measurement Datafile Best Practices

Appendix B: Common Scenarios

B.1 Zero Diversions

A datafile is required for all water rights described in Chapter 3, even if no diversions occurred during the reporting period. Datafiles are evidence that the diversion is still being monitored at the correct frequency and that zero acre-feet/gallons were diverted. The State Water Board understands the challenges of reporting when water is not being diverted, and is currently evaluating alternative ways of reporting zero diversions.

B.2 Non-Consumptive Diversions (*Future Guidance to Come*)

B.2.1 **Direct Diversions (*Future Guidance to Come*)**

B.2.2 **Diversions to Storage (*Future Guidance to Come*)**

B.2.3 **Abandoned Flows (*Future Guidance to Come*)**

B.3 30-Day Storage Rule (*Future Guidance to Come*)

B.4 Overlapping Water Supply Contracts (*Future Guidance to Come*)

B.5 Points of Rediversion (*Future Guidance to Come*)