

Summary

Alternative Compliance Plan for Water Right (S002340)

You completed the survey on 12/05/2017 10:02:19

[Return to Dashboard](#)

INTRODUCTION

See [Information and Instruction Sheet](#) for assistance in completing this form. The form shall be completed by the water right owner, their agent, or for an Alternative Compliance Plan filed for a group, the designated contact. The vast majority of water right owners should be able to meet the measurement requirements. Participation in an Alternative Compliance Plan does not relieve the participant of the independent obligation to file an online annual Report of Water Diversion and Use.

All sections of the form below must be completed. An incomplete form does not excuse non-compliance with the regulation or release you from the obligation to measure. The Alternative Compliance Plan may not be used to avoid measurement and monitoring, but should be used to describe an alternative method of measurement and monitoring which will provide the information required by the Regulation. Estimated diversion records may not meet the Regulation's accuracy requirements without supporting documentation.

Note: The large text boxes in the form have a character limit of 2,000 characters. Responses requiring more than 2,000 characters for a particular text box should be submitted as an attachment in Section I of this form. Additional information should be attached in Section I.

SECTION A - WATER RIGHT OWNER INFORMATION

This section of the form describes the information that is required for each water right or claimed right covered under the Alternative Compliance Plan.

In Section I, attach a table (in Microsoft Excel .xlsx, comma-separated .csv, or tab-separated .txt format) containing the Application or Statement Number for each water right covered under the Alternative Compliance Plan. For your water right, answer the questions below.

(1) Owner Name(s) *

Merrill J. Bates

(2) Email Address *

[REDACTED]

(3) Phone Number *

[REDACTED]

(4) Mailing Address Line 1 *

[REDACTED]

(5) Mailing Address Line 2:

[REDACTED]

(6) City *

Porterville

(7) State *

CA

(8) Zip Code *

93257

(9) Is the Water Right Owner also the Primary Contact? *

☐ Yes

☒ No

On questions 10 through 13, please tell us what you understand the requirements of the regulation to be for this water right to be.

(9) Installation Deadline *

☐ January 1, 2017

- ☐ July 1, 2017
- ☒ January 1, 2018

(10) Measurement Accuracy *

- ☒ 10%
- ☐ 15%
- ☐ Other, as specified in the Alternative Compliance Plan (if submitted)

(11) Required Monitoring Frequency *

- ☒ Hourly
- ☐ Daily
- ☐ Weekly
- ☐ Monthly

(12) Qualifications of the Individual Installing/Certifying *

- ☐ A California Licensed Professional Engineer (PE), a person working under the supervision of a California PE, a California-licensed contractor authorized by the State License Board for C- 57 well drilling or C- 61 Limited Specialty/D-21 Machinery and Pumps, or a Hydrologist or Engineer employed by a Federal Agency
- ☒ A person trained and experienced in water measurement (for diversions of less than 100 acre-feet per year - no specific training is required; the person using any equipment and reporting the information must know how to use the equipment and submit correct information)

SECTION B - INFORMATION ON PRIMARY CONTACT

This section of the form includes the contact information for the primary contact associated with the Alternative Compliance Plan.

(1) Name(s): *

Daniel Bates

(2) Phone Number: *

[REDACTED]

(3) Email Address: *

[REDACTED]

(4) Mailing Address Line 1: *

[REDACTED]

(5) Mailing Address Line 2:

[REDACTED]

(6) City: *

Porterville

(7) State: *

CA

(8) Zip Code: *

93257

(8) The Alternative Compliance Plan Primary Contact is a(n): *

- ☐ Water Right Owner
- ☐ Agent

SECTION C - INFORMATION ON QUALIFIED INDIVIDUAL

This section of the form includes the contact information for the Qualified Individual certifying the Alternative Compliance Plan.

(1) Name(s): *	<input type="text" value="Daniel Bates"/>
(2) Phone Number: *	<input type="text" value="REDACTED"/>
(3) Email Address: *	<input type="text" value="REDACTED"/>
(4) Mailing Address Line 1: *	<input type="text" value="REDACTED"/>
(5) Mailing Address Line 2: *	<input type="text" value="REDACTED"/>
(6) City: *	<input type="text" value="Porterville"/>
(7) State: *	<input type="text" value="CA"/>
(8) Zip Code: *	<input type="text" value="93257"/>
(9) The qualifications of the individual certifying the Alternative Compliance Plan are: *	<div><p><input type="radio"/> California Licensed Professional Engineer (PE)</p><p><input type="radio"/> Person working under the supervision of a California Professional Engineer</p><p><input type="radio"/> California-licensed contractor authorized by the State License Board for C- 57 well drilling or C-61 Limited Specialty/D-21 Machinery and Pumps</p><p><input type="radio"/> Hydrologist or Engineer employed by a Federal Agency</p><p><input checked="" type="radio"/> Person trained and experienced in water measurement (for diversions of less than 100 acre-feet per year - no specific training is required; the person using any equipment and reporting the information must know how to use the equipment and submit correct information)</p></div>
(10) Qualifying Individual's PE or Contractor license number, if applicable:	<input type="text"/>

SECTION D - REQUEST FOR ALTERNATIVE COMPLIANCE

Water right holders who divert more than 10 acre-feet of water per year are required to measure the water they divert. A diverter may choose any measuring device, or combination of devices, that meet the measurement and monitoring requirements of the regulation. The measurement requirements are summarized on the [Reporting and Measurement Webpage](#) .

For each box checked in questions 1a through 3 below, submit a detailed explanation and attach substantiating documentation.

(1a) Diverter is seeking alternative compliance from the requirement(s) checked below. *

- ☒ Measuring Device Location
- ☐ Required Accuracy
- ☒ Certification of Accuracy
- ☒ Installation and Maintenance
- ☒ Monitoring Frequency
- ☐ Telemetry
- ☒ Other (describe in Section 1b)

(1b) Provide additional information for each of the reasons selected in question 1a: *

Measuring Device Location: We do not own the property where the diversion and head gate are located. The owner is hostile. Installation and Maintenance: We use the water diverted for both irrigation and hydroelectric power production. There are 21 irrigation outlets or irrigation lines that come off of the conduit and the penstock for the power plant. I can calculate the amount of water which passes through my turbine to generate electricity, based on the kilowatt hours of electricity produced. I can calculate the amount of water used for irrigation by taking the power plant production for a set time period and noting how much power is produced when not irrigating, then run the individual irrigation lines for a set period of time and note the reduction in power production for each field irrigated for a set period of time. I keep track of the number of hours we run each sprinkler line and compute the amount of water used for irrigation based on the formula derived using the reduction in kilowatts hours produced. I keep daily records of the kilowatts produced by our power plant and we keep records of the days and number of hours we irrigate the various fields. This gives us calculated totals for the water we divert and either consume or discharge back to the stream. I have been using this calculated method for a number of years to gage our water diversion. I am requesting that I be able to keep the daily and monthly totals to calculate the water used. There is no way for us to differentiate the water used for irrigation vs. power production, even if we put in a meter at our head gate, or where the conduit first enters our property, or at the redistribution/forebay pond. Since there is no way for us to differentiate the water used for irrigation vs. power production without using this same method of calculation we have been using for the past few years, we are requesting permission to keep using this same method. I am requesting alternative compliance from the Certificate of Accuracy. Our power plant was put into production 28 years ago. I have 4 nozzles that feed the Pelton Wheel, one needle nozzle and three butterfly valves. Per the manufacturer, the maximum water discharge is 20.5 CFS with all 4 nozzles open. The needle valve discharges about 5.95 CFS when fully open, and produces about 115 KW. Each of the butterfly valves discharge about 4.85 cfs when open and produces about 95 kw per hour. I can calculate the flow based on the kilowatts produced. I can calculate the daily flows based on the total kilowatts produced that day. Monitoring Frequency: I am requesting to do a monthly total for water diverted based on the total kilowatts produced for the month. I can calculate the maximum diversion during the month by considering the daily kilowatt totals and monthly totals and adding in the water used for irrigation, cattle use and yard use. We request that an engineer not be required to design the method of measurement, since we operate a hydro electric power plant and know how many kilowatts of electricity one cfs produces and can calculate the water used.

(5000 character max.)

?

(2a) Alternative compliance is being pursued because strict compliance with one or more of the requirements for measuring and monitoring (check all that apply): *

- ☒ Is not feasible.
- ☐ Would unreasonably affect public trust resources.*
- ☒ Is unreasonably expensive.**
- ☐ Would result in the waste or unreasonable use of water.

* Including fish, wildlife, recreation, navigation, and aesthetic values.

** Plans claiming that strict compliance is unreasonably expensive shall be accompanied by an attached supporting cost analysis. The cost analysis should compare the cost of the proposed alternate measuring devices to the cost of the measurement devices required by the Regulation. All Plans shall include a budget and shall identify sources of financing. The budget should provide sufficient detail to show the cost of the proposed alternate measuring devices, the cost of obtaining any necessary permits, and the cost of installation.

(2b) Provide additional information for each justification selected in question 2a: *

It is not feasible to accurately meter the water diverted because of the wide swings in flow rates between wet winter months, when we divert up to 21 CFS and dry summers when we divert as little as 0.5 CFS strictly for minimal irrigation. I have found that the technology and equipment available has not caught up to the metering requirements. If I use a probe in the conduit or

penstock that can measure the higher flows accurately, the lower flows are not measured accurately. If we were required to have a meter on each irrigation outlet or line coming off the conduit and penstock the cost would be prohibitive. We do not own the property where our head gate is located and the owner is hostile. (He sued us when we were putting in the power plant) It is not feasible to meter the water used for irrigation because there are 21 irrigation outlets along the conduit and penstock, in multiple locations. Even if we put in a meter to measure the total amount being diverted, that would not give us the amount used for irrigation separate from the amount used for power production. I would have to calculate the amount used for power production using the same method I now use and subtract that from the total measured by a meter and allot the remainder to irrigation.

(5000 character max.)

?

(3a) Alternative compliance is requested under the following categories (check all that apply): *

- ☒ Highly variable flow rate at point of diversion.
- ☐ Point of diversion is inaccessible a portion of the year due to weather or other on-site conditions.
- ☐ Point of diversion is under tidal influence
- ☐ There is an existing measuring device or measurement method in use.
- ☐ Water is corrosive to measurement equipment.
- ☐ The diversion is measured by another entity (identify entity and method of measurement used).
- ☒ Other (provide complete description in section 3b)

(3b) Provide additional information for each of the categories selected in question 3a: *

Highly variable flow rate at point of diversion: It is not feasible to accurately meter the water diverted because of the wide swings in flow rates between wet winter months, when we divert up to 21 CFS and dry summers when we divert as little as 0.5 CFS, I have found that the technology and equipment available has not caught up to the metering requirements. If I use a probe in the conduit or penstock that can measure the higher flows accurately, the lower flows are not measured properly. It is not feasible to meter the water used for irrigation because the 21 irrigation lines/outlets come off the same line that is used as a penstock. Even if we put in a meter to measure the total amount being diverted, that would not give us the amount used for irrigation separate from the amount used for power production.

(5000 character max.)

?

(4) Alternative Compliance Plans shall include alternative, objective measurement and performance standards that achieve the closest attainable compliance. Describe the measurement or alternative to measurement that will be used at each point of diversion in the plan to achieve closest attainable compliance. *

How I calculate the water diverted. To calculate the water diverted through my power plant and returned to the stream: My power plant average produces 20 kilowatt hours of electricity per 1 cfs of water, or 14,400 kilowatt hours in 30 days. 1 cfs = 59.5 acre feet per 30 day month. 20 kwh x 24 hours x 30 days = 14,400 kwh per 1 cfs or per 59.5 acre feet. I take the total kwh produced for the month, divide by 14,400 to get the cfs needed to generate that amount of power and then I multiply by 59.5 to get the acre feet for the month. I adjust for inefficiencies in higher water flows when the turbine is less efficient and there are more friction losses from the increased water flow. To calculate the water consumed for irrigation, I have developed a formula by running my power plant for a set number of hours during a given day to get the average kilowatts produced per hour. I then run the various sprinkler lines for a set number of hours with the power plant operating with the same amount of water flow coming in and note the drop in Kilowatts produced. I then calculated the amount of water consumed for irrigating the various sprinkler lines per hour. I keep a log of the hours I run the sprinkler lines and calculate the amount of water used for irrigation. I estimate the small amount used for yard water, cattle and ponds.. I add the calculated water used for power production and the calculated water used for irrigation and the estimated water used for yard water, cattle and ponds to get the total water diverted.

(5000 character max.)

SECTION E - AREA COVERED BY THE ALTERNATIVE COMPLIANCE PLAN

Summarize the following for each water right covered by the Alternative Compliance Plan. In Section I, attach maps, aerial photographs, or other renderings showing the area covered by the Alternative Compliance Plan and delineating the acreage of each place of use served. For the area covered by the Alternative Compliance Plan, include a list of assessor's parcel numbers and the current owner of each parcel.

(1) Provide a general description of the area covered by the Alternative Compliance Plan. *

APN 344-190-004-000 5 acres APN 325-210-065-000 158.53 acres The above two parcels are owned by The Merrill Bates and Mary Lou Bates Trust dated April 18, 2006. Merrill Bates and Daniel Bates are Co-Trustees 344-120-001-000 78.95 acres 344-120-008-000 0.8 acres The above two parcels are owned by Bypass Trust under The Merrill Bates and Mary Lou Bates Trust dated April 18, 2006. Merrill Bates and Daniel Bates are Co-Trustees

(5000 character max.)

(2) Describe all diversion and conveyance works covered by the Alternative Compliance Plan. *

Diversion is approximately 4' high by 25' in width crossing Deer Creek. It is located in the NE1/4 NW1/4 Sec 1 T 24S R30E of the California Hot Springs, California Topographical map on a right of way on another owners property. The Conduit is 24" ID concrete 2200' in length which terminates at an open section of ditch that is about 15' wide x 300' long filled with cattail tules that acts as a settling pond before the water enters the redistribution/irrigation pond that also acts as the forebay for the hydro-electric power plant. The conduit begins on a parcel and passes through two other parcels owned by others before it enters the Bates property. There are 13 irrigation outlets along the length of the conduit as it passes along the edge of parcel 344-120-008 and irrigates parcel 344-120-001 and carries water to the house and yard on parcel 344-190-004-000. Penstock/ Irrigation distribution line: From the redistribution pond there is a 25-3/4" i.d. steel pipe of 3025' length. There are 8 irrigation line connections that come off of the Penstock/Distribution line that water various fields and deliver water to the house and yards on parcels 325-210-065-000 and 344-190-004-000. The Penstock/distribution line terminates at the powerhouse located on the north side of Tyler Creek at the confluence of Deer Creek and Tyler Creek. The water from the power plant is returned to Deer Creek just past where Tyler Creek enters Deer Creek In the NW1/4 SE1/4 Sec 35 T23S R30E

(5000 character max.)

(3) Describe the type(s) of Beneficial Use(s). *

The water is used for irrigation, hydroelectric power production, household yard and garden water, water for approximately 100 head of cattle and fishing ponds. In emergency, the fire department will use the water for fire suppression by using a helicopter to dip out of one of our ponds or hooking to one of the two fire hydrants we have installed along Tyler Creek Drive with their fire engines.

(5000 character max.)

(4) Have you attached a list of assessor's parcel numbers and the current owner of each parcel covered by the Alternative Compliance Plan? (Attachments may be made under Section I of this form.) *

☒ Yes | ☐ No

SECTION F - MEASUREMENT AND MONITORING

(1) For each Point of Diversion listed in the Alternative Compliance Plan, describe how the water is measured. *

To calculate the water diverted through my power plant and returned to the stream: My power plant average produces 20 kilowatt hours of electricity per 1cfs of water, or 14,400 kilowatt hours in 30 days. 1 cfs = 59.5 acre feet per 30 day month. 20 kwh x 24 hours x 30 days = 14,400 kwh per 1 cfs or per 59.5 acre feet. I take the total kwh produced for the month, divide by 14,400 to get the cfs needed to generate that amount of power and then I multiply by 59.5 to get the acre feet for the month. I adjust for inefficiencies in higher water flows when we have more than 14.5 cfs available because the turbine is less efficient and there are more friction losses from the increased water flow through the penstock and in the turbine housing, therefore I make an adjustment to show that more water was diverted than would be shown by a strict numerical calculation. To calculate the water consumed for irrigation, I have developed a formula by running my power plant for a set number of hours during a given day to get the average kilowatts produced per hour. I then run the various sprinkler lines for a set number of hours with the power plant operating with the same amount of water flow coming in and note the drop in Kilowatts produced. I then calculated the amount of water consumed for irrigating the various sprinkler lines per hour. I keep a log of the hours I run the sprinkler lines and calculate the amount of water used for irrigation. I add in an estimated amount of water used for yard water I add the calculated water used for power production and the calculated water used for irrigation and yard water to get the total amount of

water diverted.

(5000 character max.)

(2) Identify the measurement accuracy associated with the measurement devices. *

10%

(5000 character max.)

(3) Describe how the accuracy of the Alternative Compliance Plan was calculated. *

My generator and turbine have a plaque attached that list 20.5 CFS as the water that passes through the turbine when all 4 nozzles are open. Just the needle nozzle fully open passes 5.95 cfs of water. When I have just the needle nozzle open, I produce about 115 kwh. Each of the three butterfly valves singly pass 4.85 cfs of water. When I have just one of the butterfly valves open, (any one of the three produce the same KW), I produce about 95 kwh. When there is enough water to produce more than about 280 -285 kw, the efficiencies drop off as additional water passes through the unit. When just the three butterfly valves are open, and there are 14.55 cfs going through the unit, we produce about 280-285 kwh, that is 19.4 kwh per 1cfs per hour. There is very little inefficiency at that level of power production. When the needle nozzle and butterfly #1 and #2 are fully open, we produce about 295 kw per hour with 15.65 cfs of water, that is 18.8 kwh per cfs per hour. When all four nozzles are fully open, passing 20.5 cfs, the efficiency drops and we produce only 350-350 kwh of electricity, (depending on the air and water temperatures), at that rate of flow, 1 cfs of water produces about 17.5 kw. In March of 2017 there was enough water to run my power plant with all 4 nozzles fully open for the whole month of 31 days, which is very unusual. My meter showed we produced 261,421 kwh of electricity. That is 8,433 kwh per day, or 351 kwh per hour. (SCE's meter per their statement showed we produced 257,776 kwh for the month. That is after transformer and line losses). To calculate the water that passed through my power plant, I would normally take the total of 257,776 kwh produced and divide by 14,400 which would indicate that we had only 17.9 cfs of water passing through our power plant and when multiplied by 59.5 would show that we had utilized 1,065 acre feet of water for electricity production that month. But because I know that the efficiency drops off dramatically when I produce more than 6,700 KWH per day and there is more than 14.5-15 cfs passing through the power plant, I need to make an adjustment for inefficiencies to the amount of water utilized. I know that I had 20.5 cfs passing through my power plant all month long because all 4 nozzles were fully open all month, which would mean that I utilized 1,220 acre feet of water for power production in March of 2017. That means that if I am at full production for any one day, I would need to add 14.5% to the total of calculated usage for inefficiencies in production. When I add 14.5% to the 1065 acre feet I calculated, I get a total of 1219.5 acre feet for the month. In June of 2017, my meter showed I produce 135,025 kwh of electricity which would require 558 acre feet of water. Only on June 1st did I produce close to full production, with 8241 kwh for the day. There were a total of 2 days where I produced more than 8,000 kwh, and an additional 5 days on which I produced more than 6800 kwh, so I will make an adjustment to amount of water utilized for power production by calculating that I actually utilized 10% more water for 7 days for an additional 13 acre feet of water for the month for a total use of 566 acre feet of water for power production. In 28 full years of production ending November 21, 2017 we have produced a cumulative total of 24,967,443 KWH of electricity. That is an average of 891,694 kwh per year, or 2,443 kwh per day. (We had calculated before we built that project that we would produce just over 1,000,000 kwh per year.) I do not have a total for the number of days we have run at full production of approximately 8400 kwh per day, for the 28 years we have been producing power, but it is a very small percentage of the time, as are the days I produced more than 6,700-6800 kwh, when I would need to make an adjustment in the water use formula. In the past 10 years, there have been a total of 418 days when I produced over 6800 kwh per day, or an average of 41.8 days per year where I would need to make a calculated adjustment to the total amount of water utilized by my power plant.

(5000 character max.)

SECTION G - IMPLEMENTATION SCHEDULE (IF NECESSARY)

(1) If applicable, describe the implementation schedule for the Alternative Compliance Plan, including objective milestones from date of filing through final implementation. Milestones should include date of completion for construction and testing, expected dates of issuance of required permits, and expected date for compliance with the California Environmental Quality Act:

The alternative method is already in use and has been for several years.

(5000 character max.)

An Alternative Compliance Plan shall be submitted and implemented by the established regulatory deadlines (see form instructions for additional information) unless a Request for Additional Time has been granted.

SECTION H - OTHER PERMITS

(1) Describe any other permits required to implement the Alternative Compliance Plan. Include information on the agency that will issue the permit, and the expected date of issuance.

No other permits are required

(5000 character max.)

SECTION I - ATTACHMENTS



(1) Attach documents that support the Alternative Compliance Plan.

Choose File No file selected

Upload

(Uploaded files:)

[Water Right Statement S002340- Property owned by Merrill Bates and Mary Lou Bates Trust, April 18,2006.pdf](#)

1%

(2) Provide a brief description of the attached documents.

Assessor's Maps of properties owned by The Merrill Bates and Mary Lou Bates Trust, Dated April 18, 2006 to which Water Right Statement S002340 is appurtenant.

(5000 character max.)

SECTION J - IMPORTANT INFORMATION AND SIGNATURES

Each participant in an Alternative Compliance Plan (Plan) must sign this form or an "opt-in" form that must be retained by the Plan manager. Attach a listing of participants, as needed, in Microsoft Excel .xlsx, comma-separated .csv, or tab-separated .txt format. By signing this form or the Plan's "opt-in" form, each Plan participant acknowledges that the Plan will be timely implemented and that the measurement of diversions will substantially comply with the Measurement Regulation. Further, each Plan participant acknowledges that the water rights covered by the Plan will not be exercised outside the scope of the Plan. Each Plan participant is responsible for promptly informing the Division of Water Rights or Delta Watermaster, as appropriate, if the participant withdraws from the Plan. The Plan manager is responsible for promptly informing the Division of Water Rights or the Delta Watermaster, as appropriate, if the Plan is modified or abandoned or if the Implementation Schedule is adjusted.

I hereby certify that the information in this Alternative Compliance Plan is true to the best of my knowledge and belief and that the Alternative Compliance Plan is in compliance with the requirements of Title 23, Division 3, Chapter 2.8, Section 931 through 938 of the California Code of Regulations. *

☒ Yes | ☐ No

Printed Name *

Daniel M. Bates

Division of Water Rights and Delta Watermaster staff may or may not evaluate the contents of an Alternative Compliance Plan at the time of receipt. Staff will initially determine if all the information has been filled out, and accept the Alternative Compliance Plan as complete or return it as incomplete. An Alternative Compliance Plan may be reviewed for compliance purposes at any time or as part of a systematic audit.