

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

In the Matter of the Complaint)
by)
CALIFORNIA TROUT, INC.)
Against)
WALKER RIVER IRRIGATION)
DISTRICT)
License 9407 (Application 1389),)
Bridgeport Reservoir.)

ORDER: WR 90-18
SOURCE: East Walker River
COUNTY: Mono

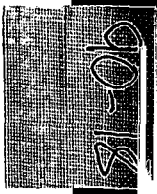
ORDER AMENDING LICENSE

BY THE BOARD:

1.0 INTRODUCTION

1.1 Scope of this Order

This Order sets forth the Board's findings, conclusions and orders arising from a proceeding on a water right entitlement held by the Walker River Irrigation District (hereinafter, the District). The entitlement is License 9407, issued on Application 1389. This license evidences and confirms a water right associated with Bridgeport Reservoir on East Walker River in Mono County, California.

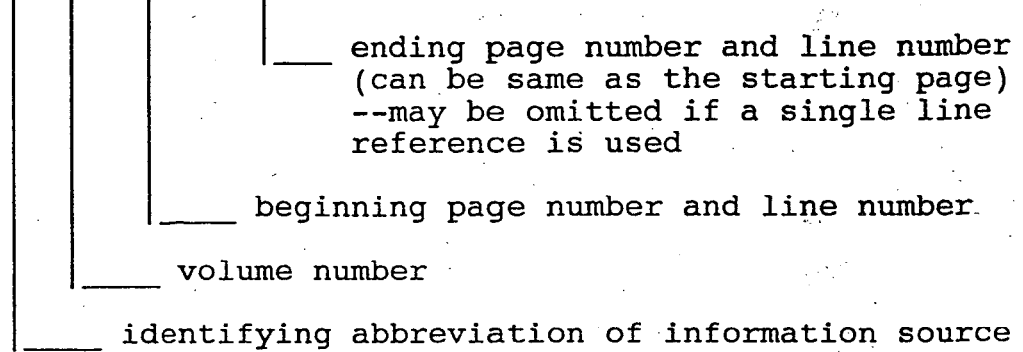


1.2

Citing the Record

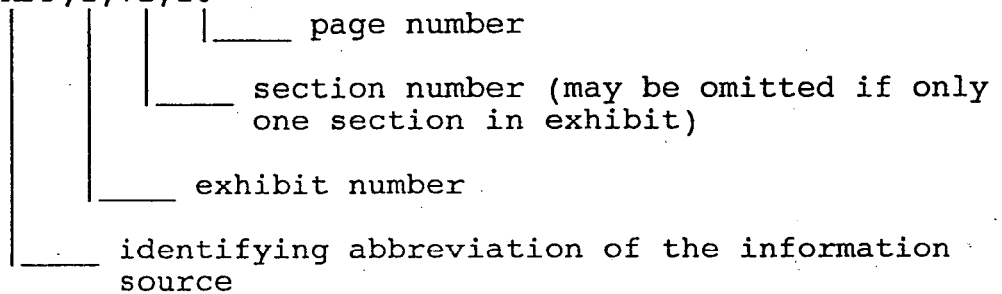
☒ Information from the hearing transcript:

T,V2,22:03-24:12



☒ Information derived from a hearing exhibit:

STAFF, 2, V2, 10



☒ Abbreviations of information source:

- T Hearing Transcript
- STAFF State Water Resources Control Board
- WRID Walker River Irrigation District
- CALTROUT ... California Trout, Inc.

1.3

Related Proceeding

In a related proceeding, on June 21, 1990, the Board adopted Order WR 90-9, which amended License 9407, among others, by adding the following condition:

"In accordance with the requirements of Fish and Game Code Section 5946, this license is conditioned upon full compliance with Section 5937 of the Fish and Game Code."

That action was taken in response to the California Court of Appeal's decision in California Trout, Inc. v. State Water Resources Control Board (218 Cal.App.3d 187, 266 Cal.Rptr. 788 (1990); hereafter "Cal-Trout II"), which interpreted Fish and Game Code Section 5946¹ to require that the Board proceed forthwith to add a term requiring compliance with Fish and Game Code Section 5937² to water right licenses issued by the Board in Fish and Game District 4 1/2 after September 9, 1953. In its decision in Cal-Trout II, supra, however, the court encouraged the Board to proceed to develop specific flow criteria, following a hearing, for the guidance of the dam owner in meeting the general requirement of Section 5937, that fish below the dam be kept in good condition. The instant proceeding responds to that direction from the court.

1.4 The Hearing

On July 26 and 27, 1990, the Board held a hearing, following a complaint by California Trout, Inc.,

1 Fish and Game Code Section 5946 provides in relevant part as follows:

"No permit or license to appropriate water in District 4 1/2 shall be issued by the State Water Resources Control Board after September 9, 1953, unless conditioned upon full compliance with [Fish and Game Code] Section 5937."

2 Fish and Game Code Section 5937 provides in relevant part as follows:

"The owner of any dam shall allow sufficient water at all times to pass through a fishway, or in the absence of a fishway, allow sufficient water to pass over, around or through the dam, to keep in good condition any fish that may be planted or exist below the dam."

against the District's operation of Bridgeport Reservoir.³ That Reservoir is a project work associated with the District's right, confirmed by License 9407, to divert and beneficially use water of the East Walker River. The goal of the hearing was to receive evidence for the development of an order which would prescribe specific criteria for implementing the general requirement of Fish and Game Code Section 5937 that the fish below Bridgeport Dam be kept in good condition, and which would take necessary action to protect the fishery in Bridgeport Reservoir.

1.5 Participation by the Department of Fish and Game

In Cal-Trout II, supra, the court made the following observation concerning the role of the Department of Fish and Game (hereinafter, "the Department"):

"We note that in the statutory scheme by which the Water Board is to consider the means by which to protect fisheries that the Department of Fish and Game is recognized as having a primary expertise. (See Wat. Code, § 1257.5; Pub. Res. Code, §§ 10000-10004.)" (218 Cal.App.3d 187, ___, 266 Cal.Rptr. 788, 802.)

1.5.1 The Department participated in negotiations with the District during a period of many months preceding the

³ *California Trout, Inc.*, subsequently withdrew its complaint. The Board decided to proceed on its own motion, since the Board's duty pursuant to Section 5946 is not predicated upon existence of a complaint. *California Trout* appeared at the hearing and presented evidence.

hearing, but was unable to resolve its differences with the District. Following issuance on May 10, 1990, of notice of the July 26 and 27 hearing, and prior to the commencement of that hearing, the Board received three communications from the Department: letters dated June 7, 1990; June 22, 1990; and July 12, 1990.

1.5.2 The Department's June 7 letter discusses a number of issues related to implementing Section 5937 through quantified criteria. Among other things, it notes that the Board's notice of the July 26 and 27 hearing specifically identified, as a hearing issue, "[t]he need to provide for interim streamflow and reservoir requirements until ... long-term conditions have been developed." The June 7 letter concludes by recommending:

"... that the current hearing be conducted expeditiously to produce interim protective standards until such a time as permanent adjustments can be made under the Public Resources Code stream flow protection program. ... [The Department] will provide the needed expertise to assist the Board in both phases."

As noted above, on June 21, 1990, the Board adopted Order WR 90-9, which amended License 9407, among others, by adding the following general condition:

"In accordance with the requirements of Fish and Game Code Section 5946, this license is conditioned upon full compliance with Section 5937 of the Fish and Game Code."

1.5.3 The Department's June 22 letter requested that the Board hold a hearing "of a summary nature", to be completed by July 13, 1990, to establish interim requirements for operation of the Reservoir. It is not clear to us what the Department intended by a hearing "of a summary nature". Neither the statutes nor Board rules provide for a summary hearing.⁴ Accordingly, the Board notified interested parties (including the Department) that it would proceed with the hearing previously scheduled for July 26 and 27, 1990.

1.5.4 The Department did not file a notice of intent to appear at the July 26 and 27 hearing, as required by Board rule. (23 Calif. Code of Regs 762(b)(1).) Instead, the Department sent its July 12 letter to the Board. Therein the Department first asserted that, since the Board did not hold a summary hearing by July 13, 1990, as suggested in the Department's letter of June 22, 1990:

⁴ The Board's adoption of Order WR 90-9 on June 21, 1990, which added the general condition requiring compliance with Section 5937, was a ministerial act not requiring a hearing. (Cal-Trout II, supra.) However, implementation of Section 5937 by ordering quantified flow and other criteria, based upon probably conflicting evidence of fish needs, must be characterized as discretionary action requiring an adjudicatory hearing. We believe that this point was recognized by the court in Cal-Trout II, supra.

"By the time the Board conducts its [July 26 and 27] hearing and issues any orders, the effectiveness of any interim protections will be questionable and of little value to the current East Walker River fishery."

Next, the Department opined that:

"The most effective action that the Board could take is to administratively adopt the court ordered winter flow of 30 cfs to insure that the stream has adequate water after August 15, 1990."

As is the case with the Department's reference in its letter of June 22, 1990, to a hearing "of a summary nature", we are unaware of any authority to "administratively adopt" and promulgate as our own order, without first conducting an adjudicatory hearing, flow criteria imposed by a justice court as part of a sentence in a judicial action.

The Department's conclusion was that if the hearing proceeded on the Board's schedule, i.e., on July 26 and 27, 1990, there would be a high degree of likelihood that the Reservoir would not contain enough water to provide for sufficient fish flows either to keep fish in good condition or to meet the justice court ordered 1990-91 winter flow. Without enough flow to protect fish in this water year, the Department asserted, there would be no reason to divert Division

staff resources to prepare for a hearing that could be more effectively held later in this year.

1.5.5

We did not agree that a timely order following a July 26 and 27 hearing would be of questionable effectiveness and of little value to the fishery. First, the justice court order to which the Department refers in several of its letters does not include the type of detailed terms and conditions to implement Section 5937 contemplated to be ordered--even on an interim basis--by the Board. Second, the release ordered by the justice court extends only to March 1, 1991; specific criteria to implement Section 5937, ordered as the result of a Board hearing, would apply until changed by further order of the Board. Finally, an appeal has been taken from the justice court order; were that order to be reversed, no specific criteria to implement Section 5937 would be in force. Accordingly, the Department's suggestion that the July 26 and 27 hearing be put off was not accepted.

1.5.6

Each of the letters from the Department noted above contained references to the Department's authority and duty pursuant to Public Resources Code Section 10000 et seq. In summary, these provisions require the Director of Fish and Game to identify and list streams and watercourses throughout the state for which minimum

flow levels need to be established to assure the continued viability of stream-related fish and wildlife resources.⁵ The Director is also required to prepare proposed streamflow requirements for each identified stream or watercourse and to transmit the proposed requirements to the Board.⁶ The Department does not presently have recommendations for streamflow requirements for the East Walker River developed pursuant to those Public Resources Code provisions. The Department made these references in the context of its suggestion that the Board limit its present proceeding to a "summary hearing" or to "administrative adoption" of the order of the justice court. The

5 Public Resources Code Section 10001.

6 Public Resources Code Section 10002.

The legal effect of stream flow recommendations made by the Department pursuant to this program is also specified in Section 10002. The Department is to transmit the recommendations to the Board for use pursuant to Water Code Section 1257.5. In turn, that section provides:

"The board, in acting on applications to appropriate water, shall consider streamflow requirements proposed for fish and wildlife purposes pursuant to Sections 10001 and 10002 of the Public Resources Code. The board may establish such streamflow requirements as it deems necessary to protect fish and wildlife as conditions in permits and licenses in accordance with this division. (Emphasis added.)

Thus, the legal effect of the Department's recommendations is in terms limited to Board action on applications to appropriate unappropriated water. The instant matter is not a proceeding on an application; it is a proceeding on previously-issued License 9407 to correct the Board's failure to comply with the requirement of Fish and Game Code Section 5946 at the time that license was issued. However, we believe transmittal by the Department of recommendations developed pursuant to the Public Resources Code program, and consideration of those recommendations by the Board consistent with the requirements of our hearing procedure, to be appropriate and useful. In any event, the Board remains responsible for establishing the requirements which it deems necessary to protect fish and wildlife.

Department appeared to contemplate that an adjudicatory hearing on streamflow and other criteria should wait upon the Department's development of its recommendations pursuant to the Public Resources Code provisions. The Department gave no indication as to when these recommendations might be ready.⁷ For the reasons discussed above, we could not accept the Department's suggestion. In this connection, we note the teaching of the court in Cal-Trout II, supra, that while a well-balanced diet is preferable to an unbalanced diet, starvation is hardly justified by the desire to provide a well-balanced meal.

1.5.7 Since it appeared that the Department did not intend to participate in the July 26 and 27 hearing, the Chief, Division of Water Rights, issued and caused to be served subpoenas duces tecum to three of the Department's employees known to have expertise on the issues that were the subject of the hearing.⁸ The Department filed a motion to quash the subpoenas. Time

⁷ In its letter of June 7, 1990, the Department stated that it "has recommended an instream flow methodology study for the East Walker River and is awaiting budgetary approval."

⁸ Water Code Section 1080 authorizes the Board to issue subpoenas for the attendance and giving of testimony by witnesses and for the production of evidence "in any proceeding in any part of the State." The Board has delegated this authority, in water right proceedings, to the Chief, Division of Water Rights.

did not permit the Board to rule on this motion prior to the hearing. The subpoenaed Department experts did not appear at the hearing, although other Department employees attended throughout.

1.5.8 Shortly after the hearing opened on July 26, 1990, one of the Department employees in attendance presented the Board with declarations executed by expert employees of the Department. These documents were accepted into the hearing record. However, the information contained therein was not presented upon oath or affirmation and there was no opportunity to cross-examine the declarants. (See 23 Calif. Code of Regs 761(g).) We do not wish to disregard the teaching of the court in Cal-Trout II, supra, concerning the Department's primary expertise. However, the Department's conduct in this proceeding created an obvious and serious problem of due process of law. We conclude that the Board has no choice but to treat the information thus submitted by the Department as hearsay evidence. Pursuant to Board rule, hearsay evidence may be admitted and "used for the purpose of supplementing or explaining any direct evidence but shall not be sufficient by itself to support a finding unless it would be admissible over objection in civil actions." (23 Calif. Code of Regs 761(d).) The information

submitted by the Department would not be admissible over objection in civil actions. Accordingly, the Board may not (and in the findings which follow, does not) use that information, by itself, to support findings in this proceeding.

2.0 **DESCRIPTION OF THE PROJECT**

2.1 East Walker River Drainage

The East Walker River originates on the eastern slope of the Sierra Nevada in Yosemite National Park and the Hoover Wilderness Area. The drainage area descends rapidly from an elevation of about 12,500 feet to about 6,000 feet at the floor of Bridgeport Valley. Most runoff in the approximately 350-square-mile drainage is from snowmelt which usually occurs between May 10 and June 10. (WRID,1,3.) Five tributaries flow through Bridgeport Valley Meadows into Bridgeport Reservoir, located at the eastern end of the Meadows.

2.2 Bridgeport Reservoir and Downstream

The District is an irrigation district formed in 1919 pursuant to laws of the State of Nevada. It serves water for irrigation of lands within Mason Valley, Smith Valley, and along the East Walker River.

(WRID,A,4.) The District began construction of Bridgeport Reservoir in 1924. When full, the Reservoir is 30-feet deep at the dam and has a maximum capacity

of 40,494 acre-feet. From the Reservoir outlet, the East Walker River flows approximately seven miles to the California-Nevada border. From the border, the river flows in a generally northeast direction to its confluence with West Walker River in Mason Valley, forming the Walker River. The Walker River exits Mason Valley and enters the reservation of the Walker River Paiute Tribe of Indians at Schurz, Nevada.

2.3 Water Rights

2.3.1 The water rights associated with Bridgeport Reservoir include License 9407 held by the District, a water agency formed under the laws of the State of Nevada. The District's boundaries encompass about 246,000 acres, of which about 79,900 are irrigated. License 9407 evidences and confirms an appropriative water right having a priority date of August 8, 1919, to divert to storage a maximum of 39,700 acre-feet of water per annum (afa) and to make a maximum withdrawal of 36,000 afa. License 9407 was issued on June 8, 1970.

2.3.2 Water rights in the Walker River stream system, for both direct diversion and storage, have been generally adjudicated by the United States District Court for the District of Nevada in United States of America v. Walker River Irrigation District (U.S.D.C., D.Nev., In

Equity No. C-125). That action led to a decree filed April 15, 1936, as amended April 24, 1940, referred to as "the Walker River Decree". The Walker River Decree identifies, among many other rights, the District's Bridgeport Reservoir appropriation which was, at the time of entry of the Decree, in the process of being perfected pursuant to water right Permit 2536.

2.4

Hydrology

The hydrology of the East Walker River watershed is primarily a function of snowmelt runoff. Climatologic and hydrologic data are available for the years 1929 through 1989, except for the year 1943. Streamflow and Reservoir level data are available for the river and for Bridgeport Reservoir from gages of the United States Geological Survey. Because annual variation in the water supply produced by the East Walker River watershed is relevant to the specific criteria that we shall prescribe to implement Fish and Game Code Section 5937 and to protect the fishery in Bridgeport Reservoir, we next summarize the hydrologic evidence.

2.4.1

The District's general manager testified that with 100 percent of average snowpack water content, the District would not have an adequate water supply for its system. (WRID,A,15; T,V1,151:25-152:9; T,V2,15:16-16:5.) Based

on this premise, the general manager's proposed water year classification is shown below, together with the number of water years corresponding to the three classes based on 61 years of available data:

GENERAL MANAGER'S
PROPOSED WATER YEAR CLASSIFICATION

<u>Water Year Class</u>	<u>Percent of Average Water Content</u>	<u>Number of Years</u>
Wet	Above 120%	13
Normal	100% to 120%	17
Dry	Less than 100%	31

Thus, of the 61 years of record, 31 years would be classified as dry, 17 years would be classified as normal, and 13 years classified as wet. Using this proposed classification, the Reservoir would be operated under dry year criteria one-half of the time. As previously noted, this classification is based on the amount of water required to meet the demands of the system. (T,V1,15:15-16:3; T,V1,151:25-152:9; T,V1,172:15-173:11.)

2.4.2 The District's expert consultant, on the other hand, testified that to develop a water year classification system he would prepare an exceedance curve⁹ and target the area between the 30 percent and 70 percent, or perhaps the 20 percent and 80 percent, exceedance

⁹ An exceedance curve shows the percent of time a particular value is equaled or exceeded during a period of time.

values as normal water years. Wet and dry water years would be those years above and below the normal year range. (T,V2,80:1-80:21.) This approach to water year classification is based on the supply of water produced within the watershed rather than on the demand on the system.

2.4.3 We conclude that it is more reasonable to base a water year classification system on the available water supply than on demands which may be placed on the project, because a supply-based classification system conforms to generally accepted project planning practice. We find that use of the 30 percent/70 percent exceedance range values proposed by the District's expert produces the more balanced distribution of year-types, wherein 19 of the 61 years of record would be classified as wet years; 21 years would be classified as normal years, and 21 years would be classified as dry years.

2.4.4 We also find that the hydrologic data of record show that there are five years in which a normal year immediately followed a dry year. In two of those normal years, Bridgeport Reservoir was drawn below 2000 acre-feet. This drawdown apparently did not result in failure to keep in good condition the fish in either the Reservoir or the river below the Reservoir.

Accordingly, we conclude that it would be reasonable to include a "recovery year" classification to maximize the District's beneficial use of the available water supply without compromising either the statutory requirement that the fish below the Reservoir be kept in good condition or the public trust in the reservoir fishery.¹⁰

Our conclusions result in the following water year classification:

SELECTED WATER YEAR CLASSIFICATION

<u>Water Year Classes</u>	<u>Number of Years</u>	<u>Percent of Average Water Content</u>
Wet	18	115% or greater
Normal	17	Between 75% & 115%
Dry	21	75% or less
Recovery	5	A "normal" year immediately following a "dry" year

2.5 Summary of Reservoir Operations

Water is routinely stored in Bridgeport Reservoir during the period November 1 of each year to March 1 of the following year, and at any time during the remainder of the year when rights identified in the

¹⁰ In a year classified as "recovery", the District should be authorized to draw the Reservoir below 2,000 acre-feet, but in no event below the 600 acre-foot minimum at which the study discussed in paragraph 5.1, below, showed no detrimental effect on fish life from the Reservoir discharge.

Walker River Decree are being satisfied. The irrigation season within the Walker River system normally begins March 1. During the irrigation season the natural inflow is passed through the Reservoir and delivered to the downstream users as their rights appear in the Walker River Decree. Delivery of stored water to the District's users normally begins about April 1. Each user may request delivery of water, pursuant to contract, at any time during the irrigation season. (T,V1,144:5-144:26.)

2.5.1 Reservoir operation records show that during normal and wet water years, the Reservoir was rarely drawn below 3,000 acre-feet at the end of the irrigation season. During six dry water years, however, the Reservoir was dewatered. During the remaining 15 dry water years, the Reservoir was rarely drawn below 1,000 acre-feet and the average level of storage in the Reservoir at the end of the irrigation season was about 3,450 acre-feet.

2.5.2 With the major exception of years in which the Reservoir was dewatered, the evidence indicates that the fishery has not been adversely affected by system operations during the irrigation season. (WRID,I.) The District presented evidence that water is released

outside the irrigation season to meet stockwatering and domestic needs, and for the stream fishery.

(T,V1,140:17-141:23; T,V1,150:3-150:12; T,V1,161:22-163:22; T,V1,220:14-220:20.) The evidence shows, however, that there is concern for the stream fishery during that period, due to inadequate flows. This matter is discussed in paragraph 5.2 below, relating to the effect of winter flows on the fishery. At this point, however, we note that the exact amount of releases is in question because of problems with the USGS gaging station immediately downstream. These problems include limitations of the equipment and of the control section in the channel, and icing of the water in the gaging station stilling well, which result in questionable flows, or even flow estimates, being reported in USGS gage records. (T,V2,94:6-96:21; T,V1,161:7-161:25; T,V1,166:6-169:14; T,V1,182:5-182:25.) We find it essential that a reliable and accurate flow measuring and recording device be maintained at an appropriate point below the Reservoir.

3.0 EAST WALKER RIVER FISHERY

The East Walker River currently supports two very productive fisheries, one in the Bridgeport Reservoir itself and the other in the East Walker River downstream of the Bridgeport Dam. (WRID,O,iii.) Prior

to the construction of Bridgeport Reservoir, Lahontan cutthroat (Oncorhynchus mykiss henshawi), up to and exceeding 30 pounds in weight, annually migrated from Walker Lake up the East Walker River and through Bridgeport Meadows to spawn near Twin Lakes in tributary Robinson Creek. Following construction of the Reservoir; introduction of other, non-native trout; and construction of Weber Reservoir; the Lahontan cutthroat has disappeared from the river. At present, nine species of fish are found in Bridgeport Reservoir or in the East Walker River downstream. Five native fishes include mountain whitefish (Prosopium williamsoni), Tahoe sucker (Catostomus tahoensis), mountain sucker (Catostomus platyrhynchus), Lahontan redbside (Richardsonius egregius), and tui chub (Gila bicolor subspecies).

Four introduced fishes include brown trout (Salmo trutta), rainbow trout (Oncorhynchus mykiss), Sacramento perch (Archoplites interruptus), and carp (Cyprinus carpio). (CALTROUT,15,2.)

4.0 EFFECTS OF BRIDGEPORT RESERVOIR ON FISH

Bridgeport Reservoir has had both positive and negative influences on fish in the East Walker River.¹¹

¹¹ In the notice of the July 26 and 27, 1990 hearing, the Board sought information on the impact of Bridgeport Reservoir operations on the reservoir fishery. No evidence was produced at the hearing of the effects on the reservoir fishery of normal operations. We conclude, therefore, that--except for the obvious impact of dewatering the reservoir--historical storage levels and reservoir operations serve to satisfactorily maintain the reservoir fishery.

4.1

Positive Effects of the Reservoir

At present the East Walker River downstream from Bridgeport Reservoir to Murphy's Pond is an exceptionally productive roadside stream managed by the Department as a trophy brown trout fishery.

(CALTROUT,15,2.) The Department rates this stream reach as one of the three exceptionally productive and easily accessible streams along the east slope of the Sierra Nevada. (WRID,Q,2; WRID,R,2.) The positive influences of the Reservoir include: (1) an increased food base and (2) a more stable stream environment, with increased summer flows and less year-round fluctuation in stream water temperatures. (WRID,Q2,2; WRID,R,3.) However, this existing productive brown trout fishery is not the result solely of the presence and operation of the Reservoir. To compensate for poor spawning conditions below the Reservoir, the Department annually stocks about 100,000 fingerling brown trout. Additionally, angling limitations have been imposed, in the form of minimum fish length, daily bag limit, and restriction of angling to use of artificial lures and flies. (CALTROUT,15,6.) Without these special management practices, the trout fishery in the East Walker River below the Reservoir would be no more than average. (T,V2,155:11-156:9.)

4.2

Negative Effects of the Reservoir

As previously noted the Lahontan cutthroat trout fishery in the East Walker River has been replaced by a highly valued brown trout fishery. Operation of Bridgeport Reservoir has from time to time adversely affected that introduced fishery.

4.2.1

Since it began operation, the Reservoir has been drained six times: in the years 1928, 1929, 1930, 1960, 1977, and 1988. During the September, 1988, draining of the Reservoir, an extensive fish kill occurred as turbidity, suspended sediment concentrations, and water temperatures increased in the river. The high turbidity and suspended solid levels are attributable to erosion of sediment deposits within the Reservoir. Water flowing through the Reservoir removed some of the soft sediments which had accumulated in the old stream channel and transported them out of the Reservoir into the river. Further, elevated water temperatures in the river probably resulted from abnormally warm water being released from the Reservoir. These abnormally warm temperatures were caused, as the Reservoir was drawn down, by a very large surface area, relative to volume, being exposed

to solar radiation and abnormally warm air temperatures. (WRID,R,4.)

4.2.2 In addition to the adverse effect on the fish caused by periodic draining, the Reservoir has also adversely affected the fish by reducing winter flows (during the period November 1 to March 1), thereby producing poor quality overwinter habitat for young-of-year brown trout. (CALTROUT,15,13; T,V2,98:24-99:1.)

4.2.3 These negative effects have constituted a violation of Fish and Game Code Section 5937, in that they have resulted in a failure of the owner of Bridgeport Dam to keep the fish below the dam in good condition.

5.0 **MINIMUM POOL, MINIMUM FLOWS, AND RELATED CONDITIONS FOR BRIDGEPORT DAM IN IMPLEMENTATION OF FISH AND GAME CODE SECTION 5937**

5.1 Minimum Pool

The District, in conjunction with the Department, conducted a reservoir drawdown study during September, 1989. (WRID,P and R.) The objective of the study was to determine how low the Reservoir could be drawn down before the quality of water discharged became toxic to the downstream fishery. The study showed that the key water quality parameters--turbidity, dissolved oxygen, and water temperature--in the East Walker River as the

Reservoir was drawn down to 600 acre-feet were not related to reservoir volume and did not become detrimental to fish life. In other words, water temperatures were not elevated, dissolved oxygen remained above 6 mg/l (critical level being 5 mg/l or less), and turbidity (measured in NTU¹²) remained below the point where fish health is jeopardized (critical level being above 200 NTU).

5.2

Winter Flows

The District produced evidence that prior to the construction of Bridgeport Reservoir, winter flows in the East Walker River ranged from approximately 40 to 50 cubic feet per second (cfs). (WRID,T,2.) The only available USGS pre-project records (1923-1924) indicate that pre-project winter flows (October-March) ranged from 60 to 100 cfs. The District presented evidence that, since the construction of the Reservoir, it has attempted to make winter releases (October-March) from 10 to 12 cfs. (WRID,S,V; T,V1,150:3-150:12.) Although a fishery of high quality has developed in the East Walker River downstream of Bridgeport Reservoir, that fishery may not have reached its full potential because of poor overwintering habitat for young-of-year brown trout. In the East Walker River, young-of-year brown

¹² Nephelometric Turbidity Unit (NTU) is a measurement of reflected light (transparency of water) and an indication of the amount of materials suspended in the water column.

trout prefer riffle habitat during the winter months while adult brown trout concentrate in deep runs and pools. (CALTROUT,15,13; T,V2,128:26-129:10.)

5.2.1 Observations indicated that riffle habitat quality decreases as flows decline from 30 cfs to 13 cfs. (WRID,S,Table 11,23.) Observations also show that winter survival of young-of-year brown trout decreases as average winter flows decrease from 16 cfs to 9 cfs. (CALTROUT,15,13.) Survival decreases at lower flows because young-of-year brown trout are forced to concentrate in shallower areas or move from their preferred riffle habitat into deeper runs and pools. The size and number of older trout present in deeper water significantly increases young-of-year mortalities, because of predation. Reduction in riffle habitat and subsequent concentrations of young-of-year lacking bank cover may also be expected to increase predation by birds. (CALTROUT,15,13; WRID,S.)

5.2.2 In addition, winter habitat available to young-of-year brown trout can be reduced by winter icing (frazil/anchor ice¹³). A study completed by the District (WRID,T) shows that icing occurs in the East Walker River downstream of the Highway 182 bridge under the District's historical non-irrigation season

¹³ Frazil/anchor ice means ice that forms beneath the surface of a flowing stream.

operation. Conditions suitable for frazil/anchor ice formation downstream of the Reservoir are most likely to occur during the months of December and January. (T,V2,98:24-99:1.) Factors affecting the formation of frazil/anchor ice are water flow, surface turbulence, and air temperature. (WRID,T.) Riffle habitats, because of the surface turbulence, are most likely to be adversely affected by frazil/anchor ice. (T,V2,102:14-102:17.) Increased winter flows from 13 cfs to 26 cfs would significantly reduce the frequency of frazil/anchor ice formation in the reach of the river most suitable for rearing young-of-year brown trout, that is, from Highway 182 Bridge to Murphy's Pond. (WRID,T,Table 4.) Therefore, the District's consultant proposes that controlled releases from Bridgeport Reservoir be increased from 10 cfs to 20 cfs when the nighttime air temperature is forecasted to be 15°F or less and from 20 to 30 cfs when the nighttime temperature is expected to be 0°F or less. During drought years, in view of the limited water supply, the District's consultant proposes a constant 10 cfs flow. (WRID,T,31.) The District's consultants also indicated that problems of stranding of fish were not expected to occur if the District fluctuated the winter flows between 10 cfs and 30 cfs to decrease the potential of frazil/anchor ice formation. (T,V2,72:12-74:18.)

5.3

Large Flow Changes

Although no direct testimony was received regarding the large flow changes at the beginning and end of irrigation season, experience has shown that these changes could be detrimental to the fishery in the East Walker River downstream Bridgeport Reservoir.

6.0

SUMMARY OF FINDINGS

6.1

The presence and operation of Bridgeport Reservoir, together with fishery management activities of the Department, has resulted in development of an introduced and managed trophy brown trout fishery in the East Walker River downstream of Bridgeport Reservoir.

6.2

Historical operation of Bridgeport Reservoir--with the notable exception of total dewatering--apparently has been adequate to maintain the fishery in Bridgeport Reservoir and the introduced and managed trophy brown trout fishery in the East Walker River below of Bridgeport Reservoir.

6.3

Periodic dewatering of the Reservoir has severely and adversely affected the downstream introduced and managed trophy brown trout fishery in the East Walker River.

- 6.4 A minimum pool of 600 acre-feet in Bridgeport Reservoir would probably prevent adverse water quality effects on the downstream trophy brown trout fishery in the East Walker River, as well as on the reservoir fishery.
- 6.5 Routine winter releases from Bridgeport Reservoir of 10-12 cfs into the East Walker River downstream adversely affect the survival of young-of-year brown trout that now exist in the river below the Reservoir.
- 6.6 Survival of young-of-year brown trout improved when flows approached 20 cfs.
- 6.7 Formation of frazil/anchor ice also has the potential to adversely affect young-of-year brown trout survival.
- 6.8 Releases ranging from 20 to 30 cfs under specific conditions appear to reduce frazil/anchor icing in riffle habitats preferred by young-of-year brown trout.
- 6.9 Ramping¹⁴ of the flows in the East Walker River as flows are changed at the beginning and end of the irrigation season may help minimize fish stranding.

¹⁴ Ramping is the transition of flow levels over time to minimize the potential effects of change between two levels of flow.

- 6.10 Modification of the existing USGS gage at river mile 0.15 is necessary to minimize adverse effects on the gage of freezing and thereby improve low-flow monitoring in the East Walker River.
- 6.11 Maintenance of low turbidity levels in Bridgeport Reservoir would assure that its operation does not adversely affect the water quality of the East Walker River.
- 6.12 A water quality monitoring and reporting program would help assure that operation of Bridgeport Reservoir does not adversely affect the fisheries in Bridgeport Reservoir and in the East Walker River below. Data provided by such a monitoring program would also help to produce a long-term solution for protection of these fishery resources.

ORDER

NOW, THEREFORE, IT IS ORDERED that:

1. The condition ordered to be added to License 9407 by Order WR 90-9 is amended to read as follows:

In accordance with the requirements of Fish and Game Code Section 5946, this license is

conditioned upon full compliance with Section 5937 of the Fish and Game Code. For the purpose of enforcing the preceding general requirement pursuant to water right license enforcement remedies, and insofar as meeting that requirement is a function of one or more of the parameters addressed by the specific terms and conditions which follow, the requirement will be deemed to have been met if Licensee observes these specific terms and conditions.

2. The following terms and conditions are added to License 9407 as the specific terms and conditions to which reference is made in Order paragraph 1 next above.

a. Water Year Classification. For the purposes of implementing the terms and conditions which follow, water year classifications shall have the meaning shown below, determined based on the percentage of the average April 1 total snowpack water content as measured at the Virginia Lakes Ridge Snowcourse or suitable snowcourse approved by the Chief, Division of Water Quality and Water Rights.

Classification

Definition

Wet years

Snowpack water content is at or above 115% of average

Normal years

Snowpack water content is between 75% to 115% of average

Dry years

Snowpack water content is at or less than 75% of average

Recovery years

A "normal" year immediately following a "dry" year

- b. Minimum Reservoir Pool. Licensee shall maintain Bridgeport Reservoir at not less than the following storage levels:

<u>Classification</u>	<u>Storage Level</u>
Wet Years	2000 acre-feet
Normal Years	2000 acre-feet
Dry and Recovery Years	600 acre-feet

- c. Minimum Release. Licensee shall at all times maintain a continuous minimum release from Bridgeport Reservoir of not less than 20 cfs.

- d. Minimum Flow to Prevent Icing. To prevent formation of frazil/anchor ice in the East Walker River downstream of Bridgeport Reservoir to Murphy's Pond, during November 1 through March 1 of each year, and based on the forecasted minimum 24-hour air temperature as provided by the National Weather Service, Licensee shall make the following continuous releases until forecasted minimum air temperatures again exceed the identified temperature levels:

<u>Forecasted Temperature (°F)</u>	<u>Required Release Flow (cfs)</u>
0° and Greater	20
Less than 0°	30

Following consultation with the Department of Fish and Game, and approval of the Chief, Division of Water Quality and Water Rights, Licensee may operate under an approved alternate plan. Such an alternate plan shall describe specific measures and operational procedures to be taken to minimize impacts to the fishery.

e. Gage Improvements. Licensee shall install a flow monitoring gage downstream of Bridgeport Reservoir that is minimally affected by freezing and improves the accuracy of low flow gage readings. By May 31, 1991 Licensee shall submit, for the approval of the Chief of the Division of Water Quality and Water Rights, a proposal identifying the type of gage installation and the time frame for installation. In any event, gage installation shall be completed and the gage operable no later than October 1, 1991.

f. Water Quality. Licensee shall make appropriate operational changes as necessary to maintain turbidity levels of less than the following:

Average annual:	30 NTUs
90 percentile:	50 NTUs
Maximum Instantaneous:	150 NTUs

These levels shall be measured at the locations specified in the Water Quality Monitoring Plan required by paragraph g next below. This condition shall not be construed to limit the authority of the California Regional Water Quality Control Board, Lahontan Region, to set limits on turbidity which are different from those specified herein.

- g. Water Quality Monitoring. Licensee shall comply with a water quality monitoring and reporting program satisfactory to the California Regional Water Quality Control Board, Lahontan Region.

- h. Operations Manual. Licensee shall develop an Operator's Manual that details the day-to-day actions to be taken by the reservoir operators to set release flows for:
 - (1) Icing conditions;

 - (2) Repairs and maintenance to the dam, outlet works, or reservoir;

 - (3) Irrigation and non-irrigation season releases;

 - (4) Ramping at the beginning and end of the irrigation season.

A draft of the operator's manual shall be submitted for approval to the Division of Water Quality and Water Rights by March 1, 1991. If necessary, Licensee shall then make appropriate revisions and submit the final plan, as approved by Licensee's Board of Directors, to the Division within the time frame to be set by the Chief of the Division of Water Quality and Water Rights.

- i. Future Studies. To the extent data is developed that indicates that different flows are necessary to protect the fishery, the State Board has continuing authority to impose appropriate conditions on the license. No action will be taken pursuant to this paragraph unless the State Board determines, after notice to affected parties and opportunity for hearing, that such conditions are

necessary to meet the requirement of Fish and Game Code Section 5937; are necessary to implement Article X, Section 2, of the California Constitution; or are necessary to protect public trust uses and are consistent with the public interest.

CERTIFICATION

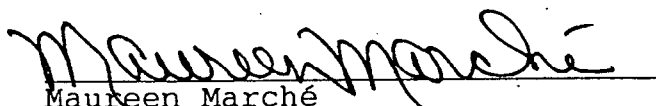
The undersigned, Administrative Assistant to the State Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on December 10, 1990.

AYE: W. Don Maughan
Edwin H. Finster
Eliseo M. Samaniego
John Caffrey

NO: None

ABSENT: Darlene E. Ruiz

ABSTAIN: None


Maureen Marché
Administrative Assistant
to the Board