



Central Valley Regional Water Quality Control Board

5 December 2017

Jacob McQuirk
Department of Water Resources
1416 Ninth Street, Room 215-23
Sacramento, CA 94236-0001

CERTIFIED MAIL
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CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION AND ORDER FOR THE SOUTH DELTA TEMPORARY BARRIERS PROJECT, SAN JOAQUIN COUNTY (WDID#5B39CR00280)

Enclosed please find a Clean Water Act Section 401 Water Quality Certification and Order, authorized by Central Valley Regional Water Quality Control Board Executive Officer, Pamela C. Creedon. This Order is issued to the Department of Water Resources for the South Delta Temporary Barriers Project (Project). Attachments A through F of the Enclosure are also part of the Order.

This Order is issued in response to an application submitted by the Department of Water Resources for proposed Project discharges to waters of the state, to ensure that the water quality standards for all waters of the state impacted by the Project are met. You may proceed with your Project according to the terms and conditions of the enclosed Order.

Please review your Order carefully to ensure that you understand all aspects of the Order. Note that this Order requires reporting and notification. Requirements for the content of the reporting and notification requirements are detailed in Attachment F, including specifications for photo and map documentation during the Project. Written reports and notifications must be submitted using the Reporting and Notification Cover Sheet located in Attachment F, which must be signed by the Permittee or an authorized representative.

These reports, notifications, and other submissions must be submitted in a searchable Portable Document Format (PDF). Documents less than 50 MB must be emailed to: centralvalleysacramento@waterboards.ca.gov. In the subject line of the email, include the Central Valley Water Board Contact, Project name, and WDID. Documents that are 50 MB or larger must be transferred to a disk and mailed to the Central Valley Water Board Contact.

If you require further assistance, please contact me by phone at (916) 464-4644 or by email at Stephanie.Tadlock@waterboards.ca.gov. You may also contact Elizabeth Lee, Unit Supervisor, by phone at (916) 464-4787 or by email at Elizabeth.Lee@waterboards.ca.gov.

Original Signed By:

Stephanie Tadlock
Environmental Scientist
401 Water Quality Certification Unit

Enclosures (1): Order for South Delta Barriers Project

cc: [Via email only] (w/ enclosure):

Sam Ziegler (Electronic Copy Only)
United States Environmental Protection Agency
Ziegler.Sam@epa.gov

California Department of Fish and Wildlife, Region 3
AskBDR@wildlife.ca.gov

CWA Section 401 WQC Program
Division of Water Quality
State Water Resources Control Board
Stateboard401@waterboards.ca.gov

Elizabeth M. Lee
Unit Supervisor
Central Valley Regional Water Quality Control Board, Sacramento
Elizabeth.Lee@waterboards.ca.gov

cc: (w/ enclosure):

Chandra Browne (SPK-2000-00696, SPK-2001-00121)
United States Army Corps of Engineers
Sacramento District Headquarters
1325 J Street, Room 1350
Sacramento, CA 95814-2922

Bill Jennings
CA Sportfishing Protection Alliance
3536 Rainier Avenue
Stockton, CA 95204



Central Valley Regional Water Quality Control Board

CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION AND ORDER

Effective Date: 5 December 2017
Expiration Date: 4 December 2022
Program Type: Fill/Excavation

Reg. Meas. ID: 410386
Place ID: 830110
WDID: 5B39CR00280
USACOE#: SPK-2000-00696
SPK-2001-00121

Project Type: Dams

Project: South Delta Temporary Barriers Project (Project)

Applicant: Department of Water Resources
Applicant Contact: Jacob McQuirk, P.E.
1416 Ninth Street, Room 215-23
Sacramento, CA 94236-0001
Phone: (916) 653-9883
Email: Jacob.McQuirk@water.ca.gov

Water Board Staff: Stephanie Tadlock
Environmental Scientist
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670
Phone: (916) 464-4644
Email: Stephanie.Tadlock@waterboards.ca.gov

Water Board Contact Person:

If you have any questions, please call Central Valley Regional Water Quality Control Board (Central Valley Water Board) Staff listed above or (916) 464-3291 and ask to speak with the Water Quality Certification Unit Supervisor.

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I. Order

This Clean Water Act (CWA) section 401 Water Quality Certification action and Order (Order) is issued at the request of the Department of Water Resources (herein after Permittee) for the Project. This Order is for the purpose described in the application and supplemental information submitted by the Permittee. The application was received on 22 November 2016. The application was deemed complete on 16 December 2016.

II. Public Notice

The Central Valley Water Board provided public notice of the application pursuant to California Code of Regulations, title 23, section 3858 from 2 December 2016 to 23 December 2016. The Central Valley Water Board did not receive any comments during the comment period.

III. Project Purpose

The Project reduces adverse water level impacts (i.e. minimum tide elevations) caused by the State Water Project and Central Valley Project export pumping on local agricultural diverters within the South Delta Water Agency.

IV. Project Description

The 2017-2022 Temporary Barriers Project (TBP) will consist of annual construction, operation, and removal of the Middle River (MR), Old River near Tracy (ORT), Grant Line Canal (GLC), and Head of Old River (HOR) spring and fall rock barriers.

V. Project Location

Address: Middle River, Old River, and Grantline Canal in the Delta
County: San Joaquin
Nearest City: Tracy

| | |
|----------------------|--|
| Middle River - | Section 36, Township 1 North, Range 4 East, MDB&M Latitude: 37.8857°N and Longitude: 121.4822°W The MR barrier is located about a half mile south of the confluence of Middle River, Trapper Slough, and North Canal. |
| Old River at Tracy - | Section 28, Township 1 South, Range 4 East, MDB&M Latitude: 37.8103°N and Longitude: 121.5428°W The ORT barrier is located near the Central Valley Project's (CVP) Tracy fish screen facility on Old River, approximately 0.5 miles east of the CVP's inlet. |
| Grant Line Canal - | Section 29, Township 1 South, Range 5 East, MDB&M Latitude: 37.8199°N and Longitude: 121.4483°W The GLC barrier is located on Grant Line Canal east of Tracy Boulevard approximately four miles north of the city of Tracy. |
| Head of Old River - | Section 32, Township 1 South, Range 6 East, MDB&M Latitude: 37.8078°N and Longitude: 121.3307°W The HOR barrier is located at the divergence of Old River from the San Joaquin River near the City of Lathrop. |

A map showing the Project location are found in Attachment A of this Order.

VI. Project Impact and Receiving Waters Information

The Project is located within the jurisdiction of the Central Valley Water Board. Receiving waters and groundwater potentially impacted by this Project are protected in accordance with the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition, revised April 2016 (Basin Plan) The Basin Plan and other plans and policies may be accessed online at: http://www.waterboards.ca.gov/plans_policies/. The Basin Plan includes water quality standards, which consist of existing and potential beneficial uses of waters of the state, water quality objectives to protect those uses, and the state and federal antidegradation policies.

It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.

Project impact and receiving waters information can be found in Table 1 of Attachment B, which shows the receiving waters and beneficial uses of waters of the state impacted by the Project. Individual impact location and quantity is shown in Table 2 of Attachment B.

VII. Description of Direct Impacts to Waters of the State

| Table 1: Barrier Installation and Removal Duration | | |
|---|--|-----------------------------|
| Barrier Locations | Approximate Number of Construction Days¹ | |
| | Spring Barrier Installation | Fall Barrier Removal |
| Old River at Tracy (ORT) | 20 working days | 20 working days |
| Middle River (MR)² | 5 working days | 5 working days |
| Grant Line Canal (GLC)² | 24 working days | 21 working days |
| Head of Old River – Spring Barrier | 24 working days | 24 working days |
| Head of Old River – Fall Barrier | 18 working days | 18 working days |

¹ Barrier construction schedules may be impacted by extreme weather and tide and river flow conditions.

² The working days for the installation and removal of the barriers do not include replacement of the MR and GLC culverts. Additional working days for the MR and GLC culvert replacements are 7 and 12 days respectively.

General Description of Barrier Construction

The barriers have been placed within the channels of the Middle and Old Rivers, and Grant Line Canal annually since 1998. Previous permitted activities have been reviewed and evaluated by the Central Valley Water Board, United States Army Corps of Engineers, United States Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Wildlife. Construction of the barriers includes placing rock barriers in the spring within the channels of the Middle River (MR), Old River Tracy (ORT), Grant Line Canal (GLC), and Head of Old River (HOR). Each spring, heavy construction equipment will be mobilized to move stockpiled rock from storage locations into the channel to form the barriers. Large front-end loaders, dump trucks, off-road haulers, cranes, long reach excavators, and drag lines will be used to move and place the materials. Typically, machinery is operated from one or both banks of the channel to place the rock, as well as any additional materials such as culverts, articulating concrete mats, or other structures. Depending on the individual design of each barrier, 48-inch diameter steel pipes used as culverts are placed by a crane after the gravel pad of the barrier is constructed. As the rock barrier is extended into the channel, machinery utilizes the crown of the barrier to move farther into the channel on top of the barrier to place additional materials. Each of the barriers are adequately marked with

navigational aids and warning signs approved for placement by the U.S. Coast Guard (Private Aids Permit #s 2832-2839).

Description of Specific Barrier Construction, Operation, and Maintenance

Old River at Tracy (ORT) Barrier

The ORT barrier allows tidal flows to enter the channel upstream of the barrier by overtopping the weir crest and flowing through the submerged culverts. The tidal flow is then partially retained during the ebb tide by the barrier elevation and the closure of tidal flap-gates on the upstream side of each culvert.

Each year construction of the ORT barrier begins with placement of a rock and gravel pad followed by the placement of three metal culvert frames each containing three 48-inch diameter culverts (nine culverts total) with flap-gates on the pad. The culverts are then covered with approximately 5,000 cubic yards of rock to form a 250-foot long berm that is 60 feet wide at its base (0.34 acre). The center of the barrier has a 75-foot wide weir with a crest elevation of 4.4 feet based on the North American Vertical Datum of 1988 (NAVD88). At the ORT barrier, quarry rock is stockpiled approximately a half mile upstream of the barrier site on the inland side of the levee crown.

Beneath the weir are the 9 culverts, each 60 feet long and 1-foot apart, with tidally activated flap-gates on the upstream ends. A 10-foot wide notch at elevation 2.6 (NAVD88) is constructed each fall by 15 September to allow adult salmon passage.

During summer months, some of the flap gates may be tied to the open position to improve circulation in this area. A temporary boat ramp will be constructed with riprap at the base, followed by crushed rock, and topped with articulated concrete mats. Because much of the boat ramp structure will be underwater, divers will aid in the positioning of the concrete mats.

Middle River (MR) Barrier

The MR barrier is a rock barrier constructed with a center weir section that allows tidal flows to enter the Middle River upstream of the barrier by overtopping the weir crest and flowing through submerged culverts. The tidal flow is retained behind the barrier in part during the ebb tide by the barrier elevation and the closure of the flap-gates. This allows agricultural diverters to operate their pumps throughout each tidal cycle by maintaining a minimum water elevation of 2.6 feet (NAVD88) measured at the Howard Road Bridge station. The rock materials for MR are stockpiled adjacent to the barrier site on the water side of the levee crown.

Each year, the MR barrier weir section is reconstructed by placing approximately 2,300 cubic yards of rock between the two previously constructed abutments that are left in place year-round. Each abutment has three 48-inch diameter culverts with tidally-operated flap-gates that are also left in place. Placement of rock completes the barrier that is 270-feet long and 50 feet-wide (0.31 acre). The rock weir section is 140-feet long and 18-feet wide at its crest. By 15 September, a 10 foot-wide notch (fall notch) is constructed in the weir for salmon passage. The notch allows a minimum depth of 6 inches of water to pass over the barrier during low-high tide events and will remain in place until the barrier is removed.

The height of the weir may be increased from 3.3 feet (typical) to 4.3 feet (NAVD88) during peak irrigation months to maintain water quality standards. Raising the barrier height 1 foot will require an additional 100 cubic yards of rock and will reduce the width of the crest to 15 feet. However, there will be no change in the footprint of the MR barrier and it is expected that this will result in no significant changes in the disturbance to the riverbed or channel from the original design. The MR barrier will only be raised when risks to delta smelt have passed and full barrier operations are allowed by the United States Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW). The MR barrier weir may be continually raised to:

- Decrease salinity levels in the south Delta by using the tidal cycles to add additional fresh Sacramento River water into south Delta channels system via Middle River;
- Increase the circulation upstream of the barriers, thereby improving water quality and supply to agricultural diversions for crops; and
- Reduce null zones where stagnant water causes low DO levels, increased macrophyte growth, and algae blooms.

The center weir section of the MR barrier is removed during the non-irrigation season (December through March). The flap-gates are tied open when the center weir section is removed. The fall notch in the MR barrier will remain the same elevation regardless of the one foot increase in weir height. The notch will be 10 feet wide and at an elevation of 2.6 feet (NAVD88).

The abutments will remain in place over the winter. Periodic culvert replacement may occur in order to ensure their functionality. Culverts will be removed when the Head of Old River (HOR) fall barrier is removed.

Grant Line Canal (GLC) Barrier

Each year the GLC barrier is constructed with approximately 12,600 cubic yards of rock that is placed between the existing south abutment and the north canal bank to form a 300-foot long barrier that is up to 100-feet wide at its base (0.69 acre). The center of the barrier has a weir section with a crest at 3.3 feet elevation (NAVD88) that is 125-feet long and 24-feet wide. Rock for the GLC barrier is stockpiled offsite at the Howard Road storage area (2.0 miles north of the barrier). The existing south abutment contains six, 48-inch diameter, 60-foot long culverts with flap-gates on the upstream end. A catwalk structure is affixed to the top of each culvert with a winch and hand crank, allowing access to and operation of the flap-gates attached to the upstream end of each culvert. A 10-foot wide flashboard structure is also built at the south abutment, which can be adjusted to allow delta smelt passage in spring and salmon passage in the fall.

A boat ramp facility is also provided at the north levee. The boat ramp is constructed with riprap at the base, followed by crushed rock, and topped with articulated concrete mats. Because much of the boat ramp structure will be underwater, divers will aid in the positioning of the articulated concrete mats. To protect the levees, the abutments will remain in place over the winter. Periodic culvert replacement may occur in order to ensure their functionality. Culverts will be removed when the HOR fall barrier is removed.

Head of Old River (HOR) Barrier

The HOR barrier serves a dual purpose and may be installed in the spring and in the fall. In the spring, the barrier acts as a fish barrier to decrease the number of salmonid smolts entering Old River. In the fall, the barrier may be needed to increase flows and DO levels for migrating adult salmon downstream in the San Joaquin River, including the Stockton Deep Water Ship Channel.

Construction of the HOR rock barrier may entail the placement of a rock barrier in the spring and/or fall within the channel of Old River. Minor dredging may be required in order to prepare the area for barrier installation. Dredging in the vicinity of the HOR barrier will be limited to the minimum amount necessary that will allow for the installation of the crushed rock bed for the culverts and will not extend beyond 200 feet in any direction from the barrier footprint.

All dredged sediment will be deposited and retained in an area that has no connection to waters of the United States, most likely adjacent to the HOR site on the inland side of the levee crown. The disposal of the dredged material is covered under R5-2013-0145-0076. The culverts and articulated concrete mats for the HOR rock barriers are stockpiled offsite at Howard Road storage area, while the rock is stockpiled adjacent to the HOR site on the inland side of the levee crown. Heavy construction equipment will be mobilized to move the stockpiled culverts, articulated concrete mats, and rock from its storage location into the channel to form the barrier. Large front-end loaders, dump trucks, long reach excavators and barges with spuds, and tug boat are used to move and place the materials.

Spring Rock Barrier: The spring HOR rock barrier is intended to prevent downstream-migrating salmon smolts in the San Joaquin River from entering Old River, which would expose them to State Water Project (SWP) and Central Valley Project (CVP) diversion operations and unscreened agricultural diversions.

The spring HOR rock barrier is constructed with approximately 12,500 cubic yards of rock to form a 225-foot long and 85-foot wide (at the base) embankment (0.44 acre) and it has a crest elevation of 12.3 feet (NAVD88). Construction at the south end of the barrier includes the placement of six to eight, 48-inch diameter culverts with slide gates into the barrier abutment. The middle section includes a 75-foot weir at an elevation of 8.3 feet that is capped with clay up to the barrier crest elevation (12.3 feet, NAVD88). To protect the levees, the clay cap is designed to wash out in the event of a major flood. Water quality impacts resulting in the potential wash out of the clay cap have been considered in the impacts to Old River water quality and best management practices will be in place during such an event.

There is no boat portage facility at this barrier. A ramp and dock may be secured to the shore in order to allow storage and safe access to small boats that may be used for construction, maintenance, and research purposes.

Fall Rock Barrier: Installation of the fall HOR rock barrier may be needed to increase flows and DO levels downstream for migrating adult salmon in the San Joaquin River. The fall HOR rock barrier is constructed similarly to the spring barrier, but using approximately 7,500 cubic yards of rock to form a smaller 225-foot long and 65-foot wide (at the base) embankment (0.34 acre) with six 48-inch diameter culverts with slide-gates that is constructed to a crest elevation of 8.3 feet and includes a 30-foot wide notch at elevation 2.3 feet (NAVD88) to allow the passage of adult salmonids.

Barrier Removal

Old River at Tracy, Middle River, and Grant Line Canal barriers

Removal of the barriers at ORT, MR, and GLC will occur in the fall. The rock barriers will be removed with an excavator. An excavator will remove the majority of the rock down to the underwater pad of the culvert frames. Because the culvert pad is longer and wider than the reach of the excavator, an excavator or barge mounted crane may be necessary to remove the remainder of the underwater rock associated with the barriers. The removed rock is stockpiled outside of the active channel at the locations described above until used again. At the barrier sites, the channel bottoms will be restored to pre-project conditions after the barriers are removed. The barrier culverts and abutments at MR will remain in place throughout the year, as will the culverts and south barrier abutment at GLC.

Head of Old River Barrier

The rock barriers will be removed with an excavator or a crane with clamshells. Equipment will work both from shore and from a barge with spuds and a tug boat. The excavator and/or crane will remove the majority of the rock down to the underwater pad of the culvert frames. An excavator or barge mounted crane may be necessary to remove the remainder of the underwater rock associated with the barriers. The removed rock is stockpiled outside of the waterway at the location described above until used again. The channel bottom will be restored to pre-project conditions after the barrier is removed.

Total Project Impacts

Total Project fill/excavation quantities for all impacts are summarized in Table 2. Permanent impacts are categorized as those resulting in a physical loss in area and also those degrading ecological condition only.

| Table 2: Total Project Fill/Excavation Quantity | | | | | | | | | |
|--|-------------------------------------|-----------------|-----------------|-------------------------|----|-----|--|----|----|
| Aquatic Resource Type | Temporary Impact¹ | | | Permanent Impact | | | | | |
| | | | | Physical Loss of Area | | | Degradation of Ecological Condition Only | | |
| | Acres | CY ² | LF ² | Acres | CY | LF | Acres | CY | LF |
| Stream Channel | 1.6 | - | 849 | 0.27 | - | 289 | - | - | - |

VIII. Description of Indirect Impacts to Waters of the State

Operational impacts of the barriers may impact tidal elevations and flows upstream of the barrier locations. The effects of the temporary barriers are determined by the weir elevations and the number of fully-opened and flap gate culverts (i.e., flood-tide flow only).

IX. Avoidance and Minimization

The Permittee has implemented an adaptive management and monitoring plan and applied various conservation measures required by USFWS, NMFS, and CDFW. The plan and

¹ Includes only temporary direct impacts to waters of the state and does not include upland areas of temporary disturbance which could result in a discharge to waters of the state.

² Cubic Yards (CY); Linear Feet (LF)

measures include fisheries monitoring and water quality analysis, fish entrainment studies, and salmon smolt survival investigations. The Permittee also conducted hydrologic modeling to simulate effects the temporary barriers have on flows and water levels in the south Delta. The Permittee has previously conducted fisheries monitoring and water quality monitoring and analyses, fish entrainment studies, and salmon smolt survival investigations. The results of these various monitoring studies and investigations are published on the South Delta Temporary Barriers website: <http://baydeltaoffice.water.ca.gov/sdb/tbp>.

As specified by the Permittee, the Permittee will prepare a spill prevention and control program prior to the start of construction to minimize the potential for hazardous, toxic, or petroleum substances released into the project area during construction and project operation. In addition, the Permittee will place sandbags, bio-logs, or other containment features around the areas used for fueling or other uses of hazardous materials to ensure that these materials do not accidentally leak into the river. The Permittee will also adhere to the standard construction best management practices (BMPs) described in the current California Department of Transportation *Construction Site Best Management Practices Manual*.

According to the Permittee, continuous monitoring data will be submitted for review quarterly to minimize and avoid impacts to water quality during and after construction to comply with the Order.

X. Compensatory Mitigation

The Permittee has agreed to provide compensatory mitigation for direct impacts, described in Section K, Compensatory Mitigation for Permanent Impacts.

XI. California Environmental Quality Act (CEQA)

On 16 March 2001, the Department of Water Resources, as lead agency, adopted an Initial Study/Negative Declaration (IS/ND) (State Clearinghouse (SCH) No. 2000112054) for the Project and filed a Notice of Determination (NOD) at the SCH on 21 March 2001. A revised NOD was filed at the SCH on 31 January 2012. Pursuant to CEQA, the Central Valley Water Board has made Findings of Facts (Findings) which support the issuance of this Order and are included in Attachment C.

XII. Petitions for Reconsideration

Any person aggrieved by this action may petition the State Water Resources Control Board to reconsider this Order in accordance with California Code of Regulations, title 23, section 3867. A petition for reconsideration must be submitted in writing and received within 30 calendar days of the issuance of this Order.

XIII. Fees Received

An application fee of \$14,708.00 was received on 28 November 2016. The fee amount was determined as required by California Code of Regulations, title 23, sections 3833(b)(3) and 2200(a)(3), and was calculated as category A - Fill & Excavation Discharges (fee code 84) with the dredge and fill fee calculator.

An additional fee of \$607.00 based on total Project impacts was received on 11 January 2017.

XIV. Conditions

The Central Valley Water Board has independently reviewed the record of the Project to analyze potential impacts to water quality and designated beneficial uses within the watershed

of the Project. In accordance with this Order, the Permittee may proceed with the Project under the following terms and conditions:

A. Authorization

Impacts to waters of the state shall not exceed quantities shown in Table 2.

B. Reporting and Notification Requirements

The following section details the reporting and notification types and timing of submittals. Requirements for the content of these reporting and notification types are detailed in Attachment F, including specifications for photo and map documentation during the Project. Written reports and notifications must be submitted using the Reporting and Notification Cover Sheet located in Attachment F, which must be signed by the Permittee or an authorized representative.

The Permittee must submit all notifications, submissions, materials, data, correspondence, and reports in a searchable Portable Document Format (PDF). Documents less than 50 MB must be emailed to: centralvalleysacramento@waterboards.ca.gov.

In the subject line of the email, include the Central Valley Water Board Contact, Project name, and WDID. Documents that are 50 MB or larger must be transferred to a disk and mailed to the Central Valley Water Board Contact.

1. Project Reporting

- a. Quarterly Reporting:** The Permittee must submit a Quarterly Report to the Central Valley Water Board on the 1st day of February after the effective date of this Order. Quarterly reporting shall continue until the Central Valley Water Board issues a Notice of Project Complete Letter to the Permittee. Quarterly time periods and reporting due dates are described in Attachment F.
- b. Annual Reporting:** The Permittee shall submit an Annual Report each year on the 1st day of December beginning one year after the effective date of the Order. Annual reporting shall continue until a Notice of Project Complete Letter is issued to the Permittee. The annual report shall include a summary and full evaluation of the water quality monitoring data collected from the stations listed in Table 5. The evaluation will include hydrologic information (i.e., flows) and tidal elevation in the south Delta channels. If the barriers are not constructed during an authorized installation and removal period, an annual report is not required.
- c. Dissolved Oxygen Water Quality Analysis Work Plan and Report:** The Permittee shall submit a dissolved oxygen (DO) water quality analysis work plan to evaluate the Permittee water quality monitoring data, from 2014-2016, along with any other appropriate, readily available data, **by 31 January 2018** for approval by the Central Valley Water Board Executive Officer. This work plan shall describe the data, analysis methods and evaluations that will be used to assess the primary influences on water quality in the south Delta channels, and to what degree water quality (e.g. DO, harmful algal blooms) of the south Delta channels is impacted by the installation of the barriers. Specifically, the data evaluation report shall determine whether the barriers are causing or contributing to impairment of beneficial uses. The study plan will describe coordination with the Delta Regional Monitoring Program (Delta RMP), including sharing of the Project monitoring data with the Delta RMP. The results of this evaluation of low DO conditions may be

used in the Dissolved Oxygen Total Maximum Daily Load (TMDL) Report being prepared by Central Valley Water Board for the low DO conditions that have been measured in Old River and Middle River. The work plan must include a schedule for completion of the analysis. The final report shall be submitted to the Central Valley Water Board within two years of work plan approval by the Central Valley Water Board Executive Officer.

2. Project Status Notifications

- a. **Commencement of Construction:** The Permittee shall submit a Commencement of Construction Report at least seven (7) days prior to start of initial ground disturbance activities.
- b. **Notice of Removal of Barriers Report:** The Permittee shall submit a Notice of Removal of Barriers Report at least seven (7) days after the temporary barriers have been removed from waters of the state.

3. Conditional Notifications and Reports: The following notifications and reports are required as appropriate.

a. Accidental Discharges of Hazardous Materials³

Following an accidental discharge of a reportable quantity of a hazardous material, sewage, or an unknown material, the following applies (Wat. Code, § 13271):

- i. As soon as (A) Permittee has knowledge of the discharge or noncompliance, (B) notification is possible, and (C) notification can be provided without substantially impeding cleanup or other emergency measures then:
 - first call – 911 (to notify local response agency)
 - then call – Office of Emergency Services (OES) State Warning Center at:(800) 852-7550 or (916) 845-8911
 - Lastly follow the required OES procedures as set forth in:
http://www.caloes.ca.gov/FireRescueSite/Documents/CalOES-Spill_Booklet_Feb2014_FINAL_BW_Acc.pdf
- ii. Following notification to OES, the Permittee shall notify Central Valley Water Board, as soon as practicable (ideally within 24 hours). Notification may be delivered via written notice, email, or other verifiable means in accordance with section XIV.B.
- iii. Within five (5) working days of notification to the Central Valley Water Board, the Permittee must submit an Accidental Discharge of Hazardous Material Report.

b. Violation of Compliance with Water Quality Standards: The Permittee shall notify the Central Valley Water Board of any event causing a violation of

³ "Hazardous material" means any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment. (Health & Saf. Code, § 25501.)

compliance with water quality standards during the installation, operation, and removal of the barriers. Notification may be delivered via written notice, email, or other verifiable means in accordance with section XIV.B.

- i. This notification must be followed within three (3) working days by submission of a Violation of Compliance with Water Quality Standards Report.

c. In-Water Work and Diversions

- i. The Permittee shall notify the Central Valley Water Board at least forty-eight (48) hours prior to initiating work in water or stream diversions. Notification may be delivered via written notice, email, or other verifiable means in accordance with section XIV.B.
- ii. Within three (3) working days following completion of work in water or stream diversions, an In-Water Work/Diversions Water Quality Monitoring Report must be submitted to Central Valley Water Board staff.

d. Modifications to Project

Project modifications may require an amendment of this Order. The Permittee shall give advance notice to Central Valley Water Board staff if Project implementation as described in the application materials is altered in any way or by the imposition of subsequent permit conditions by any local, state or federal regulatory authority by submitting a Modifications to Project Report. The Permittee shall inform Central Valley Water Board staff of any Project modifications that will interfere with the Permittee's compliance with this Order. Notification may be made in accordance with conditions in the certification deviation section of this Order.

e. Transfer of Property Ownership: This Order is not transferable in its entirety or in part to any person or organization except after notice to the Central Valley Water Board in accordance with the following terms:

- i. The Permittee must notify the Central Valley Water Board of any change in ownership or interest in ownership of the Project area by submitting a Transfer of Property Ownership Report. The Permittee and purchaser must sign and date the notification and provide such notification to the Central Valley Water Board at least 10 days prior to the transfer of ownership. The purchaser must also submit a written request to the Central Valley Water Board to be named as the permittee in a revised order.
- ii. Until such time as this Order has been modified to name the purchaser as the permittee, the Permittee shall continue to be responsible for all requirements set forth in this Order.

f. Transfer of Long-Term BMP Maintenance: If maintenance responsibility for post-construction BMPs is legally transferred, the Permittee must submit to the Central Valley Water Board a copy of such documentation and must provide the transferee with a copy of a long-term BMP maintenance plan that complies with manufacturer or designer specifications. The Permittee must provide such notification to the Central Valley Water Board with a Transfer of Long-Term BMP Maintenance Report at least 10 days prior to the transfer of BMP maintenance responsibility.

C. Water Quality Monitoring

1. **General:** Continuous visual surface water monitoring shall be conducted during active construction periods to detect accidental discharge of construction related pollutants (e.g. oil and grease, turbidity plume, or uncured concrete). The Permittee shall perform surface water sampling:
 - a. when perform any in-water work;
 - b. in the event that the Project activities result in any materials reaching surface waters; or
 - c. when any activities result in the creation of a visible plume in surface waters.
2. The Project results in a change in the flow patterns resulting in stagnant water, which can contribute to an increase in temperature, decrease in dissolved oxygen, and contribute to an increase in algal biomass. To determine if the Project has an impact and if so, the effect and magnitude of the Project, the following reports are required:
 - a. **Evaluation of Dissolved Oxygen and Harmful Algal Bloom:** If the Executive Officer determines, based on review of the Dissolved Oxygen Water Quality Analysis Report or other information, that the barriers are contributing to dissolved oxygen impairments in the Delta, the Permittee shall provide a preliminary evaluation of the feasibility and potential effectiveness, costs, benefits and impacts of actions to improve dissolved oxygen and reduce harmful algal blooms within the South Delta Channels affected by the installation of the Delta Barriers. Actions to be evaluated should include:
 - i. Improved water circulation in OR/MR/GLC through alternative flow management strategies, including alternative barrier design and operation;
 - ii. Alternatives to agricultural barriers to provide water to south Delta growers;
 - iii. Aeration; and
 - iv. Coordinating with the appropriate agencies to manually remove or treatment of water hyacinth and other floating and submerged aquatic vegetation.
 - b. **Nutrient Data Analysis Plan.** The Permittee shall provide a data analysis plan to provide information that can support the evaluation of the potential effects of nutrients and algae on aquatic vegetation growth and abundance (biomass) in the San Joaquin River and south Delta channels (i.e. , do the barriers provide an environment that exacerbates the effects of existing nutrient levels?). Available nutrient data will be evaluated, and if necessary, additional nutrient samples will be collected. The nutrient data analysis plan shall include an analysis of water quality parameters related to the potential effects of barrier installation on algae and aquatic plants in the vicinity of the barriers. At a minimum, the analysis should consider harmful algal blooms, specific conductance, nitrate, chlorophyll fluorescence, chlorophyll A, pheophytin A, dissolved ammonia, dissolved nitrite and nitrate, total nitrogen, dissolved orthophosphate, total phosphorous, and dissolved organic nitrogen. The comprehensive analysis of nutrients will be included in the dissolved oxygen study and will inform any proposed revisions to the continuous monitoring included in Section C. The Nutrient Data Analysis Plan must be submitted to the Central Valley Water Board by **31 January 2018** for approval of the Central Valley Water Board Executive Officer.

- c. Targeted Monitoring and Analysis Plan.** The Permittee shall provide a monitoring and analysis plan describing the specific methods and detection and reporting limits, protocols for sample collection, and analysis and quality assessment and quality control procedures for this monitoring. The plan shall provide representative data showing water quality parameters related to the effects of barrier installation in Delta waters in the vicinity of the barriers.

The Targeted Monitoring and Analysis Plan for monitoring in Tables 3 and 4, and as described in the Continuous Water Quality Monitoring section, must be submitted to the Central Valley Water Board **by 31 January 2018** for approval of the Central Valley Water Board Executive Officer. The Permittee shall continue existing monitoring as required by the previous order (WDID#5B39CR00191) until the monitoring and analysis plan is approved by the Central Valley Water Board Executive Officer.

- 3. Accidental Discharges/Noncompliance:** Upon occurrence of an accidental discharge of hazardous materials or a violation of compliance with a water quality standard, Central Valley Water Board staff may require water quality monitoring based on the discharge constituents and/or related water quality objectives and beneficial uses.

4. In-Water Work, Barrier Operations, or Diversions:

During planned in-water work, operation of barriers, or during the entire duration of all temporary water diversions, any discharge(s) to waters of the state shall conform to the following water quality standards:

- a. Waters shall not contain oils, greases, waxes, or other materials in concentrations that cause nuisance, result in a visible film or coating on the surface of the water or on objects in the water, or otherwise adversely affect beneficial uses.
- b. Activities shall not cause dissolved oxygen to be reduced below 5.0 mg/L.
- c. Activities shall not cause pH to be depressed below 6.5 nor raised above 8.5 in surface water.
- d. Activities shall not cause turbidity increases in surface water to exceed:
 - i. where natural turbidity is less than 1 Nephelometric Turbidity Units (NTUs), controllable factors shall not cause downstream turbidity to exceed 2 NTU;
 - ii. where natural turbidity is between 1 and 5 NTUs, increases shall not exceed 1 NTU;
 - iii. where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent;
 - iv. where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs;
 - v. where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses will be fully protected. Averaging periods may only be used with prior permission of the Central Valley Water Board Executive Officer.

For Delta waters, the general objectives for turbidity apply subject to the following: except for periods of storm runoff, the turbidity of Delta waters shall not exceed 50 NTUs in the waters of the Central Delta and 150 NTUs in other Delta waters.

- e. Activities shall not cause temperature in surface and receiving waters to increase more than 5°F above natural receiving water temperature for waters with designated COLD or WARM beneficial uses.

Sampling during in-water work shall be conducted in accordance with Table 3 and 4 sampling parameters.⁴ The sampling requirements in Table 3 shall be conducted upstream out of the influence of the Project, and approximately 300 feet upstream and downstream of the work area during barrier installation.

| Parameter | Unit of Measurement | Type of Sample | Minimum Frequency |
|------------------|---------------------|----------------|-------------------|
| Oil and Grease | N/A | Visual | Daily |
| Turbidity | NTU | Grab | Every 4 hours |
| Temperature | °F (or as °C) | Grab | Every 4 hours |
| Dissolved Oxygen | mg/L & % saturation | Grab | Every 4 hours |

The sampling requirements in Table 4 shall be conducted upstream out of the influence of the Project, and approximately 300 feet upstream and downstream of the work area during barrier operation.

| Parameter | Unit of Measurement | Type of Sample | Minimum Frequency |
|----------------------|---------------------|----------------|-------------------|
| Dissolved Oxygen | mg/L & % saturation | Grab | Every 4 hours |
| Harmful Algal Blooms | N/A | Visual | Daily |

The sampling frequency may be modified for certain projects with written approval from Central Valley Water Board staff. A surface water monitoring report, as described in Attachment F, shall be submitted with the submittal of continuous monitoring data. In reporting the data, the Permittee shall arrange the data in tabular form so that the sampling locations, date, constituents, and concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the Project complies with Order requirements. The report shall include surface water sampling results, visual observations, and identification of the turbidity increase in the receiving

⁴ Pollutants shall be analyzed using the analytical methods described in 40 Code of Federal Regulations Part 136; where no methods are specified for a given pollutant, the method shall be approved by Central Valley Water Board staff. Grab samples shall be taken between the surface and mid-depth and not be collected at the same time each day to get a complete representation of variations in the receiving water. A hand-held field meter may be used, provided the meter utilizes a U.S. EPA-approved algorithm/method and is calibrated and maintained in accordance with the manufacturer's instructions. A calibration and maintenance log for each meter used for monitoring shall be maintained onsite.

water applicable to the natural turbidity conditions specified in the turbidity criteria in XIV.C.3.d.

Harmful Algal Bloom (HAB) Monitoring. On a quarterly basis, the Permittee shall maintain a field observation log of visual observations of the following occurrences within the South Delta in vicinity of the waterbody segments where the barriers are placed:

- Presence and description of harmful algal blooms. Reports of algae and cyanobacterial blooms should follow methods used by the Surface Water Ambient Monitoring Program (<http://www.mywaterquality.ca.gov/habs/resources/field.html>) and their visual guide to observing and identifying cyanobacteria and algae blooms (http://www.ccamp.net/Swamp/images/3/33/SOP-Visual_Guide_to_Observing_Blooms.pdf). For ranking the density of *Microcystis sp.* blooms, the Permittee should follow the method developed by the Permittee's Environmental Monitoring Program (*Microcystis aeruginosa* density ranking key).
- Presence and extent of invasive floating and submerged aquatic vegetation, or dead or injured wildlife.

If what appears to be a harmful algal bloom is observed, the Permittee shall, within 24 hours, report the bloom using the California Water Quality Monitoring Council's Harmful Algal Bloom (HAB) Portal. Reporting information can be found on the HAB website, <http://www.mywaterquality.ca.gov/habs/>.

- Minimum information provided when reporting the bloom shall include the location, date, and a description of the bloom (appearance and size), any presence of dead or injured wildlife and a follow-up contact number or email. Site photos showing the presence and magnitude of the bloom shall be submitted, if available. The information provided shall be sent to the Central Valley Water Board contact and the Central Valley Water Board Cyanobacteria Coordinator (or alternate) at CentralValleySacramento@waterboards.ca.gov, ATTN: Harmful Algal Blooms Coordinator for immediate follow-up.

Continuous Water Quality Monitoring: The Permittee shall continue to implement the approved Targeted Monitoring and Analysis Plan for the Project, and shall provide a summary and evaluation of the monitoring data at the stations shown in Table 5 during each calendar year, because the Project is on-going and may influence water quality conditions in the spring, summer and fall. The Permittee may propose changes in the locations of the stations, based on the analysis of the historical data that has been collected, for approval by the Central Valley Water Board Executive Officer; all data shall be summarized and evaluated in the annual monitoring reports. The parameters at these monitoring stations include temperature, turbidity, DO, pH, EC, and chlorophyll. Continuous measurements of DO, pH and chlorophyll are indicative of algae and aquatic vegetation biomass in the south Delta channels; the interpretation of these data may be enhanced by a focused evaluation of nutrients in the SJR and south Delta channels, as described in Table 5.

| Table 5: Targeted Monitoring Stations | | |
|---|-------------|---|
| Station | CDEC | Note |
| Old River at TWA | TWA | - |
| Old River below DMC barrier | ODM | Downstream comparison station |
| Old River at Head of San Joaquin River | OH1 | - |
| Old River above Mountain House Creek | ORM | - |
| Middle River at Undine Road | MRU | - |
| Middle River at Howard Road | MHO | - |
| Middle River near Tracy Blvd | MRX | Upstream comparison station |
| Doughty Cut above GLC | DGL | - |
| Grant Line Canal East | GLE | Upstream comparison station |
| Grant Line Canal at Tracy Blvd (or alternate) | GCT | Possibly switch to alternate station representing the reach between the Barrier and the Grant Line Canal near Clifton Court Forebay |
| Grant Line Canal near Clifton Court Forebay | GLC | - |
| Victoria Canal | VCU | - |
| San Joaquin River at Mossdale Bridge | MSD | - |
| | | |

Delta Regional Monitoring Program (RMP). The Delta waterways are listed pursuant to Clean Water Act (CWA) section 303(d) as impaired for chlorpyrifos, DDT, diazinon, electrical conductivity, Group A pesticides, invasive species, low dissolved oxygen, mercury, total dissolved solids, and unknown toxicity. The Delta RMP was created to coordinate the Delta-wide monitoring, reporting, and assessment of water quality necessary for understanding regional water quality conditions and trends. Currently the Delta RMP Monitoring Design is focusing on pesticides and toxicity, pathogens,

nutrients, and mercury, and is monitoring several of these constituents at various locations throughout the Delta.

Permitted actions will change the water residence time, which has the potential to affect the methylation of mercury, decrease dissolved oxygen levels, and exacerbate the effects of nutrient concentrations which may lead to increased harmful algal blooms, macrophytes (water hyacinth and *Egeria densa*), shifts in algal species composition, and taste and odor problems in drinking water. Because the permitted actions may impact these long-term Delta water quality concerns, the Permittee shall adequately participate in the Delta RMP.

Adequate participation the Delta RMP can include, but is not limited to the following activities: provide funding, conduct or provide in-kind technical and analytical support for special studies for dissolved oxygen, nutrients, and/or methylmercury in coordination with current or planned Delta RMP monitoring efforts, including data collection, analysis (or modeling), and reporting. Data analysis (or modeling) and reporting can be for either data collected by the Permittee or for data collected and/or compiled by the Delta RMP. Any in-kind participation must support Delta RMP Steering approved monitoring and must be approved by the Delta RMP Steering Committee. The Permittee may propose reductions in monitoring for Executive Officer approval to offset the cost of Delta RMP Participation

By **31 January 2018**, the Permittee shall submit for Executive Officer approval a work plan for participation in the Delta RMP. The work plan shall include a description, milestones and time schedule for special studies, monitoring, analytical, and/or reporting activities the Permittee intends to complete for fiscal year 2017/2018. Annually thereafter, the Permittee shall submit a work plan describing activities and milestones for Delta RMP participation in subsequent years.

D. Standard

1. This Order is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Water Code section 13330, and California Code of Regulations, title 23, chapter 28, Article 6 commencing with sections 3867-3869, inclusive. Additionally, the Central Valley Water Board reserves the right to suspend, cancel, or modify and reissue this Order, after providing notice to the Permittee, if the Central Valley Water Board determines that: the Project fails to comply with any of the conditions of this Order; or, when necessary to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act (Wat. Code, § 13000 et seq.) or federal Clean Water Act section 303 (33 U.S.C. § 1313). For purposes of Clean Water Act section 401(d), the condition constitutes a limitation necessary to assure compliance with water quality standards and appropriate requirements of state law.
2. This Order is not intended and shall not be construed to apply to any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license, unless the pertinent certification application was filed pursuant to subsection 3855(b) of chapter 28, title 23 of the California Code of Regulations, and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

3. This Order is conditioned upon total payment of any fee required under title 23 of the California Code of Regulations and owed by the Permittee.
4. In the event of any violation or threatened violation of the conditions of this Order, the violation or threatened violation shall be subject to any remedies, penalties, process, or sanctions as provided for under state and federal law. For purposes of Clean Water Act, section 401(d), the applicability of any state law authorizing remedies, penalties, processes, or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this Order.

E. General Compliance

1. Failure to comply with any condition of this Order shall constitute a violation of the Porter-Cologne Water Quality Control Act and the Clean Water Act. The Permittee and/or discharger may then be subject to administrative and/or civil liability pursuant to Water Code section 13385.
2. Permitted actions must not cause a violation of any applicable water quality standards, including impairment of designated beneficial uses for receiving waters as adopted in the Basin Plans by any applicable Central Valley Water Board or any applicable State Water Board (collectively Water Boards) water quality control plan or policy. The source of any such discharge must be eliminated as soon as practicable.
3. In response to a suspected violation of any condition of this Order, the Central Valley Water Board may require the holder of this Order to furnish, under penalty of perjury, any technical or monitoring reports the Water Boards deem appropriate, provided that the burden, including costs, of the reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. The additional monitoring requirements ensure that permitted discharges and activities comport with any applicable effluent limitations, water quality standards, and/or other appropriate requirement of state law.
4. The Permittee must, at all times, fully comply with engineering plans, specifications, and technical reports submitted to support this Order; and all subsequent submittals required as part of this Order. The conditions within this Order and Attachments supersede conflicting provisions within Permittee submittals.
5. This Order and all of its conditions contained herein continue to have full force and effect regardless of the expiration or revocation of any federal license or permit issued for the Project. For purposes of Clean Water Act, section 401(d), this condition constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements of state law.

F. Administrative

1. Signatory requirements for all document submittals required by this Order are presented in Attachment E of this Order.
2. This Order does not authorize any act which results in the taking of a threatened, endangered or candidate species or any act, which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish & G. Code, §§ 2050-2097) or the federal Endangered Species Act (16 U.S.C. §§ 1531-1544). If a "take" will result from any act authorized under this Order held by the Permittee, the Permittee must obtain authorization for the take prior to any construction or operation of the portion of the Project that may result in a take. The

Permittee is responsible for meeting all requirements of the applicable endangered species act for the Project authorized under this Order.

3. The Permittee shall grant Central Valley Water Board staff, or an authorized representative (including an authorized contractor acting as a Water Board representative), upon presentation of credentials and other documents as may be required by law, permission to:
 - a. Enter upon the Project or compensatory mitigation site(s) premises where a regulated facility or activity is located or conducted, or where records are kept.
 - b. Have access to and copy any records that are kept and are relevant to the Project or the requirements of this Order.
 - c. Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order.
 - d. Sample or monitor for the purposes of assuring Order compliance.
4. A copy of this Order shall be provided to any consultants, contractors, and subcontractors working on the Project. Copies of this Order shall remain at the Project site for the duration of this Order. The Permittee shall be responsible for work conducted by its consultants, contractors, and any subcontractors.
5. A copy of this Order must be available at the Project site(s) during construction for review by site personnel and agencies. All personnel performing work on the Project shall be familiar with the content of this Order and its posted location at the Project site.
6. Lake and Streambed Alteration Agreement – The Permittee shall submit a signed copy of the Department of Fish and Wildlife’s lake and streambed alteration agreement to the Central Valley Water Board immediately upon execution and prior to any discharge to waters of the state.

G. Construction

1. **Dewatering – NOT APPLICABLE**
2. **Directional Drilling – NOT APPLICABLE**
3. **Dredging**
 - a. If dredging occurs within the Project area prior to barrier installation, a maximum amount of 2,800 cubic yards of dredge material removed from the active channel is authorized by this Order every calendar year.
4. **Fugitive Dust – NOT APPLICABLE**
5. **Good Site Management “Housekeeping”**
 - a. The Permittee shall develop and maintain onsite a project-specific Spill Prevention, Containment and Cleanup Plan outlining the practices to prevent, minimize, and/or clean up potential spills during construction of the Project. The Plan must detail the Project elements, construction equipment types and location, access and staging and construction sequence. The Plan must be made available to the Central Valley Water Board staff upon request.

- b. Refueling of equipment within the floodplain or within 300 feet of the waterway is prohibited. If critical equipment must be refueled within 300 feet of the waterway, spill prevention and countermeasures must be implemented to avoid spills. Refueling areas shall be provided with secondary containment including drip pans and/or placement of absorbent material. No hazardous materials, pesticides, fuels, lubricants, oils, hydraulic fluids, or other construction-related potentially hazardous substances should be stored within a floodplain or within 300 feet of a waterway. The Permittee must perform frequent inspections of construction equipment prior to utilizing it near surface waters to ensure leaks from the equipment are not occurring and are not a threat to water quality.
- c. All materials resulting from the Project shall be removed from the site and disposed of properly.
- d. All materials used for creation of the temporary barriers shall be stored properly on site for use during future barrier installation.

6. Materials

- a. The discharge of petroleum products, any construction materials, hazardous materials, pesticides, fuels, lubricants, oils, hydraulic fluids, raw cement, concrete or the washing thereof, asphalt, paint, coating material, drilling fluids, or other substances potentially hazardous to fish and wildlife resulting from or disturbed by project-related activities is prohibited and shall be prevented from contaminating the soil and/or entering waters of the state. In the event of a prohibited discharge, the Permittee shall comply with notification requirements in sections XIV.B.3.a and XIV.B.3.b.

7. Invasive Species and Soil Borne Pathogens – NOT APPLICABLE

8. In-Water Work

- a. In-water work shall occur during periods of no precipitation. The Applicant shall perform surface water sampling in accordance with section XIV.C.4 if any of the following conditions occur: 1) in-water work is conducted during an unanticipated flow or precipitation event; 2) Project activities result in any materials reaching surface waters; or 3) Project activities result in the creation of a visible plume in surface waters.

9. Post-Construction Storm Water Management – NOT APPLICABLE

10. Roads – NOT APPLICABLE

11. Sediment Control

- a. Except for activities permitted by the United States Army Corps of Engineers under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act, soil, silt, or other organic materials shall not be placed where such materials could pass into surface water or surface water drainage courses.
- b. Silt fencing, straw wattles, or other effective management practices must be used along the placement area to minimize soil or sediment along the embankments from migrating into the waters of the state through the entire duration of the Project if materials are placed outside of the active channel.

- c. The use of netting material (e.g., monofilament-based erosion blankets) that could trap aquatic dependent wildlife is prohibited within the Project area.

12. Special Status Species – NOT APPLICABLE

13. Stabilization/Erosion Control

- a. All areas disturbed by Project activities shall be protected from washout and erosion.
- b. Hydroseeding shall be performed with California native seed mix.

14. Storm Water – NOT APPLICABLE

H. Site Specific – NOT APPLICABLE

I. Total Maximum Daily Load (TMDL) – NOT APPLICABLE

J. Mitigation for Temporary Impacts

1. The Permittee shall restore all areas of temporary impacts, including Project site uplands areas, which could result in a discharge to waters of the state to pre-construction contours and conditions upon completion of construction activities as described in a restoration plan. The restoration plan shall be submitted for written acceptance by Central Valley Water Board staff **within ninety days (90)** of issuance of this Order. The restoration plan shall provide the following: a schedule; plans for grading of disturbed areas to pre-project contours; planting palette with plant species native to the Project area; seed collection location; invasive species management; performance standards; and maintenance requirements (e.g. watering, weeding, and replanting).
2. The Central Valley Water Board may extend the monitoring period beyond requirements of the restoration plan upon a determination by Executive Officer that the performance standards have not been met or are not likely to be met within the monitoring period.
3. If restoration of temporary impacts to waters of the state is not completed within 90 days of the impacts, compensatory mitigation may be required to offset temporal loss of waters of the state.

| Table 5: Required Project Mitigation Quantity for Temporary Impacts | | | | | | | | |
|---|------------------------|-------|---------------------|---------|------|------|-------|---------|
| Aquatic Resource Type | Mit. Type ⁵ | Units | Method ⁶ | | | | | |
| | | | Est. | Re-est. | Reh. | Enh. | Pres. | Unknown |
| Wetland | MB | Acres | - | 1.60 | - | - | - | - |

⁵ Mitigation type for onsite restoration of temporary impacts is Mitigation Bank (MB).

⁶ Methods: establishment (Est.), reestablishment (Re-est.), rehabilitation (Reh.), enhancement (Enh.), preservation (Pres.). Unknown applies to advance credits with an unknown method and or location.

K. Compensatory Mitigation for Permanent Impacts⁷

1. Final Compensatory Mitigation Plan

- a. The Permittee shall provide compensatory mitigation for impacts to waters of the state in accordance with the application, dated 21 November 2016, and supplemental information submitted by the Permittee.

2. Irrevocable Letter of Credit – NOT APPLICABLE

3. Permittee-Responsible Compensatory Mitigation Responsibility – NOT APPLICABLE

4. Purchase of Mitigation Credits by Permittee for Compensatory Mitigation

- a. A copy of the fully executed agreement for the purchase of 1.25 shallow water habitat mitigation credits from Kimball Island Mitigation Bank and 4.75 acres of shallow water habitat from Liberty Island Conservation Bank was submitted to the Central Valley Water Board on 11 May 2017.

5. Total Required Compensatory Mitigation

- a. The Permittee has provided a proof of purchase for compensatory mitigation for the 1.87 acres of impact (permanent and temporary) to stream channel habitat by purchasing 1.25 shallow water habitat mitigation credits from Kimball Island Mitigation Bank and 4.75 shallow water habitat mitigation credits from Liberty Island Conservation Bank, as required by other permitting agencies.
- b. Total required Project compensatory mitigation information for permanent physical loss of area is summarized in Table 6.

| Table 6: Required Project Compensatory Mitigation Quantity for Permanent Physical Loss of Area and Temporary Impacts | | | | | | | | |
|--|-----------------------------|-------|---------------------|---------|------|------|-------|---------|
| Aquatic Resource Type | Comp Mit. Type ⁸ | Units | Method ⁹ | | | | | |
| | | | Est. | Re-est. | Reh. | Enh. | Pres. | Unknown |
| Stream Channel | MB | Acres | 6.00 | - | - | - | - | - |

L. Certification Deviation

- 1. Minor modifications of Project locations or predicted impacts may be necessary as a result of unforeseen field conditions, necessary engineering re-design, construction concerns, or similar reasons. Some of these prospective Project modifications may have impacts on water quality. Some modifications of Project locations or predicted

⁷ Compensatory Mitigation is for permanent physical loss and permanent ecological degradation of a water of the state.

⁸ Compensatory mitigation type may be: In-Lieu-Fee (ILF); Mitigation Bank (MB); Permittee-Responsible (PR)

⁹ Methods: establishment (Est.), reestablishment (Re-est.), rehabilitation (Reh.), enhancement (Enh.), preservation (Pres.). Unknown applies to advance credits with an unknown method and or location.

impacts may qualify as Certification Deviations as set forth in Attachment E. For purposes of this Certification, a “Certification Deviation” is a Project locational or impact modification that does not require an immediate amendment of the Order, because the Central Valley Water Board has determined that any potential water quality impacts that may result from the change are sufficiently addressed by the Order conditions and the CEQA Findings. After the termination of construction, this Order will be formally amended to reflect all authorized Certification Deviations and any resulting adjustments to the amount of water resource impacts and required compensatory mitigation amounts.

2. A Project modification shall not be granted a Certification Deviation if it warrants or necessitates changes that are not addressed by the Order conditions or the CEQA environmental document such that the Project impacts are not addressed in the Project's environmental document or the conditions of this Order. In this case a supplemental environmental review and different Order will be required.

XV. Water Quality Certification

I hereby issue the Order for the South Delta Temporary Barriers Project, (WDID#5B39CR00280) certifying that as long as all of the conditions listed in this Order are met, any discharge from the referenced Project will comply with the applicable provisions of Clean Water Act sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 306 (National Standards of Performance), and 307 (Toxic and Pretreatment Effluent Standards).

This discharge is also regulated pursuant to State Water Board Water Quality Order No. 2003-0017-DWQ which authorizes this Order to serve as Waste Discharge Requirements pursuant to the Porter-Cologne Water Quality Control Act (Wat. Code, § 13000 et seq.).

Except insofar as may be modified by any preceding conditions, all Order actions are contingent on: (a) the discharge being limited and all proposed mitigation being completed in strict compliance with the conditions of this Order and the attachments to this Order; and, (b) compliance with all applicable requirements of Statewide Water Quality Control Plans and Policies, the Regional Water Boards' Water Quality Control Plans and Policies.

Original Signed By Nichole Morgan for:

Pamela C. Creedon
Executive Officer
Central Valley Regional Water Quality Control Board

5 December 2017
Date

- Attachment A** Project Map
- Attachment B** Receiving Waters, Impact, and Mitigation Information
- Attachment C** CEQA Findings of Facts
- Attachment D** Report and Notification Requirements
- Attachment E** Signatory Requirements
- Attachment F** Certification Deviation Procedures

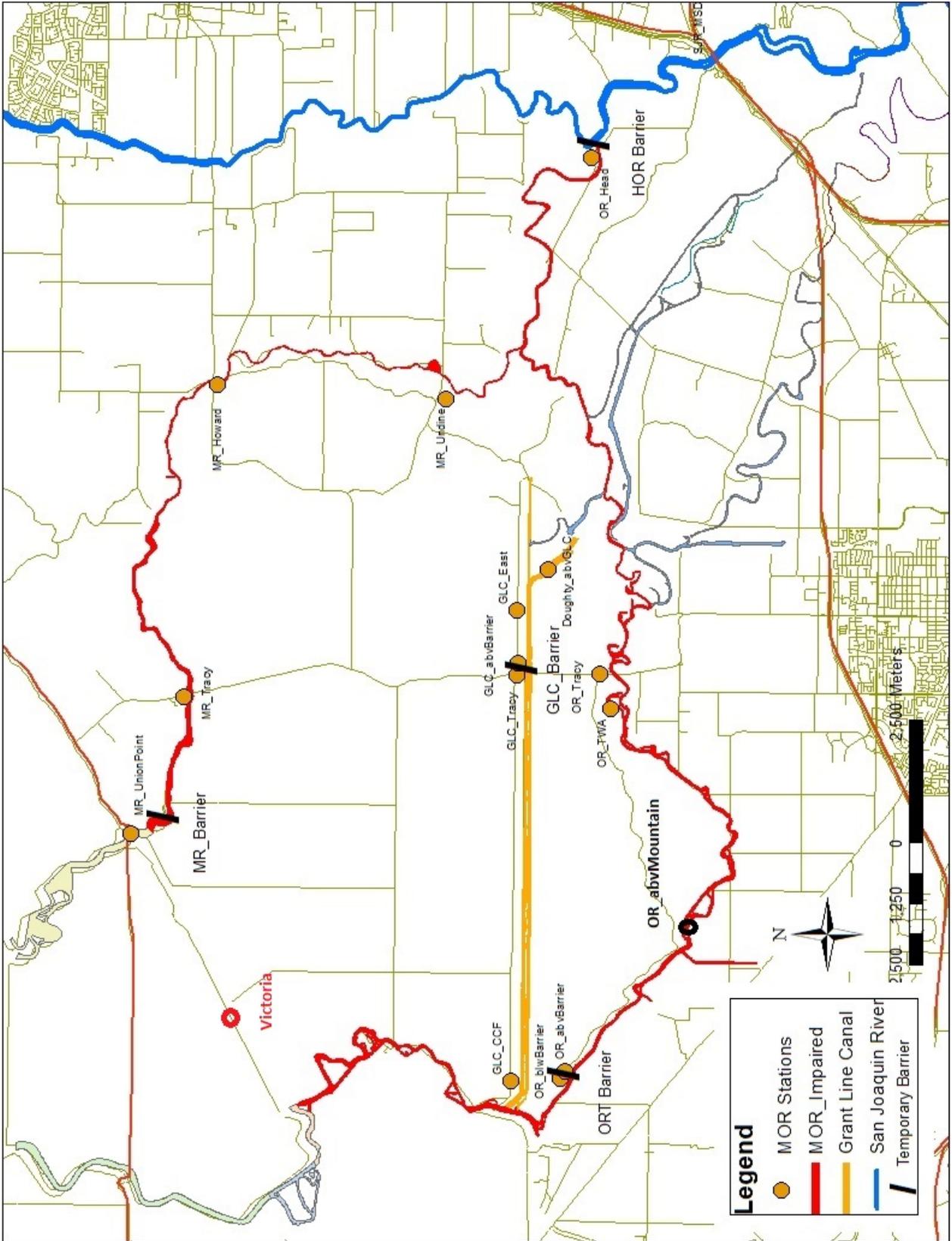


Figure 1: Project Location and Site Map

Receiving Waters

The following table shows the receiving waters associated with each impact site.

| Table 1: Receiving Water(s) Information | | | | | | | |
|--|------------------|--------------------------------|------------------------------|------------------|---|---|--------------------------|
| Site ID | Waterbody Name | Impacted Aquatic Resource Type | Water Board Hydrologic Units | Receiving Waters | Receiving Waters Beneficial Uses | 303d Listing Pollutant | CRAM AA ID ¹⁰ |
| Old River at Tracy | Old River | Stream Channel | 510.00 | Delta Waterways | MUN, AGR, PRO, IND, POW, REC-1, REC-2, FRESH(WARM), FRESH(COLD), MIGR(WARM), MIGR(COLD), SPAWN, WILD, NAV | Chlordane, Chlorpyrifos, DDT, Diazinon, Dieldrin, Diuron, Invasive Species, Group A Pesticides, Mercury, PCBs | N/A |
| Middle River | Middle River | Stream Channel | 510.00 | Delta Waterways | MUN, AGR, PRO, IND, POW, REC-1, REC-2, FRESH(WARM), FRESH(COLD), MIGR(WARM), MIGR(COLD), SPAWN, WILD, NAV | Chlordane, Chlorpyrifos, DDT, Diazinon, Dieldrin, Diuron, Invasive Species, Group A Pesticides, Mercury, PCBs | N/A |
| Grant Line Canal | Grant Line Canal | Stream Channel | 510.00 | Delta Waterways | MUN, AGR, PRO, IND, POW, REC-1, REC-2, FRESH(WARM), FRESH(COLD), MIGR(WARM), MIGR(COLD), SPAWN, WILD, NAV | Chlordane, Chlorpyrifos, DDT, Diazinon, Dieldrin, Diuron, Invasive Species, Group A Pesticides, Mercury, PCBs | N/A |
| Head of Old River | Old River | Stream Channel | 510.00 | Delta Waterways | MUN, AGR, PRO, IND, POW, REC-1, REC-2, FRESH(WARM), FRESH(COLD), MIGR(WARM), MIGR(COLD), SPAWN, WILD, NAV | Chlordane, Chlorpyrifos, DDT, Diazinon, Dieldrin, Diuron, Invasive Species, Group A Pesticides, Mercury, PCBs | N/A |

¹⁰ California Rapid Assessment Method (CRAM) score of impacted sites provided by the Permittee.

Individual Direct Impact Locations

The following table shows individual impact locations.

| Table 2: Individual Direct Impact Information | | | | | | | | | | | |
|--|-----------|------------|--------------------------------------|-------------------------------------|------------------------|--------|-------------|-------------|-----------------|-------------|-------------|
| Site ID | Latitude | Longitude | Indirect Impact Requiring Mitigation | | Direct Impact Duration | Dredge | | | Fill/Excavation | | |
| | | | Yes | No | | Acres | Cubic Yards | Linear Feet | Acres | Cubic Yards | Linear Feet |
| Old River at Tracy | 37.8103°N | 121.5428°W | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Temporary | - | - | - | 0.54 | - | 240 |
| | | | | | Permanent | - | - | - | - | - | - |
| Middle River | 37.8857°N | 121.4822°W | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Temporary | - | - | - | 0.10 | - | 112 |
| | | | | | Permanent | - | - | - | 0.12 | - | 144 |
| Grant Line Canal | 37.8199°N | 121.4483°W | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Temporary | - | - | - | 0.57 | - | 165 |
| | | | | | Permanent | - | - | - | 0.15 | - | 145 |
| Head of Old River – Spring Barrier | 37.8078°N | 121.3307°W | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Temporary | - | - | - | 0.13 | - | 166 |
| | | | | | Permanent | - | - | - | - | - | - |
| Head of Old River – Fall Barrier | 37.8078°N | 121.3307°W | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Temporary | - | - | - | 0.26 | - | 166 |
| | | | | | Permanent | - | - | - | - | - | - |
| Total Impacts | | | | | Temporary | - | - | - | 1.60 | - | 849 |
| | | | | | Permanent | - | - | - | 0.27 | - | 289 |

Compensatory Mitigation Information

The following table show individual compensatory mitigation information and locations.

Mitigation Bank Compensatory Mitigation Site Information

| Table 3: Mitigation Bank | | | | |
|---------------------------------|------------|---|-------------|-----------------------------|
| Mitigation Bank | Name: | Liberty Island Conservation Bank | | |
| | Website: | http://www.wildlandsinc.com | | |
| Contact Information | Name: | Julie Maddox | | |
| | Phone: | (916) 435-3555 | | |
| | Email: | jmaddox@wildlandsinc.com | | |
| Mitigation Location | County: | San Joaquin | | |
| | Latitude: | - | | |
| | Longitude: | - | | |
| Aquatic Resource Credit Type | | Mitigation Quantity | | |
| | | Acres | Linear Feet | Number of Credits Purchased |
| Shallow Water Habitat Credits | | - | - | 4.75 |
| Mitigation Bank | Name: | Kimball Island Mitigation Bank | | |
| | Website: | http://www.wildlandsinc.com/ | | |
| Contact Information | Name: | Julie Maddox | | |
| | Phone: | (916) 435-3555 | | |
| | Email: | jmaddox@wildlandsinc.com | | |
| Mitigation Location | County: | San Joaquin | | |
| | Latitude: | - | | |
| | Longitude: | - | | |
| Aquatic Resource Credit Type | | Mitigation Quantity | | |
| | | Acres | Linear Feet | Number of Credits Purchased |
| Shallow Water Habitat Credits | | - | - | 1.25 |

A. Environmental Review

On 16 March 2001, the Department of Water Resources, as lead agency, adopted an Initial Study/Mitigated Negative Declaration (IS/MND) (State Clearinghouse (SCH) No. 2000112054) for the Project and filed a Notice of Determination (NOD) at the SCH on 21 March 2001 and a revised NOD was filed at the SCH on 31 January 2012. The Central Valley Water Board is a responsible agency under CEQA (Pub. Resources Code, § 21069) and in making its determinations and findings, must presume that Department of Water Resources' adopted environmental document complies with the requirements of CEQA and is valid. (Pub. Resources Code, § 21167.3). The Central Valley Water Board has reviewed and considered the environmental document and finds that the environmental document prepared by the Department of Water Resources addresses the Project's water resource impacts. (Cal. Code Regs., tit. 14, § 15096, subd. (f)). The environmental document includes the mitigation monitoring and reporting program (MMRP) developed by the Department of Water Resources for all mitigation measures that have been adopted for the Project to reduce potential significant impacts. (Pub. Resources Code, § 21081.6, subd. (a)(1); Cal. Code Regs., tit. 14, § 15074, subd. (d)).

B. Incorporation by Reference

Pursuant to CEQA, these Findings of Facts (Findings) support the issuance of this Order based on the Project IS/MND, the application for this Order, and other supplemental documentation.

All CEQA project impacts, including those discussed in subsection C below, are analyzed in detail in the Project Final IS/MND which is incorporated herein by reference. Requirements under the purview of the Central Valley Water Board in the MMRP are incorporated herein by reference.

The Permittee's application for this Order, including all supplemental information provided, is incorporated herein by reference.

C. Findings

The IS/MND describes the potential significant environmental effects to water resources that were mitigated in the IS/MND. Having considered the whole of the record, including comments received during the public review process, the Central Valley Water Board makes the following findings:

- (1) Revisions in the project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and
- (2) There is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment. (Cal. Code Regs., tit. 14, § 15070.)

a.i. Potential Significant Impact:

Substantial adverse effect on candidate, sensitive, or special status species by the California Department of Fish and Wildlife or United State Fish and Wildlife Service;

substantial adverse impact on any riparian habitat; interference with the movement of any native resident or migratory fish or wildlife species within established corridors;

a.ii. Facts in Support of Finding:

Fisheries and Shallow Water Habitat

A number of studies and monitoring efforts are underway that relate to the Temporary Barriers Project. These include the USFWS salmon smolt survival studies through the Delta as part of the Vernalis Adaptive Management Program (VAMP), the DFG San Joaquin River salmon smolt outmigration monitoring and the DFG Adult Salmon Migration Tracking Study. The VAMP is a plan to experimentally manipulate flows in the lower San Joaquin River and exports to determine what combination of factors improves survivorship of salmon smolts out-migrating through the delta. The spring Head Old River barrier is an integral part of this program. The DWR provides funds to the USFWS through the Interagency Ecological Program (IEP) and the results of the study are reported by the USFWS.

The adult salmon migration study is a DFG study funded by CALFED. Although it is not a Temporary Barriers Project funded project, it is described here because it will provide valuable information on Temporary Barriers Project impacts to adult Chinook salmon. This study will use sonic tags to track the migration of San Joaquin adult salmon through the southern delta channels to determine if the area of the seasonal dissolved oxygen sag or the barriers present a hindrance to the upstream migration. The results of this migration study will be used to adaptively manage the Temporary Barriers Project if it is determined to be necessary. DFG is responsible for implementing this study as well as the San Joaquin smolt outmigration study and therefore they are responsible for the annual reporting.

Fish Community Sampling Since 1992, DFG has conducted the fish community sampling for the Temporary Barriers Project. This program was designed to determine the impacts of the Temporary Barriers Project on fish communities in the southern Delta. Unfortunately, the program was not able to answer this question because of very limited pre-project monitoring. Additionally, the monitoring effort was conducted throughout numerous barrier operational scenarios and hydrologic year types. Additional similar monitoring will provide limited additional information.

The field element of the fish community-sampling program will be discontinued and an extensive analysis of the existing data will be conducted. Because the program has established a large database through extensive sampling in the south Delta with a variety of gear types, it will be used to examine the factors driving the fish communities of the southern Delta. Comparing the data analysis results to environmental conditions posed by the Temporary Barriers Project will be the most effective method to assess the impacts of the Temporary Barriers Project to fish communities in the southern Delta.

A replacement fish-sampling program may be developed cooperatively between DFG and DWR. The focus of such a program would be an evaluation of fish passage past the barriers.

Salmon Smolt Monitoring Through the Head of Old River Barrier (DFG) Another effort that DWR will continue to fund is the DFG sampling of salmon smolts passing through the head of Old River barrier in the spring. This program is designed to

evaluate the potential impacts of entrainment of juvenile salmon through the culverts in the Head of Old River barrier. DFG conducted a preliminary study in 1997. Studies were not conducted in 1998 or 1999 because the Head of Old River barrier was not installed due to high San Joaquin River flows, however the study was conducted again in 2000. Objectives of the study include: 1) determining the numbers of coded-wire-tagged (cwt) and untagged salmon smolts that pass from the San Joaquin River into Old River through the culverts, 2) determine the diurnal effects of smolt passage, and 3) determine if cwt salmon released at Mossdale pass through the culverts in proportion to the percentage of flow diverted.

The Head of Old River Barrier is mitigation for the impacts of salmon smolt entrainment in the SWP Delta diversion facilities. DWR is investigating the feasibility of installing a USBR fish screen upstream of the culverts in the head of Old River Barrier in the spring to mitigate for impacts to salmon smolts, and potentially splittail juveniles, being entrained through the culverts. The culverts often need to be opened to improve conditions for the SDWA diverters downstream of the barrier. If the USBR screen is installed, the effectiveness of the screen will be monitored as well and the results reported annually.

Sherman Island Agricultural Diversion Evaluation Partial mitigation under the USACE permit for the operation of the South Delta Temporary Barriers Project called for DWR to fund screen installations on multiple agricultural siphons on Sherman Island. These agricultural diversion screens are intended to offset potential south delta project impacts to delta smelt. However, the effectiveness of siphon screens and their overall benefit to delta fishes is not well understood. The purpose is to compare entrainment losses of fishes between side by side screened and unscreened siphons over several diel cycles during a dry year irrigation season. This is to provide data on the site-specific impact of the Horseshoe Bend diversions and the effectiveness of screening. This study is funded through both the Temporary Barriers Project and the Interagency Ecological Program.

In 2000, DWR conducted an agricultural diversion evaluation on Horseshoe Bend. Conditions for that study to occur are not predictable; however, if the conditions exist in the year 2001, DWR will conduct a subsequent evaluation of the effectiveness of fish screens at this location. A summary of the results of the study in 2000 will be reported in the next IEP Newsletter. This is an ongoing effort to evaluate the effectiveness of fish screens on agricultural diversions.

Temporary Barriers Project Impact on Fish Salvage DWR proposes to prepare an annual summary report of fish salvage at the SWP and Central Valley Project (CVP) diversion facilities in the Delta and associated environmental conditions for the period of the operation of the Temporary Barriers Project each year. This is to: 1) monitor the effectiveness of the operation of the spring Head of Old River Barrier in reducing entrainment into Old River from the San Joaquin River, and 2) evaluate the operation of the culverts in the agricultural barriers in reducing entrainment of fish into the Delta diversion facilities. The results of this analysis will be used to adaptively manage the Temporary Barriers Project if it is determined to be necessary.

Water Quality and Hydrodynamics

A number of water quality and hydrodynamic studies and monitoring efforts are underway that relate to the Temporary Barriers Project.

Water Elevations and Flows in the Southern Delta DWR annually conducts monitoring of water elevations, flows and water quality in the southern Delta channels to evaluate the effects of the Temporary Barriers Project. The barriers are mitigation for impacts to the South Delta Water Agency diverters due to a lowering of water elevations and reduction in water quality due to diversions at the SWP and CVP diversion facilities during the irrigation season. DWR will continue to conduct and annually report on the monitoring and the results will be used to adaptively manage the Temporary Barriers Project if it is determined to be necessary.

Southern Delta Continuous Water Quality Monitoring The water quality sampling effort was expanded in 1999 to include the use of continuous recording multi-parameter instruments. This new effort will provide increased frequency and duration of sampling and the number of water quality parameters sampled. Interim water quality monitoring to insure compliance with turbidity standards required by the Regional Water Quality Control Board will continue as well. This monitoring will continue annually through the period of the Temporary Barriers Project permit extension.

Hydrologic Modeling The USGS and DWR annually monitor flows and velocities in the southern Delta channels. The data are summarized on an annual basis to record the actual hydrodynamics in the southern Delta. The data are incorporated into the hydrodynamic and particle modeling efforts. Multi-agency review of the models, including USGS, is accomplished through the Particle Tracking Project Work Team and the Bay-Delta Modeling Forum. This effort will continue and the results will be used to adaptively manage the Temporary Barriers Project if it is determined to be necessary.

Vegetation

Mason's Lilaepsis Since 1993, DWR has monitored Mason's lilaepsis populations up and downstream of the agricultural barriers. The methods changed over time to compensate for the dynamic nature of the plant's distribution. The results have been variable and it has been difficult to attribute a cause to the decline in number and surface area of the plant populations. The trend, however, over the period of the Temporary Barriers Project monitoring has indicated a decline in the populations. Therefore DWR staff have concluded that the Temporary Barriers Project may have impacted the Mason's lilaepsis populations in the vicinity of the barriers. DWR will work with the resource agencies and CALFED through the consultation process, if necessary, to determine appropriate mitigation and monitoring for Mason's lilaepsis.

D. Determination

The Central Valley Water Board has determined that the Project, when implemented in accordance with the MMRP and the conditions in this Order, will not result in any significant adverse water resource impacts. (Cal. Code Regs., tit. 14, § 15096, subd (h).)

Copies of this Form

In order to identify your project, it is necessary to include a copy of the Project specific Cover Sheet below with your report: please retain for your records. If you need to obtain a copy of the Cover Sheet you may download a copy of this Order as follows:

1. Go to: http://www.waterboards.ca.gov/water_issues/programs/cwa401/certifications.shtml
2. Find your Order in the table based on Applicant, Date, and Subject headers.

Report Submittal Instructions

1. Check the box on the Report and Notification Cover Sheet next to the report or notification you are submitting.
 - **Part A (Annual Report):** This report will be submitted annually from the anniversary of Project effective date until a Notice of Project Complete Letter is issued.
 - **Part B (Project Status Notifications):** Used to notify the Central Valley Water Board of the status of the Project schedule that may affect Project billing.
 - **Part C (Conditional Notifications and Reports):** Required on a case by case basis for accidental discharges of hazardous materials, violation of compliance with water quality standards, notification of in-water work, or other reports.
2. Sign the Report and Notification Cover Sheet and attach all information requested for the Report Type.
3. **Electronic Report Submittal Instructions:**
 - Submit signed Report and Notification Cover Sheet and required information via email to: centralvalleysacramento@waterboards.ca.gov and cc: Stephanie.Tadlock@waterboards.ca.gov
 - Include in the subject line of the email:
Subject: ATTN: Stephanie Tadlock; Reg. Measure ID: 410386_Report

Definition of Reporting Terms

1. **Active Discharge Period:** The active discharge period begins with the effective date of this Order and ends on the date that the Permittee receives a Notice of Completion of Discharges Letter or, if no post-construction monitoring is required, a Notice of Project Complete Letter. The Active Discharge Period includes all elements of the Project including site construction and restoration, and any Permittee responsible compensatory mitigation construction.
2. **Request for Notice of Completion of Discharges Letter:** This request by the Permittee to the Central Valley Water Board staff pertains to projects that have post construction monitoring requirements, e.g. if site restoration was required to be monitored for 5 years following construction. Central Valley Water Board staff will review the request and send a Completion of Discharges Letter to the Permittee upon approval. This letter will initiate the post-discharge monitoring period and a change in fees from the annual

active discharge fee to the annual post-discharge monitoring fee.

3. **Request for Notice of Project Complete Letter:** This request by the Permittee to the Central Valley Water Board staff pertains to projects that either have completed post-construction monitoring and achieved performance standards or have no post-construction monitoring requirements, and no further Project activities are planned. Central Valley Water Board staff will review the request and send a Project Complete Letter to the Permittee upon approval. Termination of annual invoicing of fees will correspond with the date of this letter.
4. **Post-Discharge Monitoring Period:** The post-discharge monitoring period begins on the date of the Notice of Completion of Discharges Letter and ends on the date of the Notice of Project Complete Letter issued by the Central Valley Water Board staff. The Post-Discharge Monitoring Period includes continued water quality monitoring or compensatory mitigation monitoring.
5. **Effective Date:** 5 December 2017

Map/Photo Documentation Information

When submitting maps or photos, please use the following formats.

1. **Map Format Information:**

Preferred map formats of at least 1:24000 (1" = 2000') detail (listed in order of preference):

- **GIS shapefiles:** The shapefiles must depict the boundaries of all project areas and extent of aquatic resources impacted. Each shape should be attributed with the extent/type of aquatic resources impacted. Features and boundaries should be accurate to within 33 feet (10 meters). Identify datum/projection used and if possible, provide map with a North American Datum of 1983 (NAD38) in the California Teale Albers projection in feet.
- **Google KML files** saved from Google Maps: My Maps or Google Earth Pro. Maps must show the boundaries of all project areas and extent/type of aquatic resources impacted. Include URL(s) of maps. If this format is used include a spreadsheet with the object ID and attributed with the extent/type of aquatic resources impacted.
- **Other electronic format** (CAD or illustration format) that provides a context for location (inclusion of landmarks, known structures, geographic coordinates, or USGS DRG or DOQQ). Maps must show the boundaries of all project areas and extent/type of aquatic resources impacted. If this format is used include a spreadsheet with the object ID and attributed with the extent/type of aquatic resources impacted.
- Aquatic resource maps marked on paper **USGS 7.5 minute topographic maps** or **Digital Orthophoto Quarter Quads (DOQQ)** printouts. Maps must show the boundaries of all project areas and extent/type of aquatic resources impacted. If this format is used include a spreadsheet with the object ID and attributed with the extent/type of aquatic resources impacted.

2. **Photo-Documentation:** Include a unique identifier, date stamp, written description of photo details, and latitude/longitude (in decimal degrees) or map indicating location of photo. Successive photos should be taken from the same vantage point to compare pre/post construction conditions.

REPORT AND NOTIFICATION COVER SHEET

Project: South Delta Temporary Barriers Project
Permittee: Department of Water Resources
Reg. Meas. ID: 410386 **Place ID:** 830110
WDID: 5B39CR00280
Order Effective Date: 5 December 2017
Order Expiration Date: 4 December 2022

Report Type Submitted

Part A – Project Reporting

- Report Type 1 Quarterly Report
- Report Type 2 Annual Report
- Report Type 3 Dissolved Oxygen Water Quality Analysis Outline
- Report Type 4 Dissolved Oxygen Water Quality Analysis Work Plan
- Report Type 5 Nutrient Data Analysis Plan
- Report Type 6 Targeted Monitoring and Analysis Plan

Part B - Project Status Notifications

- Report Type 7 Commencement of Construction
- Report Type 8 Request for Removal of Barrier Report

Part C - Conditional Notifications and Reports

- Report Type 9 Accidental Discharge of Hazardous Material Report
- Report Type 10 Violation of Compliance with Water Quality Standards Report
- Report Type 11 In-Water Work/Diversions Water Quality Monitoring Report
- Report Type 12 Modifications to Project Report
- Report Type 13 Transfer of Long-Term BMP Maintenance Report
- Report Type 14 Observation of Harmful Algal Bloom Notification
- Report Type 15 Evaluation of Dissolved Oxygen and Harmful Algal Bloom

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

Print Name ¹

Affiliation and Job Title

Signature

Date

¹STATEMENT OF AUTHORIZATION (include if authorization has changed since application was submitted)

I hereby authorize _____ to act in my behalf as my representative in the submittal of this report, and to furnish upon request, supplemental information in support of this submittal.

Permittee's Signature

Date

***This Report and Notification Cover Sheet must be signed by the Permittee or a duly authorized representative and included with all written submittals.**

Part A – Project Reporting

| | |
|------------------------|--|
| Report Type 1 | Quarterly Report |
| Report Purpose | Notifies Central Valley Water Board staff of the Project status and environmental compliance activities on a quarterly basis. |
| When to Submit | For each quarter as follows: April – June (report due 1 st of August); July – September (report due 1 st of November); October – December (report due 1 st of February). Quarterly reporting shall continue until a Notice of Project Complete Letter is issued to the Permittee. |
| Report Contents | <ol style="list-style-type: none"> 1. Construction Summary Describe Project progress and schedule including initial ground disturbance, site clearing and grubbing, road construction, site construction, and the implementation status of construction storm water Best Management Practices (BMPs¹¹). If construction has not started, provide estimated start date. 2. Event Summary Describe distinct Project activities and occurrences, including environmental monitoring, surveys, and inspections. 3. Photo Summary Provide photos of Project activities. For each photo, include a unique site identifier, date stamp, written description of photo details, and latitude/longitude (in decimal degrees) or map indicating location of photo. Successive photos should be taken from the same vantage point to compare pre/post construction conditions. 4. Compliance Summary <ol style="list-style-type: none"> a) List name and organization of environmental surveyors, monitors, and inspectors involved with monitoring environmental compliance for the reporting period. b) List associated monitoring reports for the reporting period. Include sampling reports. c) Summarize observed incidences of non-compliance, compliance issues, minor problems, or occurrences. d) Describe each observed incidence in detail. List monitor name and organization, date, location, type of incident, corrective action taken (if any), status, and resolution. |

¹¹ Best Management Practices (BMPs) is a term used to describe a type of water pollution or environmental control.

| | |
|------------------------|--|
| | <p>5. Harmful Algal Bloom Field Observation Log</p> <p>a) A written summary report of visual observations of the following occurrences within the South Delta in vicinity of the waterbody segments where the barriers are placed:</p> <p>i) Presence and description of harmful algal blooms. Reports of algae and cyanobacterial blooms should follow methods used by the Permittee’s Stockton Deep Water Ship Channel monitoring program and/or guides provided by the Surface Water Ambient Monitoring Program (http://www.mywaterquality.ca.gov/habs/resources/field.html)</p> <p>ii) Presence and extent of invasive floating and submerged aquatic vegetation.</p> <p>iii) Presence of any observed dead or injured wildlife.</p> |
| Report Type 2 | Annual Report |
| Report Purpose | Notify the Central Valley Water Board staff of Project status during active discharge, operation of barriers, and post-discharge monitoring periods. |
| When to Submit | Annual reports shall be submitted each year on the 1st day of December beginning one year following the effective date of the Order. Annual reports shall continue until a Notice of Project Complete Letter is issued to the Permittee. If the barriers are not constructed during an authorized installation and removal period, an annual report is not required. |
| Report Contents | <p>The contents of the annual report shall include the topics indicated below for each project period. Report contents are outlined in Annual Report Topics below.</p> <p><u>During the Active Discharge Period</u></p> <ul style="list-style-type: none"> • Topic 1: Construction Summary • Topic 2: Mitigation for Temporary Impacts Status • Topic 3: Compensatory Mitigation for Permanent Impacts Status <p><u>During the Post-Discharge Monitoring Period</u></p> <ul style="list-style-type: none"> • Topic 2: Mitigation for Temporary Impacts Status • Topic 3: Compensatory Mitigation for Permanent Impacts Status <p><u>During Entire Duration of the Order</u></p> <ul style="list-style-type: none"> • Topic 4: Targeted Monitoring |

| Annual Report Topics (1-4) | |
|------------------------------|---|
| Annual Report Topic 1 | Construction Summary |
| When to Submit | With the annual report during the Active Discharge Period. |
| Report Contents | <ol style="list-style-type: none"> 1. Project progress and schedule including initial ground disturbance, site clearing and grubbing, road construction, site construction, and the implementation status of construction storm water best management practices (BMPs). If construction has not started, provide estimated start date and reasons for delay. 2. Map showing general Project progress. 3. Pre- and post-removal photo documentation of all barrier sites. 4. If applicable: <ol style="list-style-type: none"> a. Summary of Conditional Notification and Report Types 6 and 7 (Part C below). b. Summary of Certification Deviations. See Certification Deviation Attachment for further information. |
| Annual Report Topic 2 | Mitigation for Temporary Impacts Status |
| When to Submit | With the annual report during both the Active Discharge Period and Post-Discharge Monitoring Period. |
| Report Contents | <ol style="list-style-type: none"> 1. Planned date of initiation and map showing locations of mitigation for temporary impacts to waters of the state and all upland areas of temporary disturbance which could result in a discharge to waters of the state. 2. If mitigation for temporary impacts has already commenced, provide a map and information concerning attainment of performance standards contained in the restoration plan. |
| Annual Report Topic 3 | Compensatory Mitigation for Permanent Impacts Status |
| When to Submit | With the annual report during both the Active Discharge Period and Post-Discharge Monitoring Period. |
| Report Contents | <p>*If not applicable report N/A.</p> <p>Part A. Permittee Responsible</p> <ol style="list-style-type: none"> 1. Planned date of initiation of compensatory mitigation site installation. 2. If installation is in progress, a map of what has been completed to date. 3. If the compensatory mitigation site has been installed, provide a final map and information concerning attainment of performance standards contained in the compensatory mitigation plan. <p>Part B. Mitigation Bank or In-Lieu Fee</p> <ol style="list-style-type: none"> 1. Status or proof of purchase of credit types and quantities. 2. Include the name of bank/ILF Program and contact information. 3. If ILF, location of project and type if known. |

| | |
|------------------------------|---|
| Annual Report Topic 4 | Targeted Monitoring |
| When to Submit | With the annual report during the entire duration of the Order. |
| Report Contents | <p>Annual data reports that include and summarize all data collected in Table 5: Targeted Monitoring, as well as critical hydrologic information. These annual data reports shall include:</p> <ol style="list-style-type: none"> i. Daily minimum, average, and maximum DO and pH plots, which show the datelines for installation and removal of barriers, and manipulations likely to change water quality such as raising barriers, opening or closing or securing flap gates and notching of the barriers; ii. Comparison of key parameters (e.g., DO, pH, chlorophylls) from stations representing conditions upstream and downstream of barriers; iii. Visual observations of changes in aquatic weed recorded in the vicinity of the barriers; and iv. Reports shall include monitoring data provided in tabular electronic form. |
| Report Type 3 | Dissolved Oxygen Water Quality Analysis Work Plan |
| Report Purpose | Provides a work plan of the Dissolved Oxygen Water Quality Analysis Report and a schedule for completion. |
| When to Submit | 31 January 2018 |
| Report Contents | <ol style="list-style-type: none"> 1. A work plan of the Dissolved Oxygen Water Quality Analysis Report, which will briefly summarize: <ul style="list-style-type: none"> • Potential causes and extent of the Dissolved Oxygen impairment within the South Delta Channels; • Status and trends of parameters monitored (including temperature, Dissolved Oxygen, nutrients, BOD, chlorophyll-a, and pH), including whether there are significant changes seasonally, yearly, and with and without barriers in place; • Effects of the barriers on water residence time and temperature; • Predictions of conditions when low Dissolved Oxygen and harmful algal blooms are likely to occur; and • Summary of beneficial uses of concern as they coincide with Dissolved Oxygen impacts, with a key focus on the timing and location of sensitive and special status species. 2. Schedule for completion of the Dissolved Oxygen Water Quality Analysis Report. |
| Report Type 4 | Dissolved Oxygen Water Quality Analysis Report |
| Report Purpose | Provides Central Valley Water Board staff an assessment of the South Delta channels affected by the installation of the barriers. |

| | |
|------------------------|--|
| When to Submit | Within 2 years of the Dissolved Oxygen Water Quality Analysis Work Plan approval. |
| Report Contents | <ol style="list-style-type: none"> 1. Analyze all available data gathered from monitoring data along with any other appropriate, readily available existing data. 2. Assess the South Delta channels affected by the installation of the barriers, discussing the following: <ol style="list-style-type: none"> c. Potential causes and extent of the Dissolved Oxygen impairment within the South Delta Channels; d. Status and trends of parameters monitored (including temperature, Dissolved Oxygen, nutrients, BOD, chlorophyll-a, and pH), including whether there are significant changes seasonally, yearly, and with and without barriers in place; e. Potential effects of the barriers on water residence time and temperature; f. Predictions of conditions when low Dissolved Oxygen and harmful algal blooms are likely to occur; and g. Summary of beneficial uses of concern as they coincide with Dissolved Oxygen impacts, with a key focus on the timing and location of sensitive and special status species. |
| Report Type 5 | Nutrient Data Analysis Plan |
| Report Purpose | Provides a data analysis plan to provide information that can support the evaluation of the potential effects of nutrients on algae and aquatic vegetation growth and abundance (biomass) in the San Joaquin River and south Delta channels. |
| When to Submit | 31 January 2018 |
| Report Contents | <p>Available nutrient data will be evaluated, and if necessary, additional nutrient samples will be collected. The nutrient data analysis plan shall include water quality parameters related to the potential effects of barrier installation on algae and aquatic plants in the vicinity of the barriers. At a minimum, monitoring parameters will include:</p> <ul style="list-style-type: none"> • harmful algal blooms, • specific conductance, • nitrate, • chlorophyll fluorescence, • chlorophyll A, • pheophytin A, • dissolved ammonia, • dissolved nitrite and nitrate, • total nitrogen, • dissolved orthophosphate, • total phosphorous, and • dissolved organic nitrogen. <p>The comprehensive analysis of nutrients will be included in the dissolved oxygen study.</p> |

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| Report Type 6 | Targeted Monitoring and Analysis Plan |
| Report Purpose | Provides Central Valley Water Board staff of the methods, detection, and reporting limits for Targeted Monitoring. |
| When to Submit | 31 January 2018 |
| Report Contents | Provide a monitoring and analysis plan describing the specific methods and detection and reporting limits, protocols for sample collection, and analysis and quality assessment and quality control procedures for Targeted Monitoring. |

Part B – Project Status Notifications

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| Report Type 7 | Commencement of Construction |
| Report Purpose | Notify Central Valley Water Board staff prior to the start of construction. |
| When to Submit | Must be received at least seven (7) days prior to start of initial ground disturbance activities. |
| Report Contents | <ol style="list-style-type: none"> 1. Date of commencement of construction. 2. Anticipated date when discharges to waters of the state will occur. 3. Project schedule milestones including a schedule for onsite compensatory mitigation, if applicable. 4. Construction Storm Water General Permit WDID No. |
| Report Type 8 | Notice of Removal of Barriers |
| Report Purpose | Notify Central Valley Water Board staff that the temporary barriers have been removed from waters of the state. |
| When to Submit | Must be received by Central Valley Water Board staff within seven (7) days following removal of all temporary barriers. |
| Report Contents | <ol style="list-style-type: none"> 1. Date each barrier was removed. 2. Method of removal and placement location of removed materials. 3. Summary of all dredging activities, if applicable. |

Part C – Conditional Notifications and Reports

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| Report Type 9 | Accidental Discharge of Hazardous Material Report |
| Report Purpose | Notifies Central Valley Water Board staff that an accidental discharge of hazardous material has occurred. |
| When to Submit | Within five (5) working days following the date of an accidental discharge. Continue reporting as required by Central Valley Water Board staff. |
| Report Contents | <ol style="list-style-type: none"> 1. The report shall include the OES Incident/Assessment Form, a full description and map of the accidental discharge incident (i.e. location, time and date, source, discharge constituent and quantity, aerial extent, and photo documentation). If applicable, the OES Written Follow-Up Report may |

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| | <p>be substituted.</p> <ol style="list-style-type: none"> 2. If applicable, any required sampling data, a full description of the sampling methods including frequency/dates and times of sampling, equipment, locations of sampling sites. 3. Locations and construction specifications of any barriers, including silt curtains or diverting structures, and any associated trenching or anchoring. |
| Report Type 10 | Violation of Compliance with Water Quality Standards Report |
| Report Purpose | Notifies Central Valley Water Board staff that a violation of compliance with water quality standards has occurred. |
| When to Submit | The Permittee shall report any event that causes a violation of water quality standards within three (3) working days of the noncompliance event notification to Central Valley Water Board staff. |
| Report Contents | The report shall include: the cause; the location shown on a map; and the period of the noncompliance including exact dates and times. If the noncompliance has not been corrected, include: the anticipated time it is expected to continue; the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and any monitoring results if required by Central Valley Water Board staff. |
| Report Type 11 | In-Water Work Water Quality Monitoring Report |
| Report Purpose | Notifies Central Valley Water Board staff of the start and completion of in-water work. Reports the sampling results during in-water work and during the entire duration of temporary barrier installation. |
| When to Submit | Within forty eight (48) hours prior to the start of in-water work. Within three (3) working days following the completion of in-water work. Continue reporting in accordance with the approved water quality monitoring plan or as indicated in XIV.C.3. |
| Report Contents | As required by the approved water quality monitoring plan or as indicated in XIV.C.3. |
| Report Type 12 | Modifications to Project Report |
| Report Purpose | Notifies Central Valley Water Board staff if the Project, as described in the application materials, is altered in any way or by the imposition of subsequent permit conditions by any local, state or federal regulatory authority. |
| When to Submit | If Project implementation as described in the application materials is altered in any way or by the imposition of subsequent permit conditions by any local, state or federal regulatory authority. |
| Report Contents | A description and location of any alterations to Project implementation. Identification of any Project modifications that will interfere with the Permittee's compliance with the Order. |
| Report Type 13 | Transfer of Long-Term BMP Maintenance Report |
| Report Purpose | Notifies Central Valley Water Board staff of transfer of long-term BMP maintenance responsibility. |
| When to Submit | At least 10 working days prior to the transfer of BMP maintenance responsibility. |
| Report Contents | A copy of the legal document transferring maintenance responsibility of post-construction BMPs. |

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| Report Type 14 | Observation of Harmful Algal Bloom Notification |
| Report Purpose | Notifies Central Valley Water Board staff of presence of a harmful algal bloom. |
| When to Submit | If a harmful algal bloom is observed. |
| Report Contents | Minimum information provided when reporting the bloom shall include the location, date, and a description of the bloom (appearance and size), any presence of dead or injured wildlife and a follow-up contact number or email. Site photos showing the presence and magnitude of the bloom shall be submitted, if available. The information provided shall be sent to the Central Valley Water Board contact and the Central Valley Water Board Cyanobacteria Coordinator (or alternate) at CentralValleySacramento@waterboards.ca.gov, ATTN: Harmful Algal Blooms Coordinator for immediate follow-up. |
| Report Type 15 | Evaluation of Dissolved Oxygen and Harmful Algal Bloom |
| Report Purpose | Provides Central Valley Water Board staff of actions or methods to improve presence of increased dissolved oxygen and reduce harmful algal blooms. |
| When to Submit | 12 May 2021 – If the Executive Officer determines that the barriers are contributing to dissolved oxygen impairments in the Delta. |
| Report Contents | Provide a preliminary evaluation of the feasibility and potential effectiveness, costs, benefits and impacts of actions to improve dissolved oxygen and reduce harmful algal blooms within the South Delta Channels affected by the installation of the Delta Barriers. Actions to be evaluated should include: <ul style="list-style-type: none"> • Improved water circulation in OR/MR/GLC through alternative flow management strategies, including alternative barrier design and operation; • Alternatives to agricultural barriers to provide water to south Delta growers; • Aeration; and • Coordination to manually remove water hyacinth and other floating and submerged aquatic vegetation. |

SIGNATORY REQUIREMENTS

*All Documents Submitted In Compliance With This Order
Shall Meet The Following Signatory Requirements:*

1. All applications, reports, or information submitted to the Central Valley Water Quality Control Board (Central Valley Water Board) must be signed and certified as follows:
 - a) For a corporation, by a responsible corporate officer of at least the level of vice-president.
 - b) For a partnership or sole proprietorship, by a general partner or proprietor, respectively.
 - c) For a municipality, or a state, federal, or other public agency, by either a principal executive officer or ranking elected official.
2. A duly authorized representative of a person designated in items 1.a through 1.c above may sign documents if:
 - a) The authorization is made in writing by a person described in items 1.a through 1.c above.
 - b) The authorization specifies either an individual or position having responsibility for the overall operation of the regulated activity.
 - c) The written authorization is submitted to the Central Valley Water Board Staff Contact prior to submitting any documents listed in item 1 above.
3. Any person signing a document under this section shall make the following certification:

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”

Certification Deviation Procedures

Introduction

These procedures are put into place to preclude the need for Order amendments for minor changes in the Project routing or location. Minor changes or modifications in project activities are often required by the Permittee following start of construction. These deviations may potentially increase or decrease impacts to waters of the state. In such cases, a Certification Deviation, as defined in Section L of the Order, may be requested by the Permittee as set forth below:

Process Steps

Who may apply: The Permittee or the Permittee's duly authorized representative or agent (hereinafter, "Permittee") for this Order.

How to apply: By letter or email to the 401 staff designated as the contact for this Order.

Certification Deviation Request: The Permittee will request verification from the Central Valley Water Board staff that the project change qualifies as a Certification Deviation, as opposed to requiring an amendment to the Order. The request should:

1. Describe the Project change or modification:
 - a. Proposed activity description and purpose;
 - b. Why the proposed activity is considered minor in terms of impacts to waters of the state;
 - c. How the Project activity is currently addressed in the Order; and,
 - d. Why a Certification Deviation is necessary for the Project.
2. Describe location (latitude/longitude coordinates), the date(s) it will occur, as well as associated impact information (i.e., temporary or permanent, federal or non-federal jurisdiction, water body name/type, estimated impact area, etc.) and minimization measures to be implemented.
3. Provide all updated environmental survey information for the new impact area.
4. Provide a map that includes the activity boundaries with photos of the site.
5. Provide verification of any mitigation needed according to the Order conditions.
6. Provide any other information required by Central Valley Water Board staff to determine whether the Project change or modification necessitates additional environmental review. (Cal. Code Regs., tit. 14, §§ 15061, 15162-15164.)

Post-Discharge Certification Deviation Reporting:

1. Within 30 calendar days of completing the approved Certification Deviation activity, the Permittee will provide a post-discharge activity report that includes the following information:
 - a. Activity description and purpose;
 - b. Activity location, start date, and completion date;
 - c. Erosion control and pollution prevention measures applied;
 - d. The net change in impact area by water body type(s) in acres, linear feet and cubic yards;
 - e. Mitigation plan, if applicable; and,
 - f. Map of activity location and boundaries; post-construction photos.

Annual Summary Deviation Report:

1. Until a Notice of Completion of Discharges Letter or Notice of Project Complete Letter is issued, include in the Annual Project Report (see Construction Notification and Reporting attachment) a compilation of all Certification Deviation activities through the reporting period with the following information:
 - a. Site name(s).
 - b. Date(s) of Certification Deviation approval.
 - c. Location(s) of authorized activities.
 - d. Impact area(s) by water body type prior to activity in acres, linear feet and cubic yards, as originally authorized in the Order.
 - e. Actual impact area(s) by water body type in, acres, linear feet and cubic yards, due to Certification Deviation activity(ies).
 - f. The net change in impact area by water body type(s) in acres, linear feet and cubic yards;
 - g. Mitigation to be provided (approved mitigation ratio and amount).