STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

In the Matter of Water Quality Certification for the

MERIDIAN FARMS WATER COMPANY
MERIDIAN FARMS FISH SCREEN PROJECT – PHASE 2

SOURCE: Sacramento River

COUNTY: Sutter

WATER QUALITY CERTIFICATION FOR FEDERAL PERMIT OR LICENSE

BY THE EXECUTIVE DIRECTOR:

I. Background and Project Description

Meridian Farms Water Company (Applicant) filed a petition with the State Water Resources Control Board (State Water Board), Division of Water Rights (Division) to change its existing points of diversion for Water Right License No. 4676B (Application No. 1074B). The Applicant currently diverts water at three points of diversion: Meridian, Drexler, and Grimes. Each of these diversions previously had no fish screen.

The Meridian Farms Fish Screen Project is being conducted in two phases. In 2010, the Applicant added a fish screen and other facilities to the Grimes diversion and pumping plant (Phase 1). The water quality certification (certification) for Phase 1 was issued on June 5, 2008, by the Central Valley Regional Water Quality Control Board (Central Valley Regional Board). The Meridian Farms Fish Screen Project – Phase 2 (Project) is covered by this certification. As part of Phase 2, the Applicant is proposing to construct a consolidated point of diversion and fish screen for the Meridian and Drexler points of diversion. This new point of diversion will retain the Meridian name. Under its existing Water Rights License No. 4676B, the Applicant is limited to the quantity of water that can be beneficially used and shall not exceed 138 cubic feet per second (cfs) by direct diversion from March 1 to November 1 of each year, from the Sacramento River, tributary to Suisun Bay, for the purpose of irrigation. After consolidation of the Meridian and Drexler diversions, the flow capacity of the new consolidated "Meridian" point of diversion, will be 135 cfs.

The Project is located in the town of Meridian, along the Sacramento River in Sutter County. Figures 1 and 2 in Attachment A show the phased work and the fish screen, respectively.

The existing Meridian diversion structure and pumping plant are located on the east side of the Sacramento River, north of California State Route 20 where the Meridian Bridge crosses the Sacramento River. The new Meridian diversion will be located approximately 50 feet upstream of the existing diversion, and be equipped with fish screens to prevent the entrainment of migrating fish. The new Meridian pumping plant

will be located approximately 50 feet north of the existing Meridian pumping plant. The new Meridian diversion and pumping plant will convey water to the Drexler service area through the Main Canal and the Drexler conveyance pipeline (constructed as part of Phase 1).

The Main Canal runs southeast from the location of the existing and proposed Meridian pumping plant and connects to the existing Drexler conveyance pipeline. The Drexler conveyance pipeline continues south and then west to the existing Drexler diversion and pumping plant. The existing Drexler diversion and pumping plant, which are located on the east side of the Sacramento River between Summy Road and Wilbur Road, will be removed. A new Drexler pumping plant will be constructed where the Main Canal connects to the Drexler conveyance pipeline.

Project components include: 1) removal of the existing Meridian diversion and pumping plant; 2) construction of a new 135 cfs Meridian diversion structure, equipped with retractable cylindrical fish screens and pumping plant; 3) removal of the existing Drexler diversion and pumping plant; 4) construction of a new 35 cfs Drexler pumping plant to deliver flows to the Drexler Service Area via the newly constructed Drexler pipeline; 5) modification of the existing Drexler outlet box; 6) installation of 54-inch and 74-inch discharge pipelines to convey water from the Meridian pumping plant to the Main Canal; 7) an increase in the capacity of the Main Canal to convey flows to the Drexler Service Area; and 8) installation of a liner for approximately 2,500 feet of the Grimes Canal, if funding is available. The main Project components are described in more detail below.

Meridian Diversion and Pumping Plant

- Meridian Diversion Fish Screens: Two 20-foot long, 60-inch diameter cylindrical, retractable, self-cleaning fish screens will be installed at the Meridian Diversion. The total flow-through capacity of the screens will be 135 cfs. The fish screens' brush cleaning system, driven by hydraulic motors, is designed to rotate the cylindrical screens against fixed external and internal brushes.

  Pile supported tracks will be installed for screen removal during periodic maintenance or in the irrigation off-season when no water is diverted. The pile supported tracks will allow the screens to be removed from the water using a motorized hoist and cable system. A platform will be constructed at the top of the tracks to provide access to the screens when they are out of the water.

  When in operation, the screen mounts to a docking inlet. The docking inlet is covered by a trash rack to prevent debris from entering the manifold when the screens are out of the water. This docking inlet will be part of a 20-foot long manifold. The manifold will connect to a 72-inch intake pipeline that runs through the levee to the Meridian pumping plant. The manifold wil either be supported or a concrete slab and H-piles or be mounted directly to the piles.

- Conveyance from the River Inlet to Wet Well: The inlet structure will consist of two 60-inch steel T-shaped intake structures, each with two fish screens. The intake structures will be connected to a short segment of 84-inch steel pipe. The 84-inch pipe will then be reduced to connect to a 72-inch steel pipe, which will transition to a 72-inch reinforced concrete pipe before passing through the levee and underneath North Meridian Road to the Meridian pumping plant wet well. The fish screens,

intake structures, and segment of 84-inch pipe will be supported by a three-foot, six-inch thick concrete pad supported on piles.

The layout of the screens may be adjusted when removing motors for inspection and maintenance. To enable a change in screen layout, tracks will be mounted on piles. Screens will be pulled from the river by a winch.

- Deflection Piles: Deflection piles may not be necessary with the use of the retractable screens. If necessary, 10 steel deflection piles will be installed just upstream of the fish screens in the river to protect the fish screens from large debris floating in the river. Steel flanges mounted on the deflection piles will be approximately 15 inches in diameter and 14 inches deep. The top of the deflection piles will be submerged a minimum of three feet as required for navigable waterways.

- Gate Structure: A sluice gate with 72-inch diameter thimbles will be mounted in a concrete structure on the water-side of the levee. The gate will connect to the 72-inch inlet pipeline, which will pass water through the levee and to the Meridian pumping plant.

- Wet Well: The pumping plant wet well structure will be constructed on the east side of the Sacramento River at the northeast corner of North Meridian Road and Alameda Street. The inside dimensions of the wet well are 35-feet wide by 46-feet long. The inlet pipeline will enter the wet well approximately 30 feet below grade. The wet well will direct the intake water to five vertical turbine pumps.

- Diverting Water Around the Work Site: Construction of the Meridian diversion fish screen, intake pipes, and valve vault must take place inside a sheet pile cofferdam to protect the site from flooding. Interlocking sheet piles will be driven into the river bottom using a vibratory or impact hammer attached to a crane. Installation of the cofferdam will begin after July 1 to minimize impacts to special status aquatic species. Cofferdams will be removed by October 1. However, the National Marine Fisheries Service may extend the date for removal of the cofferdam to November 1.

  After the sheet pile cofferdam is constructed, the river bottom will be excavated five feet. The H-piles will be driven into the ground, so that the top of the H-piles are level with the excavated river bottom (approximately five feet below the original river bottom). Next the concrete tremie seal will be poured to seal the cofferdam. Once the tremie seal sets, the cofferdam will be dewatered and the concrete support pad will be poured above the H-piles. The fish screens and intake pipes will be mounted on the concrete support pad.

  A condition of this certification requires the Applicant to develop a contingency plan to prevent water contamination in the event of concrete tremie seal failure. Sump pumps inside the cofferdam will pump water out of the cofferdam into the river and then operate continuously to keep seeping river water from flooding the work site.

  Before the concrete tremie seal is poured and prior to cofferdam dewatering, the Fish Rescue Plan (Attachment C) will be implemented to minimize potential construction-related effects to fish present in the Project area. The Fish Rescue Plan was

developed by the Applicant based on informal recommendations of the United States Fish and Wildlife Service, National Marine Fisheries Service, and California Department of Fish and Wildlife (CDFW).

The levee will be excavated to allow for the installation of the Meridian pumping plant intake and valve vault. The levee will be replaced with the excavated material, if it meets requirements for levee use. The material will be placed in six-inch lifts and compacted to 90 percent relative density in accordance with Central Valley Flood Protection Board requirements.

Removal of Existing Diversions and Pumping Plants

The existing Meridian diversion and pumping plant and the existing Drexler diversion and pumping plant will be removed once the new Meridian diversion and pumping plant and Drexler relift pumping plant are constructed and operational. At a minimum, Project activities will include removing the pumps, equipment platforms, electrical equipment, gauging stations, pile supports, and river-side pipes. Pumps, pipes, and support structures will be cut into manageable pieces for removal. These pieces will be moved to landside stockpiles and then removed by truck to an appropriate waste disposal facility.

The levee will be excavated to remove the existing discharge pipe and piles. Sheet pile cofferdams may be required to protect the work in the levee. The levee will be restored to pre-existing grades and in accordance with Central Valley Flood Protection Board requirements.

Both the Meridian and Drexler diversions will be removed from the Sacramento River. Cofferdams will be used during the removal of the two existing diversions. A large crane on a barge or located on top of the levee will be used for removing the existing diversions. The support piles for the existing diversions may be pulled out of the river; however, it is likely that the support piles may need to be cut three feet below the river bottom and abandoned in place in accordance with the Central Valley Flood Protection Board requirements. The diversion vaults will be demolished and the debris will be removed from the river bottom and bank with a backhoe and hauled to a landfill.

The Project also includes:

- Construction of the Meridian pumping plant and Drexler pumping plant;
- Modification of the Main Canal and potentially the Grimes Canal;
- Modification of check structures and turnouts; and
- Replacement of siphons.

Project best management practices (BMPs) include, but are not limited to:

- Installing silt fencing, temporary berms, and vegetative strips;
- Restricting the location for equipment cleaning;
- Restricting the location(s) for temporary sediment disposal; and
- Retaining runoff onsite.

II. Regulatory Authority

Water Quality Certification and Related Authorities

The federal Clean Water Act (CWA) (33 U.S.C. §§ 1251-1387) was enacted "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." (33 U.S.C. § 1251(a).) Section 101 of the CWA (33 U.S.C. § 1251(g)) requires federal agencies to "co-operate with the State and local agencies to develop comprehensive solutions to prevent, reduce and eliminate pollution in concert with programs for managing water resources."

Section 401 of the CWA (33 U.S.C. §1341) requires every applicant for a federal license or permit which may result in a discharge into navigable waters to provide the licensing or permitting federal agency with certification that the project will be in compliance with specified provisions of the CWA, including water quality standards and implementation plans promulgated pursuant to section 303 of the CWA (33 U.S.C. § 1313). CWA section 401 directs the agency responsible for certification to prescribe effluent limitations and other limitations necessary to ensure compliance with the CWA and with any other appropriate requirement of state law. Section 401 further provides that state certification conditions shall become conditions of any federal license or permit for the project. The State Water Board is designated as the state water pollution control agency for all purposes stated in the CWA and any other federal act. (Wat. Code, § 13160.) The State Water Board's Executive Director has been delegated the authority to issue a decision on a water quality certification application. (Cal. Code Regs., tit. 23, § 3838, subd. (a).)

On October 30, 2012, the State Water Board provided notice of receipt of a complete application for the Project to the applicable parties pursuant to California Code of Regulations, title 23, section 3858(c). The State Water Board provided public notice of the application pursuant to California Code of Regulations, title 23, section 3858 by posting information describing the Project on the State Water Board's website on November 1, 2012. No comments were received. On December 10, 2012, the State Water Board issued a denial without prejudice letter for the Applicant's October 12, 2012, request for certification for procedural reasons. A second application for certification was received by the State Water Board on March 22, 2013. On April 9, 2013, the State Water Board provided notice of receipt of a complete application for the Project to the applicable parties.

The United States Army Corps of Engineers (ACOE) has determined a Nationwide Permit No. 4 under section 404 of the CWA is required for the Project. The ACOE identification number for the Project is SPK201200026. The California Department of Fish and Wildlife (CDFW; formerly known as the California Department of Fish and Game) determined that an incidental take permit and a Streambed Alteration Agreement will be required. The Streambed Alteration Agreement is in effect as of April 24, 2013, and expires in two years.

Water Quality Control Plans and Related Authorities

The California Regional Water Quality Control Boards (Regional Water Boards) adopt, and the State Water Board approves, water quality control plans (basin plans) for each watershed basin in the State. The basin plans designate the beneficial uses of waters

within each watershed basin, and water quality objectives designed to protect those uses pursuant to section 303 of the CWA. (33 U.S.C. § 1313.) The beneficial uses together with the water quality objectives that are contained in the basin plans and state and federal anti-degradation requirements constitute California's water quality standards.

The Central Valley Regional Board adopted, and the State Water Board and the United States Environmental Protection Agency approved, the *Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin* (Sacramento-San Joaquin River Basin Plan). The Sacramento-San Joaquin River Basin Plan designates the beneficial uses of water to be protected along with the water quality objectives necessary to protect those uses.

The Sacramento-San Joaquin River Basin Plan identifies existing beneficial uses for the Sacramento River from Shasta Dam to the Colusa Basin Drain as: municipal and domestic supply; agriculture (irrigation and stock watering); industrial service supply; power; contact and non-contact water recreation; warm and cold freshwater habitat; warm and cold migration; warm and cold spawning; wildlife habitat; and navigation.

The State Water Board has reviewed and considered the environmental documents, plans, and Project description provided by the Applicant. Further, the State Water Board has considered the Central Valley Regional Board's Sacramento-San Joaquin River Basin Plan, the existing water quality conditions, and Project-related controllable factors.

The State Water Board has listed the section of Sacramento River from Shasta Dam to the Colusa Basin Drain on the CWA section 303(d) list of impaired water bodies. The Project is located in this section of the Sacramento River, which is impaired for DDT (dichlorodiphenyltrichloroethane), dieldrin, mercury, PCBs (polychlorinated biphenyls), and toxicity. This certification includes a condition (Condition 5) that specifies how the Applicant may dispose of materials excavated below the high water mark. This condition, along with BMPs, control measures, and mitigation measures will protect the beneficial uses of the Sacramento River.

Construction General Permit

Dischargers whose projects disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, may need to obtain coverage under the General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit; Water Quality Order 2009-0009-DWQ and National Pollutant Discharge Elimination System No. CAS000002, as amended by Order No. 2010-0014-DWQ). Construction activity subject to the Construction General Permit includes clearing, grading and disturbances to the ground such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

California Environmental Quality Act

CDFW is the lead agency for the purpose of California Environmental Quality Act (CEQA) compliance, while the State Water Board is a responsible agency. The CDFW and United States Bureau of Reclamation issued a Joint Draft Initial Study/Mitigated Negative Declaration (IS/MND) and Environmental Assessment/Finding of No Significant

Impact (EA/FONSI) and Mitigation Monitoring and Reporting Program (MMRP) for the Project on August 8, 2012. CDFW approved the Project and MND on October 9, 2012, and filed a Notice of Determination (NOD) with the State Clearinghouse on October 11, 2012. The State Water Board considered the IS/MND, EA/FONSI, and MMRP in connection with the issuance of this certification. CDFW's MMRP is included as Attachment B to this certification.

Any proposed changes incorporated into the Project are required as a condition of approval to avoid significant effects to the environment. Compliance with the measures in CDFW's MMRP that relate to the protection of resources within the State Water Board's purview is required as a condition of approval of this certification. The State Water Board finds that there is no substantial evidence in the record that the Project will have a significant effect on the environment. The State Water Board will file an NOD within five days of issuance of this certification.

All documents and other information that constitute the public record for this Project shall be maintained by the Division and shall be available for public review at the following address: State Water Resources Control Board, Division of Water Rights, 1001 I Street, Sacramento, CA 95814.

III. Discussion

Potential water quality related impacts to the Sacramento River from the Project include: temporarily disrupting navigation and water recreation in and along part of the Sacramento River; increased turbidity, erosion, and sedimentation; re-mobilization of DDT, dieldrin, PCBs, and mercury; the methylation of mercury from disturbed river sediments; discharge of Project construction-related materials and chemicals into the Sacramento River; disruption and degradation of wildlife habitat; and injury to fish. Methylation of mercury in re-suspended sediment fines increases its bioavailability to aquatic organisms, such as fish, and can lead to the bioaccumulation of mercury in fish tissue. Implementation of BMPs, mitigation measures, site-specific control measures, and the conditions of this certification would minimize the potential for impacts that could violate water quality standards.

To affirm that the Project operates to meet water quality standards as anticipated, and to ensure that the Project will continue to meet state water quality standards and other appropriate requirements of state law over its lifetime, this certification imposes conditions regarding monitoring, enforcement, and potential future revisions. These include conditions to ensure that the changes incorporated into the Project through the CEQA process remain part of the Project. Measures identified as necessary to mitigate impacts to water resources are marked with an arrow in CDFW's MMRP (Attachment B) and are incorporated as conditions in this certification. Additionally, California Code of Regulations, title 23, section 3860 requires imposition of certain mandatory conditions for all water quality certifications, which are included in this certification.

The State Water Board has found that, with the conditions and limitations imposed under this certification, the proposed Project will be protective of the state water quality standards and other appropriate requirements of state law.

ACCORDINGLY, BASED ON ITS INDEPENDENT REVIEW OF THE RECORD, THE STATE WATER RESOURCES CONTROL BOARD CERTIFIES THAT THE MERIDIAN FARMS FISH SCREEN PROJECT - PHASE 2 will comply with sections 301, 302, 303, 306, and 307 of the Clean Water Act, and with applicable provisions of state law, if the Meridian Farms Water Company complies with the following terms and conditions during the Project activities certified herein.

Condition 1 The Applicant shall not begin in-water work until the amended Water Right License No. 4676-B is issued. The Applicant shall comply with the amended Water Right License No. 4676-B, once issued.

Condition 2 All BMPs described in the application for certification and supplemental information are hereby incorporated by reference and are conditions of approval of this certification. Notwithstanding any more specific conditions in this certification, the Applicant shall comply with all measures described in the application for certification and its supplements.

Condition 3 The mitigation measures described in the MMRP (Attachment B) are hereby incorporated by reference and are conditions of approval of this certification.

Condition 4 The Fish Rescue Plan shall be implemented before the concrete tremie seal is poured and prior to dewatering of the cofferdams to reduce and remove fish trapped in the construction area while the cofferdams are constructed. The Fish Rescue Plan is attached to this certification as Attachment C.

Condition 5 The Applicant shall prepare a Contingency Plan with specific measures to prevent river water contamination in case of concrete tremie seal failure during cofferdam activities. Prior to construction activities in the Sacramento River, the Applicant shall submit the Contingency Plan to the Deputy Director for Water Rights (Deputy Director) for review and approval. The Deputy Director shall be provided with 60 days for review and approval of the Contingency Plan prior to construction in the Sacramento River. The Deputy Director may require modifications as part of the approval. Upon Deputy Director approval of the Contingency Plan, the plan and its implementation shall become a condition of this certification.

Condition 6 Prior to the start of construction activities in the Sacramento River, the Applicant shall notify the State Water Board of the Applicant's decision to either: 1) dispose of all untested fine material excavated below the ordinary high water mark at a waste disposal facility appropriate for contaminated sediments in accordance with all federal, state, and local laws, regulations, and permits; or 2) sample and analyze sediments (e.g., fines, particulates, etc.) collected below the ordinary high water mark for DDT, dieldrin, PCBs, and mercury prior to excavation activities in the Sacramento River, using an approved laboratory and appropriately low detection/reporting limit as defined by criteria in the Sacramento-San Joaquin River Basin Plan. If material sampled does not exceed state and federal toxicity standards, then excavated materials may be used for fill or backfill. If the material sampled exceeds state or federal toxicity standards, then the Applicant shall dispose of all fine excavated river channel material at an appropriate hazardous waste disposal facility in accordance with all federal, state, and local laws, regulations, and permits.

If the Applicant chooses to analyze sediments to inform waste disposal options, the Applicant shall prepare and submit a Field Sampling and Analysis Plan (FSAP) to the Deputy Director for approval, at least 30 days prior to the collection of sediment samples. The FSAP shall identify the: (1) proposed sampling methods; (2) proposed sampling locations and depths; (3) quality assurance and quality control standards; and (4) state and federal toxicity standards for the constituents of concern. The Deputy Director may require modification as part of approval. Additionally, a report of the sediment sampling results and proposed plan of action (e.g., disposal at appropriate facility, use as fill material, etc.) shall be submitted to the Deputy Director for review and approval at least 30 days prior to the initiation of excavation activities in the Sacramento River.

Condition 7 Project activities shall not cause an increase in turbidity downstream of the Project area greater than those identified in the Sacramento-San Joaquin River Basin Plan. Waters shall be free of changes in turbidity (due to Project activities) that cause nuisance or adversely affect beneficial uses. Except for placement and removal of the cofferdam, as discussed at the end of this condition, increases in turbidity shall not exceed background levels (natural turbidity measured Nephelometric Turbidity Units [NTUs] prior to the start of Project activities) by more than the Sacramento-San Joaquin River Basin Plan thresholds outlined below:

Background Level or Natural Turbidity	**Downstream Turbidity (after starting construction)**
Less than 1 NTU	Total turbidity shall not exceed 2 NTU
Between 1 and 5 NTU	Increases shall not exceed 1 NTU
Between 5 and 50 NTU	Increases shall not exceed 20 percent
Between 50 and 100 NTU	Increases shall not exceed 10 NTUs
Greater than 100 NTU	Increases shall not exceed 10 percent

Monitoring shall be conducted immediately upstream outside the influence of the Project and 300 feet downstream from the active work area. Monitoring results shall be reported to the Deputy Director within two weeks of initiation of monitoring and every two weeks thereafter for the remainder of the in-water working period. Monitoring shall occur at least hourly during Project construction in the Sacramento River and on the river bank. If monitoring shows that turbidity has exceeded the water quality objective, construction shall cease and the violation shall be reported within 24 hours to the Deputy Director and the Executive Officer for the Central Valley Regional Board (Executive Officer). Construction may not re-commence without the permission of the Deputy Director.

Standard turbidity limits may be eased during placement and removal of the cofferdams to allow a turbidity increase of up to 15 NTU over the background turbidity as measured in surface waters 300 feet downstream from the working area. To determine compliance with the above limits, a cumulative running average of turbidity readings shall be initiated at the beginning of each work day. The cumulative running average shall not exceed background levels by more than 15 NTU at any given time.

Condition 8 The Applicant shall comply with the Construction General Permit.

Condition 9 Control measures for erosion, excessive sedimentation and turbidity shall be implemented and in place at the commencement of, during and after any ground clearing activities, excavation, or any other Project activities that could result in erosion or sediment discharges to surface waters. Erosion control blankets, liners with berms, and/or other erosion control measures shall be used for any stockpile of excavated material to control runoff resulting from precipitation, and prevent material from contacting or entering surface waters.

Condition 10 Construction material, debris, spoils, soil, silt, sand, bark, slash, sawdust, rubbish, steel, other inorganic, organic, or earthen material, and any other substances from any Project-related activity shall be prevented from entering surface waters. All construction debris and trash shall be contained and regularly removed from the work area to the staging area during construction activities. Upon completion, all Project-generated debris, building materials, excess material, waste, and trash shall be removed from all the Project sites for disposal at an authorized landfill or other disposal site in compliance with state and local laws, ordinances, and regulations.

Condition 11 All wash water shall be contained and disposed of in compliance with state and local laws, ordinances, and regulations.

Condition 12 No unset cement, concrete, grout, damaged concrete or concrete spoils shall contact or enter surface waters.

Condition 13 All equipment must be washed prior to transport to the Project site and must be free of sediment, debris and foreign matter.

Condition 14 Any maintenance or refueling of vehicles or equipment occurring on-site will occur in a designated area with secondary containment, located away from drainage courses to prevent runoff, spills and stormwater from entering surface waters. All equipment using gas, oil, hydraulic fluid or other petroleum products shall be inspected for leaks prior to use and shall be monitored for leakage. Stationary equipment (motors, pumps, generator, etc.) and vehicles not in use shall be positioned over drip pans or other types of containment. Spill and containment equipment (oil spill booms, sorbent pads, etc.) shall be maintained onsite at all locations where such equipment is used or staged.

Condition 15 All imported riprap, rocks, and gravels used for construction shall be pre-washed.

Condition 16 No leachate from truck or grout mixer cleaning stations shall percolate into Project area soils. Cleaning of concrete trucks or grout mixers shall be performed in designated washout areas of sufficient size to completely contain all liquid and waste concrete or grout generated during washout procedures. Hardened concrete or grout shall be disposed at an authorized landfill, in compliance with state and local laws, ordinances and regulations.

Condition 17 Onsite containment for storage of chemicals classified as hazardous shall include secondary containment and appropriate management as specified in California Code of Regulations, title 27, section 20320.

Condition 18 A copy of this certification shall be provided to any contractor and all subcontractors conducting construction work, and copies shall remain in their possession at the Project site. The Applicant shall be responsible for work conducted by its contractor or subcontractors.

Condition 19 The Deputy Director and Executive Officer shall be notified one week prior to commencement of ground disturbing activities. Upon request, a construction schedule shall be provided to State Water Board and Regional Water Board staffs. The Applicant shall provide State Water Board and Regional Water Board staffs access to the site in order for staff to be present onsite to answer any public inquiries during construction and/or to document compliance with this certification.

Condition 20 This certification requires compliance with all applicable requirements of the Sacramento and San Joaquin Rivers Basin Plan. If at any time an unauthorized discharge to surface waters (including rivers or streams) occurs or monitoring indicates that the Project has or could soon be in violation of water quality objectives, the associated Project activities shall cease immediately and the Applicant shall notify the Deputy Director and Executive Officer within 24 hours. Associated activities may not resume without approval from the Deputy Director.

Condition 21 Unless otherwise specified in this certification or at the request of the State Water Board, data and/or reports must be submitted electronically in a format accepted by the State Water Board to facilitate the incorporation of this information into public reports and the State Water Board's water quality database systems in compliance with California Water Code section 13167.

Condition 22 The State Water Board's approval authority includes the authority to withhold approval or to require modification of a proposal or plan prior to approval. The State Water Board may take enforcement action if the Applicant fails to provide or implement a required plan in a timely manner.

Condition 23 The State Water Board reserves the authority to modify the conditions of this certification to incorporate load allocations developed in a total maximum daily load developed by the State Water Board or a Regional Water Board.

Condition 24 The State Water Board may add to or modify the conditions of this certification, as appropriate, to implement any new or revised water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act.

Condition 25 The State Water Board reserves authority to add to or modify the conditions of this certification if monitoring results indicate that continued operation of the Project could violate water quality objectives or impair the beneficial uses of the Sacramento River and its tributaries.

Condition 26 Notwithstanding any more specific conditions in this certification, the Project shall be operated in a manner consistent with all water quality standards and implementation plans adopted or approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act. The Applicant must take all reasonable measures to protect the beneficial uses of waters of the Sacramento River and its tributaries.

Condition 27 This certification 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 (ESA)(Fish & G. Code, §§ 2050-2097) or the federal ESA (16 U.S.C. §§ 1531 - 1544). If a "take" will result from any act authorized under this certification or water rights held by the Applicant, the Applicant 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 Applicant is responsible for meeting all requirements of the applicable ESAs for the Project authorized under this certification.

Condition 28 In the event of any violation or threatened violation of the conditions of this certification, the violation or threatened violation is subject to any remedies, penalties, process or sanctions as provided for under applicable state or federal law. For the purposes of section 401(d) of the Clean Water Act, the applicability of any state law authorizing remedies, penalties, process 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 certification.

Condition 29 In response to a suspected violation of any condition of this certification, the State Water Board or Regional Water Board may require the holder of any federal permit or license subject to this certification to furnish, under penalty of perjury, any technical or monitoring reports the State Water Board deems 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 (Wat. Code, §§ 1051, 13165,13267 and 13383). The State Water Board may add to or modify the conditions of this certification as appropriate to ensure compliance.

Condition 30 No construction shall commence until all necessary federal, state, and local approvals have been obtained.

Condition 31 Any requirement in this certification that refers to an agency whose authorities and responsibilities are transferred to or subsumed by another state or federal agency, will apply equally to the successor agency.

Condition 32 The Applicant must submit any changes to the Project, including Project operation, which would have a significant or material effect on the findings, conclusions, or conditions of this certification, to the State Water Board for prior review and written approval. If the State Water Board is not notified of a significant change to the Project, it will be considered a violation of this certification.

Condition 33 The State Water Board shall provide notice and an opportunity to be heard in exercising its authority to add to or modify the conditions of this certification.

Condition 34 This certification is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to California Water Code Section 13330 and California Code of Regulations, title 23, division 3, chapter 28, article 6 (commencing with section 3867).

Condition 35 Certification is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to California Code of Regulations, title, 23, section 3855, subdivision (b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

Condition 36 Nothing in this certification shall be construed as State Water Board approval of the validity of any water rights, including pre-1914 claims. The State Water Board has separate authority under the Water Code to investigate and take enforcement action if necessary to prevent any unauthorized or threatened unauthorized diversions of water.

Condition 37 Certification is conditioned upon total payment of any fee required under California Code of Regulations, title 23, division 3, chapter 28.

Thomas Howard
Executive Director

6/7/13
Date

Attachment A: Figures 1 and 2 – Map and Project Design for Meridian Farms Fish Screen Project, Phase 2

Attachment B: Mitigation Monitoring and Reporting Program

Attachment C: Fish Rescue Plan

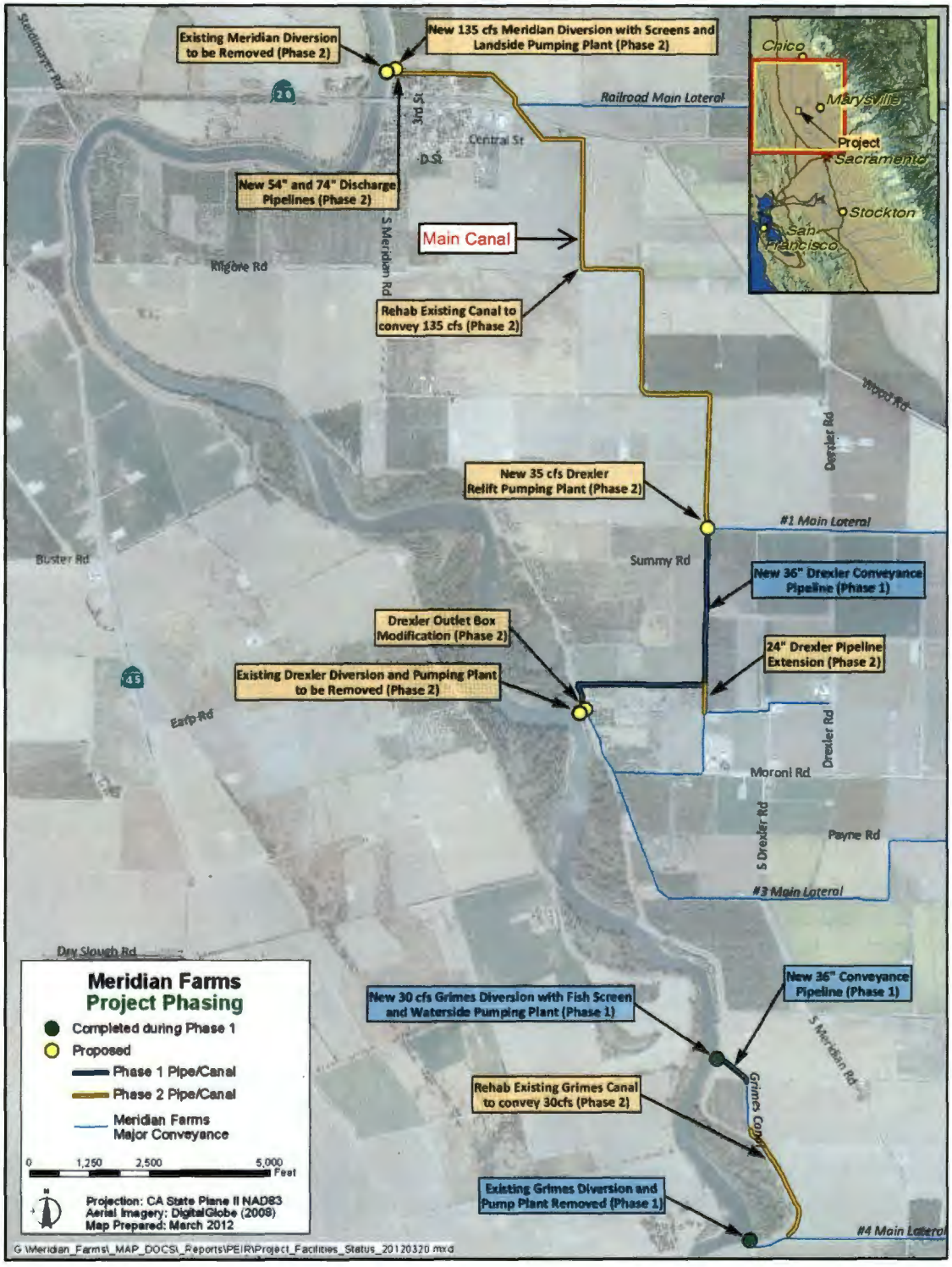

Figure 1. Phase 1 and 2 Project Components

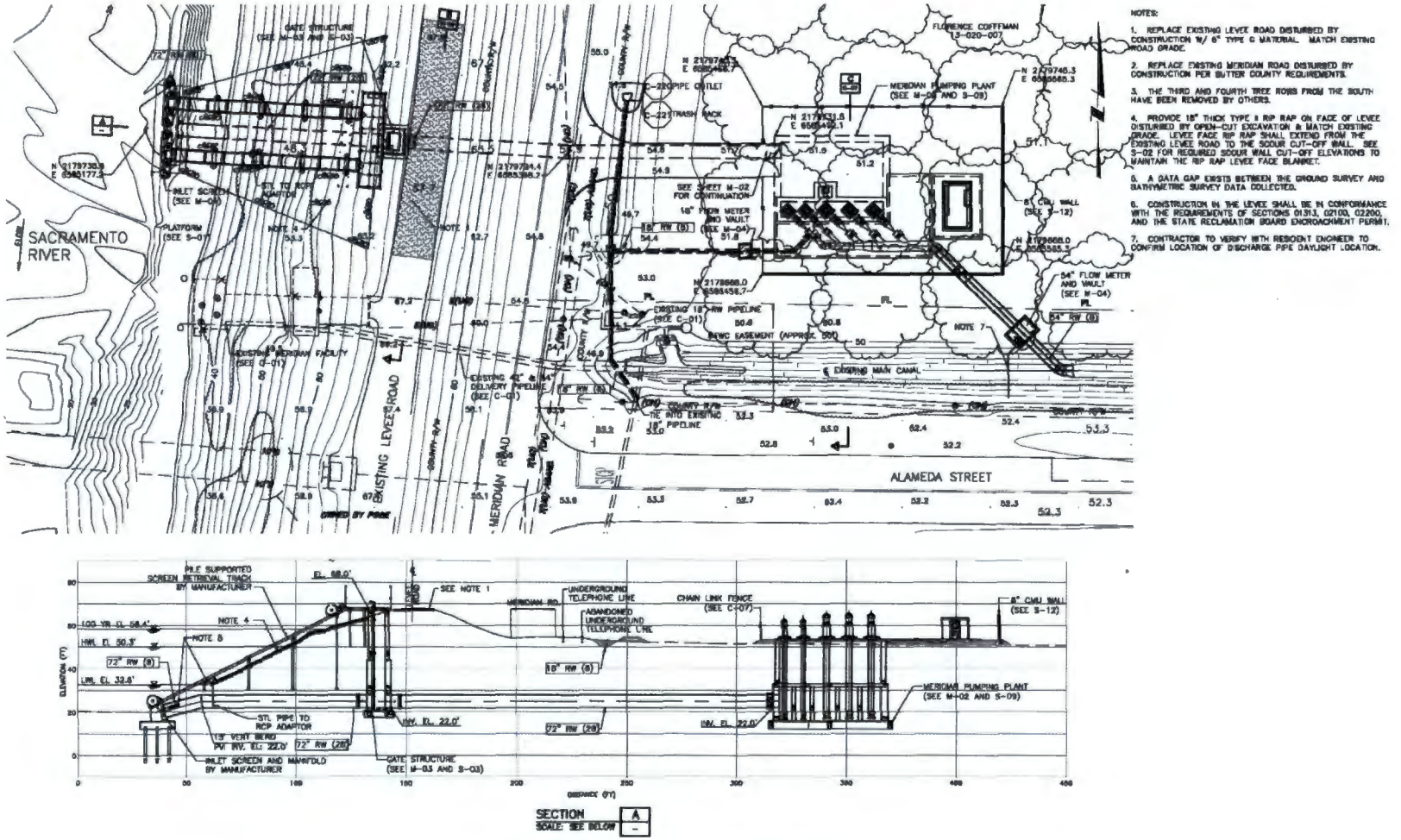

Figure 2. Retractable Cylindrical Fish Screen

Attachment A
Figure 2

MITIGATION MONITORING AND REPORTING PROGRAM*

Mitigation Measure	Implementing/ Funding Responsibility	Monitoring/Review Oversight	Timing	Verification of Compliance (Initials and Date)
Biological Resources				
Mitigation Measure BIO-2: Staging Areas. During construction operations, stockpiling of construction materials, portable equipment, vehicles, and supplies will be restricted to the designated construction staging areas and exclusive of the Environmentally Sensitive Areas (ESAs). A clear and solid barrier fence, such as a combination of exclusionary and silt fencing, will be installed along the boundaries of the staging area to prevent contamination of ESAs during such operations.	MFWC	CDFG/USBR	Prior to and throughout construction activities	
Mitigation Measure BIO-3: Pre-construction Surveys. No more than 24-hours prior to the commencement of construction activities, a USFWS-approved biologist shall survey areas deemed suitable giant garter snake (GGS) habitat for the presence of GGS. The biologist will provide the USFWS with a written report that adequately documents the methodology and results of the pre-construction survey. These areas shall be re-inspected by the biologist whenever a lapse in construction activity of two and removed at the end of each workday from the entire project site.	MFWC	CDFG/ USFWS	Prior to construction activities	
Mitigation Measure BIO-16: De-watering GGS Habitat. During the giant garter snake active period (May 1-September 31), giant garter snake aquatic habitat may be dewatered starting on April 15. Any dewatered habitat must remain dry for at least 15 consecutive days after April 15 and prior to excavating or filing the dewatered habitat.	MFWC	CDFG/USBR	15 consecutive days prior to construction in any dewatered areas after April 15.	
Mitigation Measure BIO-18: Compensation. Compensation for temporary and permanent impacts to GGS habitat is the responsibility of MFWC. Temporary impacts shall be restored to pre-project conditions. Areas subject to temporary impacts shall be limited to one season (the calendar year period between May 1 and October 1) and be restored within two seasons. In addition, GGS habitats temporarily disturbed during the inactive season (3.4 acres of aquatic habitat and 6.4 acres of upland habitat) will be replaced at a level of 1:1 by purchasing credits in a USFWS-approved mitigation bank prior to project construction.	MFWC	CDFG/USBR	After completion of construction activities	
Mitigation Measure BIO-A: Spoil Sites. Spoil sites shall be located so they do not drain directly into the waterways. If a spoil site drains into a water body, catch basins shall be constructed to intercept sediment before it reaches the channels. Spoil sites shall be graded to reduce the potential for erosion.	MFWC	CDFG/USBR	Prior to and throughout construction activities	
Mitigation Measure BIO-B: Hazardous Materials. A spill prevention plan for potentially hazardous materials shall be prepared and implemented. The plan shall include the proper handling and storage of all potentially hazardous materials, as well as the proper procedures for cleaning up and reporting of any spills. If necessary, containment berms shall be constructed to prevent spilled materials from reaching the creek channels.	MFWC	CDFG/US	Prior to construction activities	

*This Mitigation Monitoring and Reporting Program has been modified from the one adopted by California Department of Fish and Wildlife.

Mitigation Measure	Implementing/ Funding Responsibility	Monitoring/Review Oversight	Timing	Verification of Compliance (Initials and Date)
Mitigation Measure BIO-C: Storage. Equipment and materials shall be stored at least 50 feet from waterways. No debris such as trash and spoils shall be deposited within 100 feet of waterways. Staging and storage areas for equipment, materials, fuels, lubricants and solvents, shall be located outside of the stream channel and banks. Stationary equipment such as motors, pumps, generators, compressors and welders, located within or adjacent to the stream shall be positioned over drip pans. Any equipment or vehicles driven and/or operated within or adjacent to the stream shall be checked and maintained daily, to prevent leaks of materials that if introduced to water could be deleterious to aquatic life. Vehicles shall be moved away from the stream prior to refueling and lubrication.	MFWC	CDFG/USBR	Throughout construction activities	
Mitigation Measure BIO-D: Vehicle Maintenance. Proper and timely maintenance for vehicles and equipment used during construction shall be provided to reduce the potential for mechanical breakdowns leading to a spill of materials into or around the creeks. Maintenance and fueling shall be conducted in an area that meets the criteria set forth in the spill prevention plan (i.e., away from sensitive drainages).	MFWC	CDFG/USBR	Throughout construction activities	
Mitigation Measure BIO-E: Dust Prevention. Water used for dust abatement, if necessary, shall be acquired from an authorized off-site source. Water shall be a clean water source in accordance with California RWQCB Construction Storm Water Program and/or as authorized under a separate National Pollutant Discharge Elimination System (NPDES) permit.	MFWC	CDFG/USBR	Throughout construction activities	
Mitigation Measure BIO-F: Daily Monitoring. A qualified biological monitor shall be on site during in-water construction activities. The biological monitor shall be authorized to halt construction if impacts to special-status salmonid species are evident.	MFWC	CDFG/USBR	Throughout construction activities	
Mitigation Measure BIO-G: Riparian Habitat. Current riparian vegetation shall be retained to extent feasible.	MFWC	CDFG/USBR	Throughout construction activities	
Mitigation Measure BIO-H: Fish Rescue Plan. A fish rescue plan shall be prepared by MFWC prior to the implementation of the project and provided for review and comment to U.S. National Marine Fisheries Service (NMFS), USFWS, and CDFG as appropriate. A qualified fisheries biologist will design and conduct a fish rescue and relocation effort to collect fish from the area within the cofferdam involving the capture and return of those fish to suitable habitat within the Sacramento River. To ensure compliance, a fisheries biologist shall provide observation during initial dewatering activities within the cofferdam. Following the fish rescue effort, a report shall be prepared by the fisheries biologist and submitted to NMFS within 30 days.	MFWC	NMFS	Prior to and during construction activities	
Mitigation Measure BIO-22: Swainson's Hawk, Nesting Raptors and Other Nesting Bird Survey. For any construction activities that will occur between March 1 and August 31 of any given year, the applicant shall conduct preconstruction surveys in suitable nesting habitat within 0.5 mile of the construction area for nesting raptors. Surveys shall be conducted by a qualified biologist. In addition, all trees slated for removal during the nesting season shall be surveyed by a qualified biologist no more than 48-hours before removal to ensure that no nesting birds are occupying the tree. If active nests are found during the survey, the applicant shall implement appropriate mitigation measures to ensure that the species will not be adversely affected, which will include establishing a	MFWC	CDFG/USBR	Prior to and throughout construction activities	

Mitigation Measure	Implementing/ Funding Responsibility	Monitoring/Review Oversight	*Timing*	Verification of Compliance (Initials and Date)
no-work buffer zone as, approved by the CDFG, around the active nest. The no-work buffer may vary depending on species and site specific conditions as approved by CDFG. Appropriate mitigation measures include delaying construction activities until a qualified biologist determines that juveniles have fledged the nest(s), or establishing a "no construction" zone buffer around the nest. The results of the survey shall be documented in a letter report that is distributed to the CDFG. These measures would ensure compliance with the Migratory Bird Treaty Act and CDFG Code 3503.5.				
Mitigation Measure BIO-23: Riparian Habitat Exclusion. Where construction work occurs adjacent to riparian habitat (i.e., at the existing Drexler Diversion and Pumping Plant and the Grimes Canal modifications), there shall be no encroachment by construction equipment or personnel into existing riparian habitat areas located along the Sacramento River. Storage or parking of equipment shall be restricted within 100 feet of riparian habitat.	MFWC	CDFG/USBR	Throughout construction activities	
Mitigation Measure BIO-I: Pre-construction surveys for burrowing owls shall be conducted by a qualified biologist as approved by the CDFG within 30-days prior to the start of work activities where land construction is planned in known or suitable habitat. If construction activities are delayed for more than 30 days after the initial preconstruction surveys, then a new preconstruction survey shall be required. All surveys shall be conducted in accordance with the CDFG/California Burrowing Owl Consortium survey protocols. This survey can be conducted concurrently with Mitigation Measure BIO-22. If burrowing owls are discovered in the proposed project site vicinity during construction, the onsite biologist shall be notified immediately. Occupied burrows should not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by the CDFG verifies through non-invasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. If this criteria is not met, occupied burrows during the nesting season will be avoided by establishment of a no-work buffer of 250-foot around the occupied/active burrow. Where maintenance of a 250-foot no-work buffer zone is not practical, the applicant shall consult with the CDFG to determine appropriate avoidance measures. Burrows occupied during the breeding season (February 1 to August 31) will be closely monitored by the biologist until the young fledge/leave the nest. The onsite biologist shall have the authority to stop work if it is determined that construction related activities are disturbing the owls. If criterion 1 or 2 above are met and as approved by CDFG, the biologist shall undertake passive relocation techniques by installing one-way doors in active and suitable burrows allowing owls to escape but not re-enter. Owls should be excluded from the immediate impact zone and within a 160-foot buffer zone by having one-way doors placed over the entrance to prevent owls from inhabiting those burrows. After nesting season ends (August 31) and the burrow is deemed unoccupied by the biologist, passive relocation techniques shall take place. Construction activities may occur once a qualified biologist has deemed the burrows are unoccupied.	MFWC	CDFG/USBR	Prior to and throughout construction activities	

Mitigation Measure	Implementing/ Funding Responsibility	Monitoring/Review Oversight	Timing	Verification of Compliance (Initials and Date)
Mitigation Measure BIO-J: Wetlands. If it is determined that the Proposed Project/Action impacts waters of the U.S., the MFWC shall obtain all required permit approvals from the Corps, Regional Water Quality Control Board (RWQCB), CDFG and any other agencies with permitting responsibilities for construction activities within jurisdictional features. Permit approvals and certifications would likely include the following: Clean Water Act Section 404. Permit approval from the Corps shall be obtained for the placement of dredge or fill material in waters of the U.S. pursuant to Section 404 of the federal Clean Water Act. The Section 404 permit application would require a delineation of wetlands and other waters of the U.S., a jurisdictional determination from the Corps, and preparation of a Pre-Construction Notification (PCN) and supporting documentation. A PCN outlines project activities, areas of impact, construction techniques, and methods for avoiding and reducing impacts to jurisdictional features. State and federal regulations require that the project applicant avoid or minimize impacts to wetlands and waters and develop appropriate protection for wetlands. Wetlands that cannot be avoided must be compensated to result in "no net loss" of wetlands to ensure that the project would maintain the current functions and values of onsite wetland habitats. Clean Water Act Section 401 Water Quality Certification/Porter-Cologne Act. Approval of Water Quality Certification (WQC) under the CWA and/or Waste Discharge Requirements (WDRs) under the Porter-Cologne Act shall be obtained from the RWQCB for work within jurisdictional waters. Application for a WQC requires an application and supporting materials, including construction techniques, areas of impact, mitigation measures, project schedule, and proof of CEQA compliance. Application for a WDR requires an application and supporting materials, including a characterization of the discharge which includes but is not limited to: design and actual flows; a list of constituents and the discharge concentration of each constituent; a list of other appropriate waste discharge characteristics; a description and schematic drawing of all treatment process; a description of any BMPs used; and a description of disposal methods. Proof of CEQA compliance is also required. California Fish and Game Code Section 1602. CDFG requires a Streambed Alteration Agreement for activities that result in alteration of the bed or bank of a stream (typically the top of bank or edge of riparian habitat, whichever is greater), or that adversely impact fish or wildlife resources. The notification package must include supporting materials, including construction techniques, areas of impact, mitigation measures, project schedule, and proof of CEQA compliance.	MFWC	CDFG/USBR	Prior to construction activities	
Mitigation Measure BIO-28: Compensation for Loss of Jurisdictional Wetlands. If the Proposed Project/Action results in the permanent degradation of riverine and wetland habitat, those impacts shall be compensated for at a 1:1 ratio through the purchase of similar habitat value from a USFWS-approved conservation bank. Compensation shall take the form of wetland and/or riverine preservation or creation in accordance with the Corps and CDFG mitigation requirements, as required under project permits. Preservation and creation may occur onsite through a conservation agreement or offsite through purchasing credits at a Corps approved mitigation bank.	MFWC	CDFG/USBR	After completion of construction activities	
Transportation and Traffic				
Mitigation Measure TRAFFIC-1: Following completion of construction activities, contractor(s) shall restore any damage to construction access routes to existing conditions or better.	MFWC	CDFG/USBR	After completion of construction activities	

Mitigation Measure	Implementing/ Funding Responsibility	Monitoring/Review Oversight	Timing	Verification of Compliance (Initials and Date)
Mitigation Measure TRAFFIC-2: Prior to and during construction activities, contractor(s) shall prepare and implement a Traffic Control Plan in accordance with professional engineering standards prior to construction. The Traffic Control Plan should include the following requirements, or equally effective measures: • Emergency services access to local land uses shall be maintained at all times for the duration of construction activities. Local emergency service providers shall be informed of road closures and detours. • For roadways requiring full closures, contractor(s), in coordination with Sutter County, shall develop circulation and detour plans to minimize impacts to local street circulation. This would include the use of signing to guide vehicles onto alternative roads around the construction zone. • Advanced warning signs of construction activities shall be posted to allow motorists to select alternative routes in advance. This will include noticing of residents and businesses fronting the alignment at least two weeks prior to the commencement of construction activities. • Access for local land uses including during construction activities shall be maintained. • Roadside safety protocols shall be complied with, so as to reduce the risk of accident. • A telephone resource shall be arranged to address public questions and complaints during project construction.	MFWC	CDFG/USBR	Prior to and throughout construction activities	

[1]Measures modified from the 2008 IS/EA are identified by numerals (e.g. BIO-2), while new measures are identified by letters (e.g. BIO-A)

MITIGATION MONITORING AND REPORTING PROGRAM

Mitigation Measure	Implementing/ Funding Responsibility	Monitoring/Review Oversight	Timing	Verification of Compliance (Initials and Date)
Air Quality				
Mitigation Measure AIR-1. Implement FRAQMD Best Available Mitigation Measures For Construction Activity:	MFWC	CDFG/USBR	Prior to approval of dust control plan	
Implement PM10 control measures outlined in the FRAQMD Fugitive Dust Control Plan.				
MFWC shall require its construction contractor(s) to assemble a comprehensive inventory list (i.e., make, model, engine year, horsepower, emission rates) of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) that will be used an aggregate of 40 or more hours for both Phases 1 and 2 construction activities and apply the following mitigation measure: *Reducing NOx emissions from off-road diesel powered equipment* MFWC or its construction contractor(s) shall provide a plan for approval by FRAQMD demonstrating that the heavy-duty (equal to or greater than 50 horsepower) off-road equipment to be used in construction of Phases 1 and 2, including owned, leased and subcontractor vehicles, will achieve a project wide fleet-average 20 percent NOx reduction and 45 percent particulate reduction 1 compared to the most recent CARB fleet average at time of construction. A Construction Mitigation Calculator (MS Excel) may be downloaded from the SMAQMD web site to perform the fleet average evaluation http://www.airquality.org/ceqa/index.shtml. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, perform offsite mitigation projects, provide funds for air district offsite mitigation projects, and/or other options as they become available. The District should be contacted to discuss alternative measures.	MFWC	CDFG/USBR	Throughout construction activities	
Construction equipment exhaust emissions shall not exceed FRAQMD Regulation III, Rule 3.0, Visible Emissions limitations (40 percent opacity or Ringelmann 2.0). Operators of vehicles and equipment found to exceed opacity limits shall take action to repair the equipment within 72 hours or remove the equipment from service. Failure to comply may result in a Notice of Violation.	MFWC	CDFG/USBR	Throughout construction activities	
The primary contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained.	MFWC	CDFG/USBR	Throughout construction activities	
Minimize idling time to 10 minutes – saves fuel and reduces emissions.	MFWC	CDFG/USBR	Throughout construction activities	
No open burning of removed vegetation during infrastructure improvements. Vegetative material should be chipped or delivered as waste to energy facilities.	MFWC	CDFG/USBR	Throughout construction activities	
Portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, may require California Air Resources Board (CARB) Portable Equipment Registration with the State or a local district permit. The owner/operator shall be responsible for arranging appropriate consultations with the CARB or the District to	MFWC	CDFG/USBR	Throughout construction activities	

determine registration and permitting requirements prior to equipment operation at the site.

Biological Resources			
Mitigation Measure BIO-1: Traffic Routing, and Movement:	MFWC	CDFG/USBR	Prior to and throughout construction activities
During construction operations, the number of access routes, number and size of staging areas, and the total area of the proposed project activity will be limited to the minimum necessary.			
Routes and boundaries will be clearly demarcated. Movement of heavy equipment to and from the project site will be restricted to established roadways to minimize habitat disturbance.	MFWC	CDFG/USBR	Prior to and throughout construction activities
Project-related vehicles shall observe a 20-mile-per-hour speed limit within construction areas, except on County roads and on State and Federal highways. This is particularly important during periods when the GGS may be running or moving on roadways. All heavy equipment, vehicles, and supplies will be stored at the designated staging area at the end of each work period.	MFWC	CDFG/USBR	Prior to and throughout construction activities
Mitigation Measure BIO-4: Timing of Construction:	MFWC	CDFG/USFWS	May 1 through October 1
Construction activity within GGS habitat (*e.g.* aquatic, upland, and rice habitat) shall be conducted between May 1 and October 1.			
If it appears that construction activity may go beyond October 1, the project proponents shall contact the USFWS as soon as possible, but not later than September 15 of the year in question, to determine if additional measures are necessary to minimize take.	MFWC	CDFG/USFWS	May 1 through September 15 (Conditionally).
Construction activities within 200 feet from the banks of snake aquatic habitat will be avoided during the snake's inactive season. If this is not feasible, the Project Proponent must consult with USFWS to determine measures to avoid impacts to GGS.	MFWC	CDFG/USFWS	May 1 through October 1 May 1 through September 15 (Conditionally)
Mitigation Measure BIO-6: Worker Awareness Training:	MFWC	CDFG/USBR /USFWS	Prior to and throughout construction activities
A Worker Environmental Awareness Training Program for construction personnel shall be conducted by the USFWS-approved biologist for all construction workers, including contractors, prior to the commencement of construction activities.			
The program shall provide workers with information on their responsibilities with regard to the snake, an overview of the life history of this species, information on take prohibitions, protections afforded this animal under the Act, and an explanation of the relevant terms and conditions of this biological opinion.	MFWC	CDFG/USBR /USFWS	Prior to and throughout construction activities
Written documentation of the training must be submitted to the Sacramento Fish and Wildlife Office within 30 days of the completion of training. As needed, training shall be conducted in Spanish for Spanish language speakers.	MFWC	CDFG/USBR /USFWS	Prior to and throughout construction activities
Mitigation Measure BIO-7: Install Snake Exclusion Fencing:	MFWC	CDFG/USBR	Prior to and throughout construction activities
Prior to the commencement of construction activities, high visibility fencing will be erected around the habitats of federally listed species to identify and protect these designated ESAs from encroachment of personnel and equipment. These areas will be avoided by all construction personnel.			
The fencing shall be inspected by the Contractor before the start of each work day and maintained by the Contractor until completion of the project. The fencing may be removed only when the construction of the project is completed.	MFWC	CDFG/USBR	Prior to the start of each work day
Fencing will be established in upland immediately adjacent to aquatic snake habitat and extending	MFWC	CDFG/USBR	Prior to and throughout

up to 200 feet from construction activities. Silt fencing, if properly installed, may serve as suitable snake exclusion fencing.			construction activities
Mitigation Measure BIO-8: Provide Adequate Signage: Signs will be posted by the Contractor every 50 feet along the edge of the ESAs, with the following information: "This area is habitat of federally-threatened and/or endangered species, and must not be disturbed. These species are protected by the Endangered Species Act of 1973, as amended. Violators are subject to prosecution, fines, and imprisonment." The signs should be clearly readable from a distance of 20 feet, and must be maintained by the Contractor for the duration of construction.	MFWC	CDFG/USBR	Prior to and throughout construction activities
→ **Mitigation Measure BIO-9: Implement BMPs:** Best Management Practices (BMPs), including a Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP), will be implemented to minimize effects to the GGS during construction.	MFWC	CDFG/USBR	Prior to and throughout construction activities
Best management practices will be implemented to prevent sedimentation from entering ESAs and to reduce erosion, dust, noise, and other deleterious aspects of construction related activities. These BMPs may include, but are not limited to, silt fencing, temporary berms, restrictions on cleaning equipment in or near ESAs, installation of vegetative strips, and temporary sediment disposal. Runoff from dust control and hazardous materials will be retained on the construction site and prevented from flowing into the ESAs.	MFWC	CDFG/USBR	Prior to and throughout construction activities
→ **Mitigation Measure BIO-10: Erosion Control Materials:** Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material shall be used for erosion control and other purposes at the ESA to ensure that the GGS is not trapped or becomes entangled. This limitation shall be communicated to the contractor using special provisions included in the bid solicitation package.	MFWC	CDFG/USBR/NMFS	Prior to and throughout construction activities
→ **Mitigation Measure BIO-11: Properly Dispose of Garbage:** To eliminate an attraction to predators of the snake, all food-related trash items, such as wrappers, cans, bottles, and food scraps, must be disposed of in closed containers and removed at the end of each workday from the entire project site.	MFWC	CDFG/USBR	Throughout construction activities
→ **Mitigation Measure BIO-12: Use Approved Aggregate, Fill, or Borrow Materials:** The Contractor shall provide documentation that aggregate, fill, or borrow material provided for the proposed project was obtained in compliance with the State Mining and Reclamation Act (SMARA). Evidence of compliance with the Act shall be demonstrated by providing the resident engineer with one of the following: 1) a letter from the USFWS stating that the use of the borrow pit will not result in the incidental take of species; 2) an incidental take permit for contractor-related activities issued by the USFWS pursuant to section 10(a)(1)(B) of the Act; 3) a biological opinion or letter concurring with a "not likely to adversely affect" determination issued by the USFWS to the Federal agency having jurisdiction over contractor-related services' 4) a letter from the USFWS concurring with the "no effect" determination for contractor-related activities; or 5) contractor submittal of information to the resident engineer indicating compliance with the SMARA and provision of County land use permits and California Environmental Quality Act (CEQA) clearance.	MFWC	CDFG/USBR /USFWS	Prior to and throughout construction activities
→ **Mitigation Measure BIO-13: Restore Temporarily Affected Habitat:** After construction activities are complete, any temporary fill or construction debris shall be removed and disturbed areas restored to their pre-project conditions. An area subject to "temporary" disturbance includes any area that is disturbed during the project, but that, after project completion, will not be subject to further disturbance and has the potential to be re-vegetated.	MFWC	CDFG/USBR /USFWS	After completion of construction activities

All ESA GGS habitats subject to temporary ground disturbances, including storage and staging areas and temporary roads, will be restored to pre-project conditions. If appropriate, these areas shall also be re-contoured to pre-project conditions. A written report shall be submitted to the USFWS within ten (10) working days of the completion of construction at the project site and restoration of the site to pre-project conditions.	MFWC	CDFG/USBR /USFWS	After completion of construction activities
A written report shall be submitted to the USFWS within ten (10) working days of the completion of construction at the project site and restoration of the site to pre-project conditions.	MFWC	CDFG/USBR /USFWS	10 days after completion of construction activities
Mitigation Measure BIO-14: Post-construction Monitoring: An inspection of the site, with a photo documentation report showing pre- and post-project area photos, will be conducted and photos and a brief report will be submitted to USFWS one year from implementation of restoration to pre-project conditions.	MFWC	CDFG/USBR /USFWS	After the completion of construction activities
Measure BIO-17: Giant Garter Snake Monitoring During Construction. A USFWS-approved biologist shall inspect construction-related activities at the proposed project site to ensure that no unauthorized take of federally listed species or destruction of their habitat occurs. The biologist shall be available for monitoring throughout all phases of construction that may result in adverse effects to the giant garter snake. This includes clearing and grubbing and other construction activities in the areas of wetland vegetation/aquatic habitat, adjacent upland habitat, and during exclusion fence installation. Furthermore, the biologist shall have the authority through communication with the resident engineer to stop construction activities in the immediate area if a giant garter snake is encountered during construction until appropriate corrective measures have been completed or until the snake is determined to be unharmed. Snakes encountered during construction activities shall be allowed to move away from the area on their own volition. The biologist shall notify the USFWS immediately if any listed species are found on-site, and will submit a report, including date(s), location(s), habitat description, and any corrective measures taken to protect the species found. The biologist shall be required to report any take of listed species to the USFWS immediately by telephone at 916/ 414-6600 and by electronic mail or written letter addressed to the Chief, Endangered Species Division, within three (3) working days of the incident. The Service does not authorize any handling or moving of a giant garter snake by other than USFWS-permitted biologist.	MFWC	CDFG/USFWS	Throughout construction activities
Mitigation Measure BIO- 19: Pile Driving Activities: For Phases 1 and 2, the contractor shall use vibrational pile driving to the greatest extent feasible. If percussive pile driving is necessary, its use shall be minimized to the maximum extent possible and comply with the following *Interim Criteria for Injury of Fish to Pile Driving Operations* (Popper et al., 2006): The Sound Exposure Level (SEL) shall not exceed 187 dB (re:1 μPa^2 sec) in any single strike, measured at a distance of 32.8 ft from the source; The peak sound pressure level should not exceed 208 dB (re:1μPapeak) in any single strike, measured at a distance of 32.8 ft from the source.	MFWC	CDFG/USBR	Throughout construction activities
Mitigation Measure BIO-21: Tree Removal Period: If possible, trees required for removal shall be removed outside of the nesting period (nesting period = March 1st through August 31st).	MFWC	CDFG/USBR	March 1 through August 31
Mitigation Measure BIO-20: Dewatering: Pump(s) used for dewatering the construction site will be screened according to NMFS fish screening criteria for anadromous salmonids (NMFS, 1997b). A qualified biologist will be on-site	MFWC	CDFG/USBR/NMFS	Throughout construction activities

during such pumping activities to ensure that any fish that may be present within the construction area are relocated to suitable habitat near the project area.			
Hydrology and Water Quality			
→ **Mitigation Measure HYDRO-1: *Identify Site-Specific Control Measures:*** To minimize the exposure of sediments to runoff, MFWC or its construction contractor(s) will identify and implement site-specific construction and post-construction water quality control measures for both Phase 1 and 2 of the Proposed Project/Action facilities.	MFWC	CDFG/USBR	Prior to, throughout, and following construction activities
Control measures will include those contained in the Construction Contractor's Guide and Specification of the Caltrans Storm Water Quality Handbook (The Handbook; April 1997); Sutter County Code Section 5, Storm Drainage Design, and the State Water Resources Control Board (SWRCB) Water Quality Order 99-08-DWQ, NPDES, General Permit for Stormwater Discharge Associated with Construction Activity.	MFWC	CDFG/USBR	Prior to, throughout, and following construction activities
Noise			
Mitigation Measure NOISE-1. Minimization of the Construction and Operational Noise: Standard noise abatement measures will be implemented during construction to reduce noise impacts from construction activities. Construction activities will be limited between 7:00 a.m. and 5:00 p.m. on weekdays to reduce potential noise impacts to area residents. In addition, staging areas and stationary noise generating construction equipment will be located as far as possible from sensitive receptors, and all construction equipment will be maintained with the manufacturer's specified noise-muffling devices.	MFWC	CDFG/USBR	Prior to and throughout construction activities
Final design of the facilities of the Proposed Project/Action will incorporate noise attenuating technologies and noise barriers to mitigate that noise emanating from the facilities at maximum operational load will not exceed applicable standards or lead to cumulative increases in ambient noise levels.	MFWC	CDFG/USBR	During operational activities

→ Measures identified as necessary to mitigate the impacts to water resources are marked with an arrow.

Attachment C

PHASE 2 MERIDIAN FARMS FISH SCREEN PROJECT

Fish Rescue Plan

Prepared for:
U.S. Bureau of Reclamation
California Department of Fish and Game

October 2012

Introduction

Meridian Farms Water Company (MFWC) is located in Sutter County, between Interstate 5 and Highway 99, east of the Sacramento River and southwest of the Sutter Bypass. MFWC provides irrigation water to three distinct Service Areas encompassing approximately 9,150 acres, with an estimated annual water delivery of 35,000 acre-feet (af). MFWC diverts surface water from the Sacramento River under the provisions of a License for Diversion and Use of Water with a priority date of September 10, 1918. Presently MFWC has two unscreened diversions on the Sacramento River at Meridian and Drexler.

The primary purpose of the Meridian Farms Water Company (MFWC) Phase 2 Fish Screen Project is to prevent entrainment of migrating, at-risk, native fish species at MFWC's existing diversion facilities by replacing unscreened intakes on the Sacramento River with screened diversions. MFWC will construct new positive barrier fish screen diversions that meet CDFG and NOAA Fisheries fish screen design criteria. Positive barrier fish screens will physically prevent fish from passing through the intake; these differ from behavioral barrier fish screens which encourage fish to swim away from a structure. MFWC Phase 2 work components that would occur in the Sacramento River are construction of a new Meridian Diversion/Pumping Plant, removal of the existing Meridian Diversion/Pumping Plant, and removal of the existing Drexler Diversion/Pumping Plant.

In order to complete construction of the new diversion/pumping plant and remove the existing diversions/pumping plants, sheet pile cofferdam enclosures must be installed to create access to the work site in the Sacramento River. Fish inhabiting the work areas on the Sacramento River could potentially become trapped by construction of the cofferdam. To reduce harm, harassment and mortality of fish entrapped in the cofferdam area, the following Fish Rescue Plan will be implemented.

This Fish Rescue Plan has been developed in part, based on the informal recommendations of the U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), and the California Department of Fish and Game (CDFG). This plan has also been developed based on the guidelines that have been approved for other intake projects, including the plan approved and used in construction of the Patterson Irrigation District Fish Screen Intake Project and the Victoria Canal Alternative Intake Project constructed by ProVen Management, Inc.

A fish rescue will be needed at the time the cofferdam is initially installed, and additionally if the cofferdam is flooded during construction and a fish rescue is determined to be feasible. All fish species that become entrapped in the cofferdam will be rescued and returned to the Sacramento River; however the primary focus of this effort is protection of special status species, specifically the following federally-listed species potentially inhabiting the project site on the Sacramento River:

- Sacramento River winter-run Chinook (federally-listed as endangered)
- Central Valley spring-run Chinook (federally-listed as threatened)

- Central Valley Steelhead (federally-listed as threatened)
- North American Green Sturgeon (federally-listed as threatened)

Fish rescue and relocation will be performed under the supervision of a qualified fishery biologist. NMFS and the CDFG shall be notified at minimum 48 hours prior to execution of fish seining. Upon completion of fish seining, the supervising fishery biologist will prepare a written report summarizing the results and documenting any rescue, relocation, and mortality that may have occurred. This report will be made available for submission to NMFS, CDFG, and USFWS.

Methods

Fish seining will be implemented following completion of the cofferdam, prior to removal of water. During cofferdam installation at least one pair of sheet piles will be left in the open position, allowing fish to exit the enclosure. The location of the open pair of sheet piles will be selected to allow maximum structural integrity of the cofferdam. With the pair of sheet piles in the open position, the area within the cofferdam enclosure will be swept using a beach seine and/or dip nets to catch and relocate or herd any fish out the opening in the cofferdam. This will be repeated several times as need and to the satisfaction of the supervising fishery biologist. The cofferdam will be closed once the supervising fishery biologist has determined that all fish are likely to have been removed. Electrofishing methods will not be allowed.

Upon closure of the cofferdam, pumps will be installed to remove impounded water from within the enclosure. Pumps used to remove impounded water will be outfitted with a mesh screen and water will be drawn down at a slow enough rate to prevent fish impingement. When the water level is drawn down to a depth of approximately two feet, a final check of the impounded area will be performed. Should any fish remain, they will be collected using nets and returned to the Sacramento River. As a final check, the area sweep will be repeated with nets until three consecutive runs yield no additional fish. At this time the fish seining operation will be complete.

Fish will be collected and placed immediately into aerated vessels of river water for holding prior to release in order to minimize handling and reduce stress. Species and life stage of all fish collected during seining will be documented prior to release. Once documented, fish will be immediately transported to a location between 200 feet and 600 feet downstream of the cofferdam and released back into the Sacramento River. Fish will be released intermittently and at random locations to prevent habituation of predatory fish. Damage or mortality of fish as a result of the seining operation will be noted and included in the supervising fishery biologist summary report.

Measures including the aeration of holding vessels, minimization of holding time, and addition of bacteria reducing chemicals will be implemented in order to reduce the stress on collected fish. All fish collected in the seining operation will be handled in accordance with local and federal law, including the Federal Endangered Species Act. Standard protocol for

fish rescue and relocation stipulates that no fish (dead or alive) is to be removed for personal use. All efforts will be made to minimize the amount of time collected fish spend out of the river. Use of anesthetics may occur during the handling of federally-listed species in order to minimize injury or possible mortality.

Handling of Dead Fish

Despite all precaution outlined in this plan, potential for fish mortality still exists. If a federally-listed fish suffers mortality, the individual shall be labeled and preserved or frozen for identification. Information regarding water temperature, location, method of take, and any other information deemed relevant will be collected and recorded. Any specimens collected will be held for pick-up by the local NMFS office in Sacramento, along with additional relevant information, including color photographs, a description of the cause of death, and the name and affiliation of the person who collected the specimen.

Reporting

After completion of fish seining operations, the supervising fishery biologist shall complete a summary report documenting the methods used, the personnel conducting the operation, the numbers of each fish species collected and relocated, an estimate of the survival of fish released, and summary information regarding any fish mortalities. This report shall be accompanied by color photographs of the seining operation and site. The report shall be made available within 30 days for distribution to interested agencies, including CDFG, NMFS, USFWS and the AFSP Program Managers.