STATE OF CALIFORNIA
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

IN THE MATTER OF LICENSE 1986 AND PERMITS 11885, 11886, AND 11887 OF THE U.S. BUREAU OF RECLAMATION

PETITIONS FOR TEMPORARY CHANGE INVOLVING THE TEMPORARY TRANSFER OR EXCHANGE OF UP TO 45,000 ACRE-FEET OF WATER FOR INSTREAM FLOW DEDICATION AND REDIVERSION

SOURCE: San Joaquin River

COUNTIES: Fresno, Madera, Tulare, Kern, Merced, Stanislaus, Kings, Contra Costa, Alameda, San Joaquin, and Sacramento

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ORDER APPROVING TEMPORARY CHANGES

BY THE DEPUTY DIRECTOR FOR WATER RIGHTS:

1.0 OVERVIEW

On September 2, 2022, the U.S. Bureau of Reclamation (Reclamation) submitted four petitions under Water Code sections 1707 and 1725 et seq. (Change Petitions), to the State Water Resources Control Board (State Water Board, or Board), Division of Water Rights (Division) for temporary change to transfer up to 45,000 acre-feet (af) of dedicated instream flows (Restoration Flows) previously stored in Millerton Reservoir and/or taken under control at Friant Dam pursuant to direct diversion rights. If approved, Restoration Flows could be rediverted through Patterson Irrigation District (PID) and Banta-Carbona Irrigation District (BCID) facilities to the Delta-Mendota Canal (DMC) for reuse by Friant Division Central Valley Project (CVP) contractors (Friant Contractors) through direct delivery, exchange, or transfer. The Change Petitions include a request to modify the Net Delta Outflow Index (NDOI) as currently defined by the State Water Board Revised Water Right Decision 1641 (D-1641), consistent with the purpose of the transfer.

Subsequently, on September 8, 2022, Reclamation resubmitted the petition package with revised attachments correcting the maximum combined rediversion rate at PID and BCID from 150 cubic feet per second (cfs) to 105 cfs.

In 2013, to facilitate implementation of the San Joaquin River Restoration Program (SJRRP), the State Water Board approved changes for long-term instream flow dedication of Restoration Flows and the rediversion of those flows at specified locations pursuant to

Water Code section 1707. (See Order Approving Change and Instream Flow Dedication, October 21, 2013 [hereinafter "2013 Order"].) The 2013 Order anticipated that recapture and recirculation of Restoration Flows could occur in the future at PID and BCID facilities, if authorized by the State Water Board. The Change Petitions relate to these new points of rediversion not authorized in the 2013 Order. Approval of the Change Petitions would provide a means to supply water to the Friant Contractors when there is limited or no capacity to redivert Restoration Flows at the Jones Pumping Plant and Banks Pumping Plant (Delta Pumps) in the Delta.

The proposed transfer would assist Reclamation in meeting the two primary goals of the San Joaquin River Settlement Act (Public Law 111-11 Title X § 10001 et seq., 123 Stat 991.1349 (2009)): (1) to restore and maintain fish populations, including salmon, in good condition in the mainstem of the San Joaquin River below Friant Dam; and (2) to reduce or avoid adverse water supply impacts on the Friant Contractors that may result from Restoration Flows. The rediversions proposed in the Change Petitions remain subject to applicable provisions in the 2013 Order, Reclamation's License 1986 and Permits 11885, 11886, and 11887, and Biological Opinions (BO's) issued by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) under the federal Endangered Species Act (ESA).

Based on limits under Water Code 1725, the transfer period proposed in the Change Petitions is one year from the date an Order approving the changes is issued. Water subject to the transfer includes Restoration Flows from: (a) water released from Millerton Reservoir that was previously collected to storage and that subsequently remains under Reclamation's dominion and control; and (b) water taken, and subsequently remaining, under Reclamation's dominion and control through the exercise of direct diversion rights at Friant Dam but allowed to pass into the river channel in lieu of being conveyed into and through canals. This Order contains additional monitoring and reporting requirements that build on previous efforts to improve the accounting and tracking of Restoration Flows from Friant Dam to the Delta.

2.0 CRITERIA FOR APPROVING THE TEMPORARY CHANGE

Pursuant to Water Code section 1725, a permittee or licensee may petition the Board to temporarily change the point of diversion, place of use, or purpose of use of water through a transfer or exchange of water. The Board may approve the requested change if the transfer would involve only the amount of water that would have been consumptively used or stored by the permittee or licensee in the absence of the proposed temporary change, would not injure any legal user of the water, and would not unreasonably affect fish, wildlife, or other instream beneficial uses. (Wat. Code, § 1725.)

Pursuant to Water Code section 1707, a permittee or licensee may petition the Board for a change for purposes of preserving or enhancing wetlands habitat, fish and wildlife resources, or recreation in, or on, the water. (Wat. Code § 1707, subd. (a)(1).) The petition may be submitted for any of the purposes described above and may be submitted in

combination with a petition to make any other change authorized pursuant to part 2 of division 2 of the Water Code [concerning water right permit and license program]. (Wat. Code § 1707, subd. (a)(2).)

Water Code section 1707, subdivision (b) sets the conditions for the Board's approval:

> The board may approve the petition filed pursuant to [Water Code section 1707] subdivision (a), subject to any terms and conditions which, in the board's judgment, will best develop, conserve, and utilize, in the public interest, the water proposed to be used as part of the change, whether or not the proposed use involves a diversion of water, if the board determines that the proposed change meets all of the following requirements: (1) Will not increase the amount of water the person is entitled to use; (2) Will not unreasonably affect any legal user of water; and (3) Otherwise meets the requirements of this division.

3.0 RECLAMATION'S WATER RIGHTS

3.1 Water Rights Established Prior to the Friant Division CVP

Long before the authorization of the Friant Division of the CVP, Miller and Lux, Incorporated, was the owner of extensive land holdings on both sides of the San Joaquin River between Gravelly Ford and a point some miles below the confluence with the Merced River, much of it riparian to the San Joaquin River. Over a long period, Miller and Lux, Incorporated had also initiated and developed appropriative rights to the waters of the San Joaquin River. An extensive adjudication, commonly referred to as the "Haines Decrees" entitled Miller and Lux, Incorporated, and its affiliated companies to most of the flow of the San Joaquin River at Whitehouse gaging station for use on their lands. The lands planted to crops were designated "crop lands" and the lands largely used for livestock pasture were designated as "grass lands." (D-935, p. 80.)

Under the so-called "Purchase Contract" dated July 27, 1939, Reclamation acquired from Miller and Lux, Incorporated, and from Gravelly Ford Canal Company their "grass lands" water rights. The "Exchange Contract" of the same date between the United States and companies formerly affiliated with Miller and Lux, Incorporated, provides for an exchange of water from the Sacramento River (via diversion through CVP pumps in the Delta and conveyance through the Delta Mendota Canal to a delivery point in the Mendota Pool) for water of the San Joaquin River adjudicated for irrigation of the "crop lands." Numerous other rights along the San Joaquin River were also acquired by the United States in anticipation or support of the Friant Division CVP. (D-935, pp. 80-81.)

The Exchange Contract provides for a maximum flow of 2,316 cfs for use on "crop lands." These rights are now vested in the Central California Irrigation District (CCID). Reclamation is obligated to deliver water to Mendota Pool to meet the contracted water supply due to CCID. Importantly, if Reclamation is unable to meet the supply specified in

the Exchange Contract from the Delta source, Reclamation is required to release these scheduled flows from Millerton Reservoir. (D-935, p. 82.)

3.2 Decision 935

Reclamation's water rights subject to the Change Petitions are License 1986, and Permits 11885, 11886, and 11887. Details related to these water rights are available online through the Division's eWRIMS electronic database. These rights were considered and approved under State Water Board Decision 935 (1959) (D-935) after the State Water Board held a hearing to consider competing applications[1] to appropriate unappropriated waters of the San Joaquin River and petitions to change point of diversion and place of use under a license to Reclamation in furtherance of the Friant Division of the CVP. (D-935, p. 1.) Subject to a few exceptions, Reclamation had acquired, either by purchase or by providing a substitute water supply, all existing water rights on the San Joaquin River between Gravelly Ford and some 37 river miles below Friant Dam. (*Id*., p. 13.) Other than certain water right claims upstream of Gravelly Ford that could be satisfied by releases from Millerton Reservoir to Gravelly Ford, to the extent it could be controlled, all water would be appropriated under the applications. (*Ibid.*)

Construction of Friant Dam, which impounds Millerton Reservoir, was completed in 1947 with a storage capacity of 520,500 acre-feet. From Friant Dam, the Madera Canal, with design capacity of 1,500 cubic feet per second (cfs), extends northward 36 miles to the Chowchilla River, and the Friant-Kern Canal, with design capacity of 4,000 cfs, extends southward 153 miles to the Kern River. (D-935, pp. 14-15.) The Friant Division of the CVP provides delivery of water under long-term water service contracts within the boundaries of certain districts along the Madera and Friant-Kern Canals. The anticipated maximum aggregate deliveries under the long-term contracts in any one year were 2,150,000 af, with 750,000 af being a Class 1 supply and up to 1,400,000 af being a Class 2 supply. Class 1 water was considered dependable in almost every year with deficiencies anticipated only in unusually dry years. Class 2 water was that water in excess of Class 1 and, accordingly, was anticipated to be less dependable as to its quantity and time of occurrence. It is available primarily during the spring and early summer months. (*Ibid.*) Class 1 water is more recently described as the first 800,000 af of available supply.[2]

At the time when the Board adopted D-935, Reclamation estimated that in about one out of four years releases from Millerton Reservoir (over and above those required to accommodate claims along the San Joaquin River between Friant Dam and Gravelly Ford) would be made to provide space for flood control. (D-935, p. 20.) In the hearing, Reclamation estimated that some additional capacity in the Madera and Friant-Kern

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[1] The Board denied competing applications by the City of Fresno and Fresno Irrigation District with the accommodation that the CVP provide municipal water to the City of Fresno and an average annual supply to Fresno Irrigation District on a parity with other long-term contract holders. (D-935, p. 75.)

[2] https://www.usbr.gov/newsroom/newsroomold/newsrelease/detail.cfm?RecordID=73745.

Canals would be available to capture this water (35,000 af) and that 50,000 af could be diverted and beneficially used in the vicinity of Mendota Pool. By allocating and controlling water in this manner, Reclamation anticipated that 98 percent of the water entering Millerton Reservoir could be diverted and placed to beneficial use. (*Ibid.*)

Reclamation sought to appropriate a total of 11,500 cfs by direct diversion and 2,800,000 af per annum by storage for irrigation, domestic, municipal, flood control,[3] and recreational purposes within a designated service area. (D-935, p. 49.) The State Water Board declined to grant direct diversion rights of up to 5,000 cfs along the San Joaquin River, including at the CVP points of diversion in the Delta serving the Contra Costa Canal and the Delta-Mendota Canal. The Board found that water released from Millerton Reservoir for use in the vicinity of Mendota Pool would either be for the satisfaction of prior vested rights under the Exchange Contract or would be water released from storage to provide space in Millerton Reservoir for flood control. Thus, D-935 approved the maximum rate of diversion at Millerton Reservoir of up to 6,500 cfs.

Regarding Reclamation's storage request for up to 2.8 million af, the Board evaluated the combined capacities of Millerton Reservoir, the Madera and Friant-Kern Canals, and diversions between Friant Dam and Gravelly Ford. Taking these capacities to control flows into account, uncontrolled releases were anticipated only in relatively infrequent and short periods of exceptionally high flows into Millerton Reservoir. Reclamation had made no showing of its ability to place these uncontrolled flood releases to beneficial use by direct diversion at points along the San Joaquin River below Friant Dam, including through the Delta Pumps. Therefore, D-935 authorized storage up to 2,210,000 af per annum. (*Id.*, p. 85.)

3.3 2013 Order

In 2013, to facilitate implementation of SJRRP, the State Water Board approved changes to Reclamation's license and permits to provide for long-term instream flow dedication and the rediversion of those flows at specified locations, pursuant to Water Code section 1707. The 2013 Order added preservation and enhancement of fish and wildlife as an authorized purpose of use under the permits and license and added various points of rediversion for Restoration Flows located between Friant Dam and the Merced River, with additional points of rediversion for Restoration Flows at the Banks Pumping Plant and the Jones Pumping Plant.

3.4 2022 Transfer

Reclamation's Change Petitions for transfer have been reviewed by Division staff to ensure that the transfer quantities and season are within the scope of Reclamation's existing rights and that the source of transfer water is authorized under those water rights. The Change Petitions request the temporary addition of these points of rediversion:

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[3] Flood control is not a beneficial use. (SWRCB Decision 1651 at pp. 37-38)

Intake facility for PID, located N. 2,004,071 ft. and E. 6,392,678 ft. California Coordinate System, Zone 3, NAD 83, being within SW ¼ of Section 15, T5S, R8E, M.D.B.&M.

Intake facility for BCID, located N. 2,083,018 ft. and E. 6,327,281 ft. California Coordinate System, Zone 3, NAD 83, being within SE ¼ of Section 33, T2S, R6E, M.D.B.&M.

A total maximum rediversion rate of 40 cfs is proposed for transfer of Restoration Flows at the PID facility. A total maximum rediversion rate of 90 cfs is proposed for transfer of Restoration Flows at the BCID facility, an increase from 65 cfs last year. The maximum combined rediversion rate at PID and BCID will be 105 cfs as this was the rediversion rate analyzed in the San Joaquin River Restoration Program (SJRRP) Programmatic Environmental Impact Statement/Environmental Impact Report (PEIS/R).

Reclamation has filed, and the State Water Board has approved, temporary change petitions to add points of rediversion for Restoration Flows in 2016, 2017, 2018, 2019, 2020, and 2021. The State Water Board understands that the long-term recirculation of Restoration Flows is still under development and not ready for a permanent change.

4.0 IMPLEMENTATION OF THE SETTLEMENT

4.1 Restoration Flows

The historic operation of the Friant Dam resulted in significant portions of the main stem of the San Joaquin River between Friant Dam and the confluence of the Merced River being dry. In 2006, in response to litigation over the impacts of dry reaches on the condition of fish in the San Joaquin River below Friant Dam, the Department of Interior, the Natural Resources Defense Council, and the Friant Contractors reached a Settlement (2006 Stipulation of Settlement in *Natural Resources Defense Council et al. v. Rodgers et al.*) to restore and maintain fish in "good condition" below Friant Dam, including naturally-reproducing and self-sustaining populations of salmon and other fish. In addition, the parties to the Settlement agreed to reduce or avoid adverse water supply impacts to the Friant Contractors that could result from the implementation of interim and Restoration Flows. The Settlement was later authorized by Congress under the San Joaquin River Restoration Settlement Act (Settlement Act), Public Law No. 111-11, § 10001 et seq., 123 Stat. 991, 1349 (2009), and the SJRRP was established to implement the Settlement.

Under the Settlement, full Restoration Flows were required to commence no later than January 1, 2014. The Settlement Act authorizes and directs Reclamation to modify Friant Dam operations to provide Restoration Flows in accordance with the hydrographs in Exhibit B of the Settlement ("Base Flows" for six water year types), plus releases of up to an additional ten percent ("Buffer Flows"), and any additional water acquired from willing sellers. (Settlement, Paragraph 13(a).) Exhibit B allows considerable flexibility for

distribution of Base Flow releases so long as the total volume of Base Flows are not changed within the provided ranges (Spring and Fall Periods). Under Paragraph 13(g), Restoration Flows will be measured at a minimum of six locations between Friant Dam and the confluence of the Merced River. (Settlement, p. 14.) The Settlement provides for the selection of a Restoration Administrator (RA) and the creation of a Technical Advisory Committee (TAC) to assist in implementation. Consistent with Exhibit B, the RA makes recommendations to Reclamation on how the hydrographs are implemented. (Settlement, p. 18.)

The Restoration Flows in Exhibit B, designed to keep fish "in good condition" in the San Joaquin River, include releases from Friant Dam to accommodate water right claims between Friant Dam and Gravelly Ford as well as assumed diversions and seepage losses downstream of Gravelly Ford. Paragraph 13(c) provides that if downstream diversions or seepage losses increase beyond the assumptions in Exhibit B, Reclamation shall release water from Friant Dam such that the volume and timing of Restoration Flows are not impaired; seepage losses downstream of Gravelly Ford that exceed assumptions shall not increase delivery reductions to Friant Contractors. However, to address unexpected seepage losses the Settlement directs Reclamation to, first, use any available, un-storable water not contracted for by the Friant Contractors, and next, use water acquired from willing sellers, including any of that water that has been stored or carried over, until it has been exhausted. Settlement paragraph 13(d) provides:

> [T]he Parties acknowledge that flood control is a primary authorized purpose of Friant Dam, that flood flows may accomplish some or all of the Restoration Flow purposes to the extent consistent with the hydrographs in Exhibit B and the guidelines (developed pursuant to Paragraph 13(j)), and further acknowledge that there may be times when flows called for in the hydrographs in Exhibit B may be exceeded as a result of operation of Friant Dam for flood control purposes. Nothing in this Settlement shall be construed to limit, affect, or interfere with [Reclamation's] ability to carry out such flood control operations.

In addition, the 2020 Restoration Flows Guidelines, Version 2.0 provides:

> In the event that Reclamation determines that it is necessary to release water in excess of the Restoration Flow Schedule for the purposes of flood management, the daily quantities of flow required to meet the Restoration Flow hydrograph shall equal the daily volumes of flow provided in the most recent and adopted Restoration Flow Schedule.

Condition 4 of the 2013 Order incorporates the hydrographs contained in Exhibit B and the measurement provisions under paragraph 13(g). Annual Restoration Flow allocations specified in Exhibit B range from 187.5 thousand af in critical-high years to 672.3 thousand af in wet years. The Restoration Flows articulated in Exhibit B include water for riparian claims in Reach 1 under "holding contracts." No Restoration Flows are allocated in critical-low years; releases in critical-low years are for "holding contracts" only. From 2016 to

2020, actual annual releases of Restoration Flows to the San Joaquin River have ranged from approximately 79,000 af to 165,000 af.[4] Reclamation has filed, and the State Water Board has approved, temporary change petitions to add points of rediversion at PID and BCID for Restoration Flows in 2016, 2017, 2018, 2019, 2020, and 2021. Reported amounts of Restoration Flows rediverted at PID and BCID per approvals in those years were 833 af, 6,710 af, 37,339 af, 8,492 af, 22,653 af, and 670 af, respectively, for a total of approximately 76,700 af.

4.2 Channel and Structural Improvements

To fully achieve the Restoration Goal, the Settlement also calls for a combination of channel and structural modifications along the San Joaquin River below Friant Dam that Reclamation shall diligently pursue, in consultation with the RA and other federal, State, and local agencies, provided that funds are appropriated by Congress or available from non-federal sources for that purpose. (Settlement, Paragraph 9.) Necessary improvements are articulated in Paragraph 11 of the Settlement, with Phase 1 improvements designated as the highest priority to be completed by no later than December 31, 2013. These include completion of Reach 2B-Mendota Pool 4,500 cfs bypass channel, modifications of Sand Slough Control Structure and San Joaquin River headgate for routing 500-4,500 cfs to support fish passage, screening of Arroyo Canal, construction of a fish ladder at Sack Dam, modification of structures in the East Side and Mariposa Bypasses for fish passage, construction of low-flow channel in East Side and Mariposa Bypasses, if necessary, steps to enable deployment of fish barriers at Salt and Mud Sloughs, and Reach 2B channel capacity increase to 4,500 cfs with floodplain and riparian habitat. (*Id.*, Exhibit C.)

As early as 2012, parties to the Settlement acknowledged that some actions, such as the highest priority channel and structural improvement projects were unavoidably behind schedule. A Third-Party Working Draft Framework for Implementation, dated June 19, 2012 (2012 Framework) provided a revised schedule and budget to guide SJRRP activities. The 2012 Framework cites revenue from a variety of federal and state sources including the San Joaquin River Restoration Fund, including revenue from Class 1 and Class 2 water sales, while recognizing that "it is likely that the full Restoration Flows would not be released into the San Joaquin River for some time." (*Id.*) Accordingly, during years when channel capacity constraints or lack of Phase 1 improvements limit the full release of Restoration Flows, the RA makes recommendations in order to determine the quantity of "Unreleased Restoration Flows" consistent with Paragraph 13(i) of the Settlement and section 10009(b)(1)(C) of PL 111-11. Reclamation, in consultation with the RA, banks,

[4] These values are based on what was provided as attachments in compliance with annual reporting requirements pursuant to License 1986 and Permits 11885, 11886, and 11887. They differ from what is posted on Reclamation's website as appendices of reports titled *Restoration Allocation and Default Flow Schedule*. Using values provided in these appendices, the Restoration Flow releases range from 155,000 af to 191,000 af and likely include amounts released to satisfy Holding Contracts upstream of Gravelly Ford.

stores, exchanges, transfers, or sells Unreleased Restoration Flows, with proceeds of those actions deposited into the San Joaquin River Restoration Fund.

The 2012 Framework was subsequently updated in the Revised Framework for Implementation, dated July 2015 (2015 Revised Framework) that established five-year visions to provide "clear, realistic, and accomplishable steps towards meeting the Settlement Goals, and achievable schedules based upon realistic Federal and State of California appropriation levels." (2015 Revised Framework, ES-1.) The 2015 Revised Framework prioritized projects for 1,300 cfs capacity in all reaches of the San Joaquin River within the SJRRP area plus Friant-Kern Capacity Restoration during the 2015-2019 period. (*Id.*, ES-2.) For the 2020-2024 period, projects included financial assistance for groundwater banks, Reach 2B, Arroyo Canal and Sack Dam, Reach 4B Land Acquisition, and Seepage and Levee Projects to allow for Restoration Flows up to 2,500 cfs. The2025-2029 period envisioned completion of Phase 1 Projects, including Seepage and Levee Projects to allow for the full amount of Restoration Flows (4,500 cfs), Chowchilla Bifurcation Structure Modifications, Salt and Mud Slough and Reach 4B Projects. The San Joaquin River Restoration Fund anticipated receiving contributions from the sales of water from Unreleased Restoration Flows and the Recovered Water Account, as well as Friant Division surcharge collections.

More recently, a Funding Constrained Framework for Implementation (2018 Funding Constrained Framework) "assesses the actions that can be accomplished to achieve as much as possible" the Settlement Goals along with necessary recovery of conveyance capacity in the Friant-Kern Canal lost due to subsidence caused by over drafting the underlying groundwater aquifer (Friant Division Improvements). Stage 1 of the 2018 Funding Constrained Framework for the SJRRP consists of a number of major construction activities, including Seepage and Levee Projects providing channel capacity up to 2,500 cfs, projects previously identified as Phase 1 improvements in the Settlement (Mendota Pool Bypass, Mendota Pool Fish Screen, part or all of the Reach 2B Levees, and Modifications to the San Joaquin River side of the Chowchilla Bifurcation Structure) and Friant Division Improvements.

Notwithstanding these significant setbacks and constraints, the SJRRP has re-introduced juvenile spring-run Chinook salmon to the San Joaquin River since 2015 and currently releases upwards of 250,000 fish annually. Smaller numbers of year-old fish, known as yearlings – juveniles that waited a year before migrating out to the ocean and would be found in natural populations – as well as adult fish are being released for experimental purposes. In 2020, the SJRRP website reported that for a second year in a row (only the second year in over 65 years), spring-run Chinook salmon have returned from the ocean to spawn in the river.

The Settlement itself acknowledges that achieving all of the Restoration and Water Management Goals by December 31, 2025 would require a suite of actions including channel and structural improvements, the anticipated release of Restoration Flows as envisioned in Exhibit B, as well as significant funding, planning, and implementation steps. (Settlement, Paragraph 5.) These steps include providing both the benefits to fish passage

and habitat expected from improved flows throughout the SJRRP area and the benefits of actions to avoid or limit water supply impacts to Friant Division Contractors, including the rediversion of Restoration Flows that is the subject of the Change Petitions. As actions and projects envisioned in the Settlement continue to be deferred, as their costs continue to escalate, and as funding continues to be constrained, it appears that the Settlement Goals will likely not be achieved by the end of 2025. The Settlement provides an explicit mechanism to request increases, decreases, or material change in the quantity or timing of the Restoration Flows during the first six months of 2026, taking advantage of the court's retained jurisdiction. (Settlement, Paragraph 20.)

5.0 PROCEDURE

On September 12, 2022, the Division posted public notice of the Change Petitions on the Division's website and sent notice through the State Water Board's LYRIS e-mail notification system. The comment deadline was October 12, 2022. No comments were received. On October 14, 2022, Reclamation consented to November 7, 2022, for a decision on the Change Petitions.

Note that Reclamation had previously submitted petitions on March 11, 2022 to add PID and BCID as points of rediversion of Restoration Flows. Notice of those petitions was issued on March 21, 2022 and comments were submitted by Central Delta Water Agency, South Delta Water Agency, Friant Water Authority, and Friant Division Districts. Reclamation did not respond to those comments based on the subsequent withdrawal of the petitions on June 29, 2022. Due to drought conditions and low storage in the Sacramento/Delta watershed, Exchange Contractors moved forward with a "call of Friant" in 2022 seeking releases of up to 200 TAF at Millerton for diversion at or near Mendota Pool to satisfy the terms of the Exchange Contract. As a result of the heavy demands on Friant's resources, Restoration Flows ceased starting April 16, 2022 and did not resume until October 1, 2022, with anticipated reconnection with the Merced River confluence by November 5, 2022. It is not clear what impact these actions had for management of spring-run Chinook salmon in-river, spring-run Chinook hatchery and the San Joaquin River Trout Hatchery. The petitions subject to this Order were filed in anticipation of the resumption of Restoration Flows.

6.0 THE CHANGE INVOLVES A TRANSFER OR EXCHANGE OF WATER OR WATER RIGHTS

Although the transfer does not reduce water deliveries to CVP contractors, it expands public trust resources by dedicating water to instream use, and thus amounts to a transfer to the public. As such, Reclamation has included new users of the water as follows: 1) the public, through the protection and enhancement of instream beneficial uses held in the public trust, and 2) the California Department of Fish and Wildlife (CDFW), whose mission is to manage California's diverse fish, wildlife, and plant resources, and habitats upon

which they depend, for their ecological values and for their use and enjoyment by the public.

The additional points of rediversion at PID and BCID will provide water for instream beneficial uses in the San Joaquin River downstream of the confluence with the Merced River and enable flows to be captured and recirculated to CVP contractors at times when there is limited or no available capacity at the Delta Pumps. The instream flows would remain protected and removed from use in the downstream water supply. Regardless of whether the transfer/exchange is characterized as a transfer to instream use, or a transfer back to Reclamation from instream uses, this operation can be properly accommodated under Water Code sections 1725 and 1707.

7.0 THE CHANGE INVOLVES WATER THAT WOULD HAVE BEEN CONSUMPTIVELY USED OR STORED

When reviewing a petition for temporary change, Water Code section 1725 provides that a permittee may temporarily change the point of diversion, place of use, or purpose of use through a "transfer or exchange of water or water rights if the transfer would only involve the amount of water that would have been consumptively used or stored" by permittee or licensee in the absence of the proposed temporary change. (Wat. Code, § 1725; see also § 1726 [proposed change must be submitted to Board]; §1011 [conserved water may be transferred].) Water Code section 1725 defines "consumptively used" to mean "the amount of water which has been consumed through use by evapotranspiration, has percolated underground, or has been otherwise removed from use in the downstream water supply as a result of direct diversion."

Restoration Flows from Millerton Reservoir released or bypassed in accordance with the terms and conditions of the 2013 Order approving the SJRRP's dedication of Restoration Flows would have either remained in storage or have been directly diverted at Friant Dam for delivery and consumptive use by the Friant Contractors or used in the CVP service area. Further, in the absence of this temporary change, the Restoration Flows, as authorized in the 2013 Order, would continue to remain under the dominion and control of Reclamation as currently authorized under the subject permits and license. Under D-935, water released from storage in Millerton Reservoir for the purpose of flood management activities remains part of Reclamation's appropriations pursuant to License 1986 and Permits 11885, 11886, and 11887. The Settlement Act specifies which hydrograph in Exhibit B applies according to water year type and the required flows increase in wetter years. If previously stored water is being released to make room in Millerton Reservoir for flood control, the portion of that release that is called for under the Settlement should be tracked, and if possible recaptured downstream for the benefit of Friant contractors. Once previously stored water has been vacated and conditions are such that inflow must pass Friant Dam and the maximum direct diversion of 6,500 cfs is occurring in the Madera and Friant-Kern Canals, deliveries to the canals would be reduced by the amount of Restoration Flows called for, and that amount released below Friant Dam and recaptured downstream for the benefit of Friant contractors to the extent possible.

Reclamation included Water Code section 1707 to its Change Petitions to make clear that the rediversion pursuant to its proposed section 1725 transfer operates in conjunction with and for the purpose of facilitating the dedication of instream flows. The current Change Petitions, by virtue of being filed under sections 1707 and 1725, function as a modification of the 2013 Order. The water subject to the Change Petitions is not water that would be available for lawful use in the downstream water supply.

8.0 NO INJURY TO OTHER LEGAL USERS OF THE WATER

Before approving a petition for temporary change, the State Water Board must find that the temporary change would not injure any legal user of the water during any potential hydrologic condition that the Board determines is likely to occur during the proposed change, through significant changes in water quantity, water quality, timing of diversion or use, consumptive use of the water, or reduction in return flows. (Wat Code, § 1727, subd. (b)(1).) As explained above, in the absence of the Change Petitions, Reclamation would continue to retain dominion and control of all instream flows downstream of the PID and BCID facilities for consumptive use as currently authorized under the subject permits and license and the 2013 Order. The instream flows would remain protected and removed from use in the downstream water supply. Water released from storage is not available to downstream users. (See e.g. *North Kern Water Storage Dist. V. Kern Delta Water Dist.* (2007) 147 Cal.App.4th 555, 570 [When the stored water is released for use, it is not part of the river's natural flow and rediversion of this water does not count toward the appropriator's current allocation of river water]; see *State Water Resources Control Bd. Cases* (2006) 136 Cal.App.4th 674, 737-745 [a riparian or appropriator has no legally protected interest in other appropriators' stored water or in the continuation of releases of stored water].) Similarly, water allowed to pass into the river channel in lieu of being conveyed into and through canals through the exercise of direct diversion rights at Friant Dam would remain protected and removed from use in the downstream water supply.

While likely not an issue this year, injury during flood management activities at Friant Dam would not occur if Restoration Flows were released concurrent with flood releases. The Settlement and the 2013 Order clearly state that the Settlement cannot interfere with the proper exercise of the Exchange Contractor's water rights. Generally, Exchange Contractors' water is delivered from the Sacramento Delta through the Mendota Pool for delivery to Sack Dam. Historically, the only water in Mendota Pool was exchange water provided from the Sacramento-Delta, so it is understandable that close coordination is required if Exchange Contract deliveries are being provided at Mendota Pool at the same time Restoration Flows are being released from Friant Dam to the same location. During flood releases, it may be possible that Reclamation elects to not deliver exchange water from the Delta and instead Exchange Contractors divert water from excess flow from the San Joaquin. This is at the discretion of Reclamation, to the extent consistent with the Purchase and Exchange Contracts and Reclamation's permits and license; but that decision need not necessarily be made at the expense of the Settlement. Restoration

Flows can occur concurrently and should be available for rediversion downstream by the Friant Contractors to the extent possible.

The 2013 Order includes a condition specifically stating that the approved change in no way modifies the obligations and rights under the San Joaquin River Exchange Contract and other contracts. The conditions of that Order remain in force and effect.

9.0 NO UNREASONABLE EFFECT ON FISH, WILDLIFE, OR OTHER INSTREAM BENEFICIAL USES

Before approving a temporary change due to a transfer of water, the State Water Board must find that the proposed change would not unreasonably affect fish, wildlife, or other instream beneficial uses. (Wat. Code, § 1727, subd. (b)(2).) Reclamation provided CDFW and the Central Valley Regional Water Quality Control Board (Regional Water Board) with copies of the petitions in accordance with California Code of Regulations, title 23, section 794, subdivision (c). CDFW and the Regional Water Board did not provide any information regarding potential effects of the proposed changes on water quality, fish, wildlife, and other instream beneficial uses.

The purpose of the SJRRP is to protect instream beneficial uses in the San Joaquin River. Recapture pursuant to the Change Petitions would occur only at screened facilities. The transfer will be subject to provisions of Reclamation's License 1986 and Permits 11885, 11886, and 11887, the 2013 Order, and existing BO's issued by the USFWS and the NMFS under the federal ESA. Consistent with Condition 19 in the 2013 Order, rediversion of SJRRP flows are subject to terms and conditions of D-1641 that require achieving water quality and flow objectives in Tables 1, 2, and 3 (p. 181 – 187) of D-1641. SJRRP flows should not be rediverted or recaptured under this transfer order when terms and conditions of D-1641 are not being met or if real-time monitoring or forecast information suggests that the objectives may not be met (see Condition 11.d p. 149, D-1641). Condition 4 of this order ensures that rediversion of SJRRP flows by PID and BCID will not occur when D-1641 terms and conditions are not being achieved or available monitoring data or forecasts show that terms and conditions will not be achieved.

10.0 COMPLIANCE WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

Reclamation filed the current Change Petitions under Water Code sections 1707 and 1725 et seq. Water Code section 1729 exempts temporary changes involving a transfer of water from the requirements of the California Environmental Quality Act (CEQA). (Pub. Resources Code, § 21000, et seq.) The State Water Board will issue a Notice of Exemption for these Change Petitions.

The 2013 Order approved Instream flow dedication for the SJRRP under Water Code section 1707. Terms and conditions addressing the availability, modification, and recapture of instream flows for implementation of the SJRRP are currently contained in the

subject permits and license. The proposed action involves the addition of two points of rediversion at PID and BCID to the ongoing implementation of the SJRRP pursuant to the 2013 Order and the subject permits and license.

Reclamation has prepared a Final Environmental Assessment (FEA), dated July 2016, covering the recapture of Restoration Flows at PID and/or BCID from March 23, 2016 through March 22, 2017 (*One Year Recapture of San Joaquin River Restoration Flows at Patterson Irrigation District and/or Banta-Carbona Irrigation District*) and issued a Finding of No Significant Impact (FONSI) (Number 16-03-SJRRP) on July 29, 2016. The FEA incorporates the affected environment and the environmental analysis in the SJRRP Programmatic Environmental Impact Statement/Environmental Impact Report (PEIS/R) finalized in July 2012 and for which a corresponding Record of Decision was issued on September 28, 2012. The recapture of Restoration Flows at existing facilities on the lower San Joaquin River is included among actions analyzed at the program-level in the PEIS/R.

The recirculation of recaptured water at existing facilities back to Friant Contractors, using CVP, Department of Water Resources, and private facilities, was covered in the Recirculation of Recaptured Water Year 2013-2017 SJRRP Flows Environmental Assessment (Recirculation EA) which, along with its corresponding Recirculation FONSI, is dated April 2013. Reclamation has determined that at this time none of the conditions underlying the Recirculation EA has changed, and therefore it intends to rely upon the existing Recirculation EA. In addition, Reclamation issued a new FONSI for recapture on February 27, 2018 for the Short-Term Recirculation of Recaptured SJRRP Restoration Flows as analyzed in the Recirculation EA. In October of 2022, Reclamation signed a FONSI to continue the recapture of San Joaquin River Restoration Flows at PID and BCID, as analyzed in the 2016 One Year Recapture of Restoration Flows at PID and/or BCID Environmental Assessment.

Reclamation is in the process of preparing the *Long-Term Recapture and Recirculation of SJRRP Restoration Flows Environmental Impact Statement/Environmental Impact Report (EIS/R)* for the SJRRP that will support the filing of permanent water right change petitions for the subject permitted and licensed applications under Water Code section 1701. Reclamation has indicated it expects to submit the EIS/R for public comment sometime in 2023.

In addition to any obligation the State Water Board may have under CEQA, the Board has an independent obligation to consider the effect of the proposed project on public trust resources and to protect those resources where feasible. (*National Audubon Society v. Superior Court* (1983) 33 Cal.3d 419.) The State Water Board may approve a temporary change due to a transfer of water only if it determines that the proposed temporary change would not unreasonably affect fish, wildlife, or other instream beneficial uses. (Wat. Code, § 1727, subd. (b)(2).) The State Water Board conducted an independent evaluation of impacts to public trust resources concurrent with the Water Code section 1707 and 1725 evaluations. The purpose of the SJRRP is to protect instream beneficial uses in the San Joaquin River. Facilitating rediversion further downstream will enable the restoration flows to better support the instream beneficial uses of the San Joaquin River by maintaining

connectivity below Mendota Pool. Recapture would occur only at screened facilities. The transfer will be subject to provisions of Reclamation's License 1986 and Permits 11885, 11886, and 11887, and BO's issued by the USFWS and the NMFS under the federal ESA, compliance with the 2013 Order, and D-1641.

11.0 WATER CODE SECTION 1707 FINDINGS

For the reasons already explained above, and further articulated in the 2013 Order, the proposed changes meet all of the requirements under Water Code section 1707, subdivision (b).

12.0 ACCOUNTING AND REPORTING

12.1 Accounting Methodology for Restoration Flows

Accounting methods are needed to accurately track the volume of Restoration Flows from the release point at Friant Dam as they are conveyed downstream to each of the proposed points of rediversion. The 2013 Order provides conditions describing required release amounts and related schedules consistent with the Base Flow Restoration Hydrographs in Exhibit B[5] of the 2006 Settlement (Condition 4, 2013 Order); monitoring to track the protected instream flows (Condition 5, 2013 Order); and documentation to be included with annual reports of water diversion that quantify storage and direct diversion at Millerton Reservoir, quantities bypassed or released at Friant Dam for instream use pursuant to Water Code 1707, and amounts of dedicated flows diverted downstream (Condition 20, 2013 Order). While these conditions are generally being satisfied by Reclamation, and much progress has been made by Reclamation in response to requirements included in the 2020 and 2021 Orders temporarily adding points of rediversion at PID and BCID, there remains ambiguity in how water rights are exercised at Friant, and which water rights are being exercised. This affects the availability of Restoration Flows and how Restoration Flows are accounted for from their release at Friant Dam downstream to the points of rediversion identified in the 2013 Order and those identified in this Order.

Reclamation was previously required to submit a proposed accounting method for quantifying SJRRP flows from Friant Dam to all points of rediversion, including at PID and BCID. In June 2020, Reclamation shared an accounting method in the form of a spreadsheet titled, "SJRRP Operations 06-16-2020" (Operations Spreadsheet) and supporting documentation "Restoration Flows Accounting method June 2020" (RF Accounting Method) that quantified SJRRP flows between Friant Dam and "Lower SJR Recapture." Following discussions between Reclamation staff and Board staff, the remaining questions of Board staff were addressed through an amended Operations Spreadsheet proposed by Board staff and provided to Reclamation in October 2020. The

[5] For further details regarding Exhibit B, please see Section 4.1.

data in the Operations Spreadsheet receives ongoing updates and is distributed by email daily via Reclamation's Friant Dam Operations LISTSERV. Over the past year, through coordination between Reclamation and State Water Board staff, this Operations Spreadsheet has also been improved. The latest version of the Operations Spreadsheet submitted to the State Water Board at the time of this Order is titled SJRRP Operations 2021 v.41g.

Information required by Condition 8 of the 2021 Order was largely provided through integration of the required information into the Operations Spreadsheet. This resulted in an improved tracking of water in the system in addition to the benefits that resulted from the collaborative technical exchanges among Reclamation and Board staff.

The information in the Operations Spreadsheet is not yet posted publicly online and contains information that is not otherwise made publicly accessible by Reclamation, including some gaged flow measurements required by Condition 5 of the 2013 Order, and some SJRRP operations information used to calculate Restoration Flow available for rediversion. Condition 8 of this Order requires that this information be posted online in a manner available to the public.

Gaged information in the Operations Spreadsheet includes a compilation of the majority of active gages measuring streamflow in the flow path of the San Joaquin River to the points of rediversion:

A. San Joaquin River controlled and uncontrolled releases from Friant Dam (MIL),
B. San Joaquin River below Friant (SJF),
C. San Joaquin River at Highway 41 (H41),
D. San Joaquin River at Donny Bridge (DNB),
E. San Joaquin River below Highway 145 (SKB),
F. San Joaquin River at Gravelly Ford (GRF),
G. San Joaquin River below Bifurcation (SJB),
H. San Joaquin River near Mendota (MEN),
I. San Joaquin River near Dos Palos (SDP),
J. San Joaquin River near Stevinson (SJS),
K. San Joaquin River at Fremont Ford Bridge (FFB),
L. San Joaquin River above Merced near Newman (SMN),
M. San Joaquin River near Newman (NEW),
N. San Joaquin River near Crows Landing (SCL),
O. San Joaquin River at Patterson Bridge (SJP),
P. San Joaquin River at Maze Road Bridge (MRB),
Q. San Joaquin River near Vernalis (VNS),
R. Gages that monitor Restoration Flow routed through the Chowchilla and Eastside Bypasses:
    i. Chowchilla Bypass at Head (CBP),
    ii. San Joaquin River Nr Washington Road (SWA),
    iii. Eastside Bypass near El Nido (ELN),
    iv. Eastside Bypass below Mariposa Bypass (EBM),

S. Gages that measure accretions tributary to the mainstem San Joaquin River between Friant and the added points of rediversion:
    i. Little Dry Creek (LDC),
    ii. Mud Slough near Gustine (MSG),
    iii. Salt Slough at Highway 165 near Stevinson (SSH),
    iv. Owens Creek below Eastside Canal near Crane Ranch (OCD),
    v. Bear Creek below Eastside Canal (BSD),
    vi. Merced River near Stevinson (MST),
    vii. Tuolumne River at Tuolumne City (TRT),
    viii. Stanislaus River at Koetitz Ranch (KOT).

Recently inactive gages that become active again, and new gages, as they become available, should also be included in the calculation of Restoration Flow in the San Joaquin River. This includes the streamgages at the San Joaquin River at San Mateo (SJN), Cottonwood Creek near Friant (CTK), and Orestimba Creek at River Road near Crows Landing (OCL).

There is at least one active gage that measures contributions to San Joaquin River flow that is not in the Operations Spreadsheet that should be; James Bypass near San Joaquin (JBP).

In addition, there is a set of gages required by Condition 5 of the 2013 Order that are not in the Operations Spreadsheet. These include a gage at the head of Reach 4B1, at river mile 168. The San Joaquin River gage at Washington Avenue is at river mile 168.4, which from the San Joaquin River Flow Atlas, appears to be in Salt Slough, measuring diversion of flow from the San Joaquin River into the Salt Slough Bypass to the Eastside Bypass. A gage is needed at river mile 168 in the San Joaquin River to track protected instream flows in the San Joaquin River, in accordance with Condition 5 of the 2013 Order. There is also a set of gages required to monitor flow conditions “at the Jones Pumping Plant and the Clifton Court Forebay, in coordination with DWR, with provisional monitoring data reported on a daily basis on Reclamation’s website.” Gages proposed to meet this requirement include the following:

T. Tracy Pumping Plant (TRP),
U. Clifton Court Forebay (CLC),
V. Harvey O. Banks Pumping Plant (HRO)

The set of active streamgages measuring flow in the flow path of the San Joaquin River and accretions from water bodies contributing to the streamflow in the flow path of the San Joaquin River, including the gages listed above, and any other active gages corrected through Quality Assurance/Quality Control protocols (referred to as QA/QC data or QA/QC gaging) in the flow path of the San Joaquin River, including through the Chowchilla Bypass, Eastside Bypass, Bear Creek, or any other path through which the San Joaquin River travels between Friant and the added points of rediversion, are referred to in this Order as the “SJRRP Operations flow gages.” Condition 8A of this Order requires that these SJRRP Operations flow gages be added to the Operations Spreadsheet.

There are still accounting ambiguities in the daily data published across gages and corrections to the gaged data following initial measurements. Condition 8B requires a daily tally for Restoration Flow incoming to Millerton Reservoir, in Millerton Reservoir, and released from Millerton Reservoir, as well as Restoration Flow available for rediversion at each point of rediversion, and Restoration Flow flowing past each point of rediversion after rediversions, with added specificity as described below.

Unexpected seepage losses have been ambiguously calculated in the Operations Spreadsheet. The reaches for these loss calculations are not those detailed in the hydrographs of Exhibit B, the Eastside Bypass is not clearly broken out, loss factors inconsistent with the Exhibit B expected seepage losses continue to be applied to the calculations, and the role of Mud and Salt Slough in the loss calculations is unclear. As a result, the provided comparison between expected and unexpected seepage losses is not clear. Furthermore, the time lag calculations applied to reflect the flow travel time between releases at Friant and a given gage are not applied uniformly, particularly to the cumulative unexpected seepage loss and Riparian Release calculations, so it is unclear what the actual volume of unexpected seepage losses were for a given day's release from Friant. Condition 8C requests specific calculations for unexpected losses for each reach downstream of Friant dam and comparison of those losses to Exhibit B.

Tracking flow released from Millerton Reservoir remains an issue. Estimated Restoration Flow at any point in the San Joaquin River is still not relatable to the Restoration Flow released from Millerton Reservoir. Restoration Flow calculated at any one gage is not the lesser of the measured flow at that gage and the incoming Restoration Flow from the nearest upstream gage. Calculations of available Restoration Flow that maintain a mass balance of Restoration Flow from Friant to each point of rediversion continue to require further refinements. Loss factors applied to Restoration Flow are an example of a source of inconsistency between calculating Restoration Flow present in a reach based on measured flows versus what the current accounting methodology indicates should be available. Loss factors are subtracted from Restoration Flow at several points in the river independently of whether these losses are observed at nearby gaging stations. Five cfs is subtracted from Restoration Flows at Gravelly Ford, 10 cfs is subtracted below the Chowchilla Bifurcation, and then another five percent deducted from Restoration Flows at Mendota Pool.

In addition to the application of loss factors, there is no continuity in the estimation of Restoration Flow below Sack Dam and the estimation of Restoration Flow incoming to Mendota Pool. Restoration Flow available below Sack Dam is based on Sack Dam releases, the Restoration Flow Order at Sack Dam[6], gaged flow at the San Joaquin River

[6] The Restoration Flow Order at Sack Dam is one of several Restoration Schedule "synthesis" variables that is manually entered into the Operations Spreadsheet for each day in the Spreadsheet, until the end of the Restoration Year. The Operations

at Dos Palos, Clayton Ranch diversions, and pumping at Central California Irrigation District's Old Sparky. Importantly, the Operations Spreadsheet does not calculate Restoration Flow available below Sack Dam based on Restoration Flow released from Friant nor Restoration Flow incoming or outgoing from Mendota Pool.

Following releases from Sack Dam, Restoration Flow is reduced at the Merced River confluence by an additional 20 percent loss factor to estimate Restoration Flow available for recapture at PID's point of rediversion. These loss factors are assumed to be actual losses, which creates discrepancies when comparing the estimated Restoration Flow to observed flows at gages. These loss factors also sometimes differ from the gain and loss assumptions in Exhibit B in the 2006 Settlement. For example, between gage SJB, in the San Joaquin River below the Chowchilla Bifurcation, and the nearest downstream gage on the California Data Exchange Center (CDEC) is the San Joaquin River near Mendota gage MEN, a 10 cfs loss is applied to Restoration Flow, prior to applying any loss factors to flow other than the Restoration Flow in the San Joaquin River between SJB and MEN, although no losses were assumed in that stretch in Exhibit B, and no losses were measured between gage SJB and gage MEN with the QA/QC gages, real-time gages, or CDEC posted data, anytime in water years 2021 or 2022 when Restoration Flows were released. Condition 8D requires a method for tracking Restoration Flow based only on available San Joaquin River streamflow gages, without any loss factors, but still accommodates the need to forecast losses to Friant releases available for rediversion, at the time of rediversion. Condition 8 also requires specific documentation of a mass balance at Mendota Pool and Sack Dam.

There continues to be a lack of differentiation in the Operations Spreadsheet between real-time measurements and gage corrections following initial measurements (QA/QC gaging) to account for the fact that QA/QC data is not available at the time of rediversion. Furthermore, the QA/QC data and the real-time measurements found in the Operations Spreadsheet can differ from publicly available flow records posted on CDEC. Depending on which of the available gage measurements is used, the measurement of Restoration Flow is different. For example, in water year 2021 when Restoration Flows were released, the CDEC data for the daily average flow in the San Joaquin River above Merced near Newman (gage SMN) had a median difference of 8 cfs from the Operation Spreadsheet's gaged real-time values and 13 cfs from the Operation Spreadsheet's QA/QC data. Condition 8D requires separate accounting of real-time gaging and QA/QC gaging, in addition to Condition 8A that requires data be posted to a publicly available website.

Spreadsheet does not provide context to understand the basis by which the Restoration Flow Order at Sack Dam is calculated. The Restoration Flow Order at Sack Dam could likely be the target Restoration Flow release at Sack Dam, because a Sack Dam Release Error is calculated each day to indicate how much over or under the release at Sack Dam was relative to the prior day's Restoration Flow Order at Sack Dam, and the daily calculation presented as the "Sack Dam Release Balance". Sometimes, the estimation of Restoration Flow below Sack Dam is limited to the prior day's Restoration Flow Order at Sack Dam; for those days the Sack Dam release error is either zero or negative.

In the 2021 Order, Condition 8C required Reclamation to propose a method for incorporating real-time and QA/QC gaging to calculate Restoration Flow and Restoration Flow available for rediversion[7]. Supporting documentation was provided to Reclamation by State Water Board staff that proposed a method incorporating real-time and QA/QC gaging. This Order requires a method that incorporates real-time gages (with any discretionary loss factors selected by Reclamation) and QA/QC gages (that reflect actual losses) to account for Restoration Flows released and amounts available for rediversion. The selection of which data source to use for accounting, i.e., whether to use: real-time data or QA/QC data; data publicly available on CDEC or in the Operations Spreadsheet; or calculated flow with or without the application of loss factors, can cause material differences in estimating Restoration Flow present at numerous points in the system. For example, Restoration Flow available for rediversion calculated with real-time gaged measurements and the loss factor deductions in the Operations Spreadsheet were on average 20 cfs different than Restoration Flow calculated exclusively with the QA/QC gaged data published in the Operations Spreadsheet.

Measured losses to flow between gaging stations continues to be of concern. Measured average losses in San Joaquin River flow in 2021, during the period in which Restoration Flows were being released from Friant, with the QA/QC gaged data, were 190 cfs between Friant Dam and Gravelly Ford, 75 cfs between Gravelly Ford and below the Chowchilla Bifurcation, 15 cfs below the Chowchilla Bifurcation to below Sack Dam, 14 cfs below Sack Dam to Washington Avenue, and 16 cfs in the Eastside Bypass between Sand Slough and the Mariposa Bypass. Condition 8D requires a daily tally of Restoration Flow allocation released and in reserve, at Millerton, at the Merced River confluence, and at the PID and BCID points of rediversion.

The reason and location for losses, whether they are actual (measured) losses, or losses due to accounting choices, are the focus of Order Conditions 8C, 8D, and 8E. Strengthening the accounting of Restoration Flow, without negotiated losses, with calibrated gages, in Conditions 8B and 8D, and separating it out from the accounting, in real-time, of Restoration Flow available for rediversion, allows for application of appropriate loss factors to predict and communicate anticipated Restoration Flow available for rediversion, without affecting the accountability and transparency of tracking Restoration Flow. Conditions 8C and 8E support Condition 8D. Integrating diversions by other water right holders and claimants into the accounting is necessary to determine Restoration Flow

[7] The distinction between Restoration Flow and Restoration Flow available for rediversion is that the latter is calculated using real-time gages to inform operational decisions at PID, BCID, and other points of rediversion for how much is available to redivert, in real-time and the former is based on Restoration Flow for accounting purposes, including the calculation of actual losses of Restoration Flow measured along the San Joaquin River's flow path. Reclamation currently does not distinguish between Restoration Flow and Restoration Flow available for rediversion; the same accounting method is used for both purposes, with real-time gaged data replaced by QA/QC data as it becomes available.

available for rediversion that reflects expected losses and unexpected seepage losses and provides insight into the location of Restoration Flow losses.

In addition to these measurable losses and the losses resulting from accounting choices that affect the availability of Restoration Flow, there have also been shifts in the timing and magnitude of the availability of Restoration Flows released from Friant. These shifts can affect the availability of Restoration Flow available for rediversion, sometimes by hundreds of thousands of acre-feet. Shifting of Friant releases from the expected 2006 Settlement Exhibit B Base Flow Restoration Hydrographs have deviated by thousands of acre-feet, for almost all hydrograph components since 2016.

In general, Friant releases to the San Joaquin River during the Summer Base Flow were at least tens of thousands, if not hundreds of thousands, of acre-feet *higher* than Exhibit B Base Flow releases; Friant releases to the San Joaquin River during the Spring Rise and Pulse Flow were at least tens of thousands, if not hundreds of thousands, of acre-feet *lower* than Exhibit B Base Flow releases; and with the data provided in the Operations Spreadsheet, Riparian releases were always higher than the Riparian releases anticipated by Exhibit B each year. There are also consistent Unreleased Restoration Flows, likely as a result of these shifts from Exhibit B and the flows described in the 2013 Order, which can be sold, exchanged, transferred, banked, or stored. Quantification of uncontrolled excess flow is still under review, as are any inconsistencies among Friant Release estimations from different data sources; both of which could also affect the availability of Restoration Flow. Conditions 8F and 8G are included in this Order to track Unreleased Restoration Flow and shifts in releases from those described in Exhibit B and the 2013 Order to better track the amounts of Restoration Flow available for rediversion and the amounts of Unreleased Restoration Flows.

The estimation of Restoration Flow available for rediversion also needs to be conditioned on compliance with each of the Order terms, and Restoration Flow must account for all diversions and rediversions, which has been addressed through the inclusion of Condition 8H.

While much progress has been made in refining the Operations Spreadsheet through the collaborative efforts of Reclamation and State Water Board staff, the conditions included in this Order will further resolve remaining ambiguities in how Restoration Flow is tracked, how losses of Restoration Flow are documented and characterized, and how rediversions are conducted in conformance with the requirements of this Order and the 2013 Order.

12.2 Measurement Methodology for Diversion and Rediversion

Comments received on previous Change Petitions brought to light ambiguities in how and when Reclamation exercises its water rights at Friant Dam, and when Friant Dam is serving as a point of diversion for other right holders such as the Exchange Contractors. Determining when Restoration Flows are released from Friant Dam, and when releases from Friant are for the purpose of other beneficial uses downstream of Friant Dam, including pursuant to the flood management releases described in D-935, are necessary

for evaluating when flows are available for rediversion at PID and BCID. A proper accounting of when and how Reclamation's License 1986 and Permits 11885, 11886, and 11887 are being exercised is also important context for evaluating the findings described in this Order. Therefore, Condition 9 has been added to this order to ensure Reclamation and the State Water Board develop a common understanding of Reclamation's exercise of its license, permits, and any other rights that are being exercised at Friant.

13.0 ADDITIONAL PROPOSED TERMS

13.1 Net Delta Outflow Index

The Net Delta Outflow Index (NDOI) is a water balance equation used for implementation of certain D-1641 provisions. Net Delta outflow is determined using measured inflows of major rivers and streams, exports by the major water projects, and estimates of other water agencies' diversions, channel depletions, and precipitation. Without the proposed term, Restoration Flows measured at Vernalis would be included as inflow but not subtracted as export, even though it is subsequently rediverted at BCID. This would incorrectly increase the calculated Delta outflow. This can be resolved by subtracting BCID flows from the inflow part of the D-1641 equation. Accordingly, Condition 6 has been added to the Order to reflect the modification to the NDOI calculation for this transfer.

13.2 San Joaquin River Inflow to Export Ratio

D-1641, Table 3, footnote 18 limits the combined exports by the Banks and Jones Pumping Plants to the greater of 1,500 cfs or the three-day running average San Joaquin River flow at Vernalis from April 15 to May 15, subject to minor variation in the start and end of the period approved through consultation with state and federal fish agencies to coincide with the spring pulse flow. Without modification, Restoration Flows measured at Vernalis would be included in the calculation of San Joaquin River inflow, even if rediverted at BCID. Therefore, Restoration Flows rediverted at BCID must be subtracted from San Joaquin River flow during the spring pulse flow period. Accordingly, Condition 6 also reflects the modification of the SJR inflow to combined export ratio noted above.

13.3 Clarification Regarding Points of Rediversion Authorization

In 2018, a previous and separate correspondence brought to light confusion regarding the scope of the 2013 Order authorizing new points of rediversion in Permits 11885, 11886, and 11887 and License 1986. Upon adoption of the 2013 Order, a column of new points of rediversion was added to Reclamation's permits and license that included, inter alia, Canal Intakes Off Mendota Dam, and the Jones and Banks Pumping Plants. Consistent with the 2013 Order, the added points of rediversion are authorized solely for the purpose of implementing the Settlement Agreement and recirculating Restoration Flows. This Order includes a term that adds a minor amendment to this provision to ensure that there is no ambiguity on this point.

14.0 STATE WATER BOARD'S DELEGATION OF AUTHORITY

On June 5, 2012, the State Water Board adopted Resolution 2012-0029, delegating to the Deputy Director for Water Rights the authority to act on petitions for temporary change if the State Water Board does not hold a hearing. This Order is adopted pursuant to the delegation of authority in Section 4.4.2 of Resolution 2012-0029 and the Deputy Director for Water Rights redelegation of authority dated June 6, 2022.

15.0 CONCLUSIONS

The State Water Board has adequate information in its files to make the evaluation required by Water Code sections 1707 and 1727.

The State Water Board concludes that, based on the available information:

1. The proposed transfer involves only an amount of water that would have been consumptively used or stored in the absence of the temporary change.

2. The proposed temporary change will not increase the amount of water Reclamation is entitled to use.

3. The proposed temporary change will not injure any legal user of the water.

4. The proposed temporary change will not have an unreasonable effect upon fish, wildlife, or other instream beneficial uses.

5. The proposed temporary change otherwise meets the requirements of Division 2 of the Water Code.

ORDER

NOW, THEREFORE, IT IS ORDERED that the petitions filed for temporary change for the transfer/exchange of instream flow dedication of up to 45,000 af of water under License 1986 and Permits 11885, 11886, and 11887 are approved.

All existing terms and conditions of the water rights remain in effect, including the terms and conditions of the 2013 Order, except as temporarily amended by the following provisions:

1. The totality of the transferred water will be limited to Restoration Flows from: (a) water released from Millerton Reservoir that was previously collected to storage and that subsequently remains under Reclamation's dominion and control, and (b) water taken, and subsequently remaining, under dominion and control through the exercise of direct diversion rights at Friant Dam but allowed to pass into the river

channel in lieu of being conveyed into and through canals.

2. The points of rediversion for Restoration Flows under Reclamation's License 1986 and Permits 11885, 11886, and 11887 et al. are temporarily amended to add:

   Intake Facility for Patterson Irrigation District (PID), located N 2,004,071 ft and E 6,392,678 ft California Coordinate System, Zone 3, NAD 83, being within SW ¼ of Section 15, T5S, R8E, M.D.B.&M.

   Intake Facility for Banta-Carbona Irrigation District (BCID), located N 2,083,018 ft and E 6,327,281 ft California Coordinate System, Zone 3, NAD 83, being within SE ¼ of Section 33, T2S, R6E, M.D.B.&M.

3. The maximum rediversion rate at PID will be up to 40 cfs and the maximum rediversion rate at BCID will be up to 90 cfs. The combined maximum rediversion rate at PID and BCID will be up to 105 cfs. A maximum of 45,000 af of Restoration Flows may be rediverted at PID and BCID facilities during the transfer period.

4. Rediversion of water at BCID and PID is subject to the same requirements as pumping of SJRRP flows at the Jones Pumping Plant and Banks Pumping Plant provided in Condition 19 of the 2013 Order, and any future State Water Board order or decision implementing Bay-Delta water quality objectives. Condition 19 of the 2013 Order states that pumping of SJRRP flows is subject to compliance with water quality and flow objectives in Water Rights Decision 1641 Tables 1, 2, and 3 (D-1641, pp. 181 – 187). D-1641 also requires immediate reporting to the State Water Board if water quality and flow objectives are not being achieved or available information indicates that water quality and flow objectives may not be achieved (Id., Term 11.d p. 150). Consistent with Condition 19 of the 2013 Order, rediversion of SJRRP water at BCID and PID is not authorized if terms and conditions of D-1641 are not being achieved or are anticipated to not be achieved based on available information.

5. Rediversion of water is subject to compliance by Reclamation with all existing Biological Opinions and court orders and any other conditions imposed by other regulatory agencies applicable to these operations.

6. During the times that water is being rediverted at the BCID facility pursuant to this Order, San Joaquin River flows used to inform NDOI conditions as well as the three-day running average of San Joaquin River flows during the April-May pulse flow period in D-1641 will be reduced by the quantity of Restoration Flows rediverted at the BCID facility pursuant to this temporary transfer order. Reclamation shall notify the Deputy Director for Water Rights three days in advance of commencement of rediversions at BCID and provide planned rate and duration of rediversions.

7. Rediversion of Restoration Flows at BCID and PID intake facilities shall only occur at

times when rediversion is not possible at the Delta Pumps due to insufficient capacity or other constraints. Prior to commencing any rediversions at BCID or PID facilities, Reclamation shall provide evidence documenting insufficient capacity or other constraints exist at the Delta Pumps to the Deputy Director for Water Rights.

8. Within 120 days of the date of Order issuance, Reclamation shall submit updated accounting documentation, in the form of a spreadsheet, made available on a publicly accessible website, for quantifying SJRRP flows into and from Friant Dam to each point of rediversion, including at PID and at BCID, referred to as the Operations Spreadsheet, with supporting written documentation. The Operations Spreadsheet shall:

   A. Include the gages identified in Condition 5 of the 2013 Order, as well as all other active gages in the flow path of the San Joaquin River between Friant and the added points of rediversion as well as all gages that measure the flow of any water body contributing to river flow to the flow path of the San Joaquin River, as described in more detail in Section 12.1 as the set of "SJRRP Operations flow gages" to measure, monitor, and calculate Restoration Flow.

   B. Include a daily tally for Restoration Flow incoming to Millerton Reservoir, in Millerton Reservoir, and released from Millerton Reservoir, as well as Restoration Flow available for rediversion at each point of rediversion, and Restoration Flow flowing past each point of rediversion after rediversions;

   C. Calculate unexpected seepage losses in exceedance of Exhibit B for each reach downstream of Friant Dam to the confluence with the Merced River. The calculations shall use appropriately time-lagged Quality Assurance/Quality Control (QA/QC) flow measurements, without adding unmeasured or Exhibit B gains or losses, or measured gains. The calculations shall also include unexpected seepage losses in the routing of the San Joaquin River through Sand Slough to the Eastside Bypass and Bear Creek before the Restoration Flows return to the mainstem of the San Joaquin River, should the routing of flows through the Eastside Bypass persist;

   D. Include real-time gaging and QA/QC gaging, with appropriate time lags and interpolation of missing measurements such that there is an estimate of the Restoration Flow allocation that has been released to the San Joaquin River to date, the Restoration Flow allocation that has not been released to date, and the amount and proportion of the released Restoration Flow above the Merced River confluence, and at PID and BCID's points of rediversion, based on QA/QC gaged measurements, and then, a separate estimate of Restoration Flow available for rediversion, at each point of rediversion, based on any loss factors Reclamation uses to predict Restoration Flow available for rediversion, in real-time, with the gaged flow measurements available at the time of the rediversion;

E. Include the daily diversion of San Joaquin River flow, and if applicable, San Joaquin River Restoration Flow, reported by each water right holder and claimant required to telemeter diversion measurement information, as available and required by SB 88,[8] and deduct these daily diversions from the ambient and/or Restoration Flow, as it occurred, including for each point of diversion in the flow path of the San Joaquin River for Primary Owners (with Water Right ID):

i. Friant Power Authority (A031186, A030593, A025882),
ii. United States Bureau of Reclamation (A000023, A000234),
iii. Madera-Chowchilla Water and Power Authority (A027456),
iv. Orange Cove Irrigation District (A028552),
v. Columbia Canal Company (S001073),
vi. San Luis Canal Company (S001074),
vii. Firebaugh Canal Water District (S001098),
viii. Central California Irrigation District (S000477),
ix. Wonderful Nut Orchards LLC (S022154, S022534, S022153),
x. SJR Farming (S023037),
xi. Should restoration flows continue to be routed through the Eastside Bypass: Sweetwater Ridge LLC (S022180), and
xii. any other water right with a point of diversion or rediversion, in the San Joaquin River between Friant Dam and the points of rediversion of Restoration Flow, including at Mendota Pool;

F. Include a daily total of Unreleased Restoration Flow volume available to supplement Restoration Flow and the Unreleased Restoration Flow volume removed from the allocation;

G. Document shifts from the release schedule of the applicable Base Flow Restoration Hydrographs in Exhibit B of the 2006 Settlement, including the volume of water that was shifted and the hydrograph component to which it was shifted, and any resulting Unreleased Restoration Flows; and

H. Flag when availability of flows for rediversion are affected by the conditions of this Order, including NDOI conditions and the three-day running average on San Joaquin River flows during the April-May pulse flow period required in D-1641 described in Condition 6 of the 2021 Order, and when rediversion is not possible at the Delta pumps due to insufficient capacity or other constraints.

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[8] Cal. Code Regs., tit. 23, §§ 931-938 [measurement and reporting requirements for water diversions over 10 acre-feet per year]. Section 933(b)(4) includes telemetry requirements for large diversions (10,000 acre-feet or more annually, storage capacity over 10,000 acre-feet, over 30 cfs at any time between June 1 and September 30). Telemetered data shall be provided via a public website that displays the data on at least a daily basis, and updated weekly at a minimum.

Documentation supporting the Spreadsheet shall also:

i. Explain the expected diversion volume of the Holding Contracts for each Exhibit B Hydrograph Component, with a characterization of each of the Reach 1 diverters, and any constraints that could alter the delivery of these demands.

ii. Explain how the natural flow versus other sources of flow incoming to Millerton Reservoir are calculated, and the relationship between these incoming flow calculations and the determination of daily Restoration Flow, including Restoration Flow available for rediversion.

iii. Explain any instances for which the California Data Exchange Center's posted gaged data differs from Reclamation's QA/QC gaged data in the Operations Spreadsheet.

iv. Explain the routing plan to recommit the San Joaquin River flow to its natural flow path, or whether there is a short- or long-term plan for sustained diversion of the San Joaquin River through the Eastside Bypass.

v. Provide an accounting of flood flows in the SJRRP, including Restoration Flow Allocations and releases of Restoration Flows that are dedicated instream, developed in collaboration with the Central Valley Flood Protection Board, Lower San Joaquin Levee District, and any other affected parties.

vi. Provide a mass balance of Restoration Flow and Restoration Flow available for rediversion between the Chowchilla Bifurcation and below Sack Dam, based on gaged data, such that Restoration Flow incoming to and outgoing from Mendota Pool and Sack Dam is limited by Restoration Flow released from Friant; measure and report the amount recaptured at Mendota Pool, and include a calculation of other flows entering and leaving Mendota Pool and Sack Dam via the flow path of the San Joaquin River that is not Restoration Flow; and, to the extent that the Restoration Flow Order at Sack Dam is used to calculate Restoration Flow available for rediversion, demonstrate how the Restoration Flow Order at Sack Dam is calculated and determined. The Operations Spreadsheet may be used to provide any of the information required.

The Operations Spreadsheet and documentation submitted will be subject to acceptance by the Deputy Director for Water Rights and any revisions requested by the Deputy Director for Water Rights shall be addressed by Reclamation within

30 days of receipt. Reclamation may request, and the Deputy Director for Water Rights may approve, extensions of time to develop and submit information required under this condition.

9. Within 120 days of the date of this Order, Reclamation shall submit to the Deputy Director for Water Rights an accounting method integrated into the Operations Spreadsheet of daily values that quantify the amounts of storage and diversion, including rediversion, pursuant to Reclamation's water rights at Friant Dam, and quantify the amounts diverted, including rediverted, and stored at Millerton Reservoir pursuant to other right holders at Friant Dam, and quantify the daily amounts of Restoration Flow stored, released, lost to unexpected seepage losses, diverted, including rediverted, or diverted as Unreleased Restoration Flow at Friant Dam. The method will also characterize the purpose of releases from Friant Dam into the San Joaquin River and the water right and place of use associated with each release that is made for the purpose of subsequent beneficial use. The method shall characterize which flows coming from Friant Dam are releases of water previously stored at Friant and which are releases of natural flow, abandoned flow, or any other type of flows. The method and its implementation into the Spreadsheet are subject to approval by the Deputy Director for Water Rights and Reclamation shall submit requested revisions within 30 days of receipt.

10. Within 60 days of the date of this Order, provide a summary of the amount of water delivered to the Exchange Contractors from the San Joaquin River in 2022, and what, if any, impact this had on the management of the cold-water pool at Millerton, Chinook salmon in-river, spring-run Chinook hatchery, and the San Joaquin River Trout Hatchery. Explain any operational strategy or coordination for releases of Restoration Flow and Exchange Contractor deliveries when/ if substitute water becomes unavailable in the Delta in 2023.

11. Reclamation is responsible for providing the Deputy Director for Water Rights a monthly report describing the transfer of water pursuant to this Order until such time as the transfer has been completed. The report shall be submitted by the last day of each month and no rediversion is authorized in subsequent months in the absence of submitted reports for the prior months. The report shall include:

    A. The average rate of water rediverted and volume of water rediverted each day at PID and BCID facilities pursuant to this Order and amounts diverted pursuant to PID and BCID's other bases of right.

    B. Documentation of insufficient capacity or other constraints that existed at the Delta Pumps that was provided pursuant to Condition 7, descriptions of whether Conditions 1, 4, 5, or 7 constrained rediversions, and whether Reclamation anticipates any of these conditions will constrain rediversions in the subsequent month.

    C. Notification of whether any daily amount of Restoration Flow below any reach of

the SJRRP downstream of Friant Dam during the prior month was lower than the Restoration Flow amount identified in Reclamation's daily coordination calls per compliance with Condition 13 of the 2013 Order. Documentation of flows lower than those identified in the daily coordination calls shall be included in the Operations Spreadsheet developed pursuant to Condition 8.

D. A copy of the Operations Spreadsheet developed pursuant to Condition 8 that includes data for the prior month. The Operations Spreadsheet may be used to provide any of the information required pursuant to this condition.

If the above required daily values of rate and volume of water rediverted is in the possession of PID and BCID and has not been provided to Reclamation in time for inclusion in a monthly or annual report, Reclamation shall provide the information to the Deputy Director for Water Rights within 10 days of receipt in the form of a supplemental monthly report and shall specify when the information was received.

12. Pursuant to Water Code Sections 100 and 275 and the common law public trust doctrine, all rights and privileges under this transfer and temporary change Order, including method of diversion, method of use, and quantity of water diverted, are subject to the continuing authority of the State Water Board in accordance with law and in the interest of the public welfare to protect public trust uses and to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of said water.

The continuing authority of the State Water Board also may be exercised by imposing specific requirements over and above those contained in this Order to minimize waste of water and to meet reasonable water requirements without unreasonable draft on the source.

13. This Order does not authorize any act which results in the taking of a threatened or endangered species or any act which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish & G. Code, §§ 2050 to 2097) or the federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). If a "take" will result from any act authorized under this temporary transfer, Reclamation shall obtain authorization for an incidental "take" permit prior to construction or operation. Reclamation shall be responsible for meeting all requirements of the applicable Endangered Species Act for the temporary transfer authorized under this Order.

14. The State Water Board reserves authority to supervise the transfer, exchange, and use of water under this Order, and to coordinate or modify terms and conditions for the protection of vested rights, fish, wildlife, instream beneficial uses, and the public interest as future conditions may warrant.

15. The footnote to the table in item 2. Location of Point of Diversion for Permit 11885, Permit 11886, and Permit 11887 is amended to read as follows: "* The points of

rediversion are for recapture of SJRRP flows that are either: (a) water released from storage, or (b) water previously diverted at Friant Dam that remains under the dominion and control of Reclamation from Friant Dam to the points of rediversion, pursuant to Water Code section 1707."

The footnote to the table in item 2. Location of Point of Diversion for License 1986 is amended to read as follows: "* The points of rediversion are for recapture of SJRRP flows water previously diverted at Friant Dam that remains under the dominion and control of Reclamation from Friant Dam to the points of rediversion pursuant to Water Code section 1707."

STATE WATER RESOURCES CONTROL BOARD

ORIGINAL SIGNED BY

Erik Ekdahl, Deputy Director
Division of Water Rights

Dated: November 7, 2022